FOURTH FIVE-YEAR REVIEW REPORT FOR PURITY OIL SALES, INC. SUPERFUND SITE FRESNO COUNTY, CALIFORNIA

PREPARED BY

U.S. Army Corps of Engineers, Seattle District

FOR

U.S. Environmental Protection Agency

Region IX

Approved by: _____ **Date:** September 22, 2016

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Superfund Site Cleanup Branch

U.S. Environmental Protection Agency, Region 9

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Executive Summary

This is the Fourth Five-Year Review (FYR) of the Purity Oil Sales, Inc. Superfund Site (the Site) located in Malaga, California. The purpose of this FYR is to review information to determine if the remedy is and will continue to be protective of human health and the environment. The triggering action for this FYR was the signing of the previous FYR on September 20, 2011.

The Site occupies seven acres at 3281 South Maple Avenue approximately 0.5 miles south of the Fresno city limits. The Site has been divided into two operable units (OUs): Operable Unit 1 (OU-1), Groundwater and Tanks (OU-1); and Operable Unit 2 (OU-2), Soils.

OU-1 decision documents include the 1989 Record of Decision (ROD) and the 2012 ROD Amendment. The OU-1 remedies as outlined in the decision documents include pumping and treatment of contaminated groundwater to restore the aquifer to beneficial use beneath the property within a reasonable timeframe, implementation of a groundwater management zone institutional control (IC) strategy, and monitored natural attenuation to replace the pump and treat remedy (from the 2012 ROD Amendment). Contaminants of concern at OU-1 include both volatile organic compounds (VOCs) and metals.

OU-2 decision documents include the 1992 ROD, 1996 Explanation of Significant Differences (ESD), 2001 ESD, and 2006 ROD Amendment. The OU-2 remedies as outlined in the decision documents include neutralization and capping of contaminated soils, extraction and treatment of vapors from contaminated soil, and ICs. Contaminants originally found at OU-2 include a broad range of VOCs, semi volatile organic compounds, pesticides, and metals.

Remedial actions at the Site continue to operate and function as designed. Ongoing monitoring of groundwater for OU-1 and soil vapor for OU-2 indicates declining trends for most VOCs. Performance evaluations and monitoring have indicated the possible successful completion of the soil vapor extraction (SVE) system for OU-2. No equipment breakdowns were noted. Equipment changes were conducted on both groundwater wells of OU-1 and the OU-2 SVE system to improve efficiency. However, ICs as described in the decision documents have not been implemented due to land ownership issues. No other impacts to the protectiveness were identified during the review period of this FYR.

The remedy at OU-1 currently protects human health and the environment because the remedy continues to operate as needed, exposures to contaminated groundwater in the area around the Site are eliminated by well installation restrictions and on-site exposures are eliminated due to access restrictions enforced by on-site contractors. However, in order for the remedy to be protective in the long term, develop an IC implementation plan and implement IC's to prevent pumping of contaminated groundwater on-site and to eliminate potential exposure to contaminated groundwater on-site.

The remedy at OU-2 currently protects human health and the environment because past remedial actions have removed contaminated soils from the Site, a RCRA cap exists to eliminate exposures on-site, access controls ensure that the remedy is protected, and the SVE remedy has operated to possible successful completion. However, in order for the remedy to be protective in the long term, develop an IC implementation plan and implement IC's to prevent damage to the remedy and to prevent residential exposure to contaminated soils on-site and on adjacent properties.

Table of Contents

List of Figures

List of Tables

List of Appendices

List of Acronyms and Abbreviations

µg/L	micrograms per liter
ARAR	Applicable or relevant and appropriate requirement
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of concern
DCA	Dichloroethane
DCE	Dichloroethene
EPA	U.S. Environmental Protection Agency
ERD	Electron reductive dechlorination
ESD	Explanation of Significant Differences
EW	Extraction well
FFS	Focused Feasibility Study
FYR	Five-Year Review
GAC	Granulated activated carbon
GSM	Golden State Market
HQ	Hazard Quotient
IC	Institutional control
IRIS	Integrated Risk Information System
MCL	Maximum Contaminant Level
MNA	Monitored natural attenuation
NCP	National Contingency Plan
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and maintenance
OU	Operable Unit
POTW	Publicly owned treatment works
ppb	parts per billion
PRP	Potential responsible party
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RSL	Regional Screening Level
SVE	Soil vapor extraction
SVOC	Semivolatile organic compound
TBC	To be considered
TCE	Trichloroethylene
USACE	U.S. Army Corps of Engineers
UU/UE	Unlimited use and unrestricted exposure
VOC	Volatile organic compound

1. Introduction

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, 40 Code of Federal Regulation (CFR) Section 300.430(f)(4)(ii) of the National Contingency Plan (NCP) and EPA policy.

This is the Fourth FYR for the Purity Oil Sales, Inc. Superfund Site (also referred to as "the Site" or the "Purity Oil Site"). The triggering action for this statutory review was the signing of the previous FYR on September 20, 2011. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of two Operable Units (OUs) which will be addressed in this FYR. OU-1 addresses the groundwater remedy and the removal and disposal of seven on-site tanks. Groundwater remediation to remove contaminants of concern (COCs) has included extraction and treatment, green sand filtration, and air stripping. OU-2 addresses the soil remedy of the Site. The remedy for OU-2 includes soil vapor extraction (SVE), capping, and excavation to eliminate exposure to contaminated soils.

The Purity Oil Sales Inc. Superfund Site Fourth FYR was led by Patricia Bowlin from EPA Region 9. Participants included Blair Kinser (technical lead) and Miriam Gilmer (project manager) from the Seattle District of the U.S. Army Corps of Engineers (USACE), and Cynthia Wetmore (technical support) from EPA Region 10. The review began on 10/21/2015.

Table 1-1: Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Purity Oil Sales, Inc.		
EPA ID: CAD 980736151 CERCLIS:0921		
Region: 9	**State:** CA	**City/County:** Malaga, Fresno County
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the Site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA ***[If "Other Federal Agency", enter Agency name]*:**		
Author name (Federal or State Project Manager): Patricia Bowlin		
Author affiliation: U.S. EPA Region 9		
Review period: 10/21/2015 - 9/20/2016		
Date of Site inspection: 1/25/2016		
Type of review: Statutory		
Review number: 4		
Triggering action date: 9/20/2011		
Due date *(five years after triggering action date)*: 9/20/2016		

1.1. Background

The Purity Oil Sales, Inc. Superfund Site is located on a seven-acre parcel at 3281 South Maple Avenue (at Golden State Boulevard) approximately 0.5 miles south of the Fresno city limits in an unincorporated area of the Malaga Township (Figure 1-1). Currently, the Site is zoned for industrial use, and the only Site uses are related to the Superfund remedies. The Site contains several permanent and semi-permanent structures related to the remedies. The current and expected future land use at the Purity Oil Site and adjacent properties is industrial.

1.2. Physical Characteristics

The Purity Oil Site is located in the San Joaquin River drainage basin approximately 12 miles south of the San Joaquin River. No natural watercourses exist in the vicinity of the Site. The natural ground slope in the area is approximately 0.1 percent (5 feet per mile) to the west-southwest.

The Site is located in a mixed-use area and is surrounded by agricultural and industrial land to the west, a metal recycling facility to the north (Bruno's Iron and Metal), a convenience market known as Golden State Market (GSM, no longer in operation) and residential trailer park (Tall Trees Mobile Home Park, now removed) to the northeast, a propane distributor to the east, and a used automobile parts business to the south (Pick-A-Part Auto Wrecking) (Figure 1-2).

The groundwater aquifer in the Fresno area is designated as a sole-source aquifer which EPA defines as a sole or principal source aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. The aquifer in the vicinity of the Site is unconfined to depths of several hundred feet. Because there is no confining clay layer to restrict vertical groundwater flow, the shallow aquifer underlying the Site is probably hydrogeologically connected with deeper aquifer zones which provide domestic water supply for the City of Fresno and surrounding area.

Soils at the Site consist of sands and silty sands interspersed with layers of lower-permeability silt. The habitat on the Purity Oil Site and adjacent properties consists of ruderal grasses (plants commonly found in ecosystems disturbed by human activity) and ornamental trees and shrubs. This vegetation provides marginal habitat for species adapted to highly disturbed areas impacted by industrial activities.

1.3. Hydrology

Basement rock at the Site is greater than 1,000 feet below ground surface (bgs) and does not influence groundwater flow. Unconsolidated flood plain deposits that overlie basement rock consist of thick alluvial fans formed by the San Joaquin and King Rivers. The water-bearing sediments in the Fresno area consist of interbedded lenses and layers of materials ranging from clays to gravels. Silty sands, silts, and sands are the predominant soil types encountered beneath the Site.

Depth to groundwater at the Site is between 40 and 50 feet, varying with Site topography, wet season recharge, and off-site withdrawal. The present direction of groundwater flow is toward Fresno (to the northwest). Groundwater levels at the Purity Oil Site have been steadily decreasing since 1984, based upon water levels measured from Site monitoring wells.

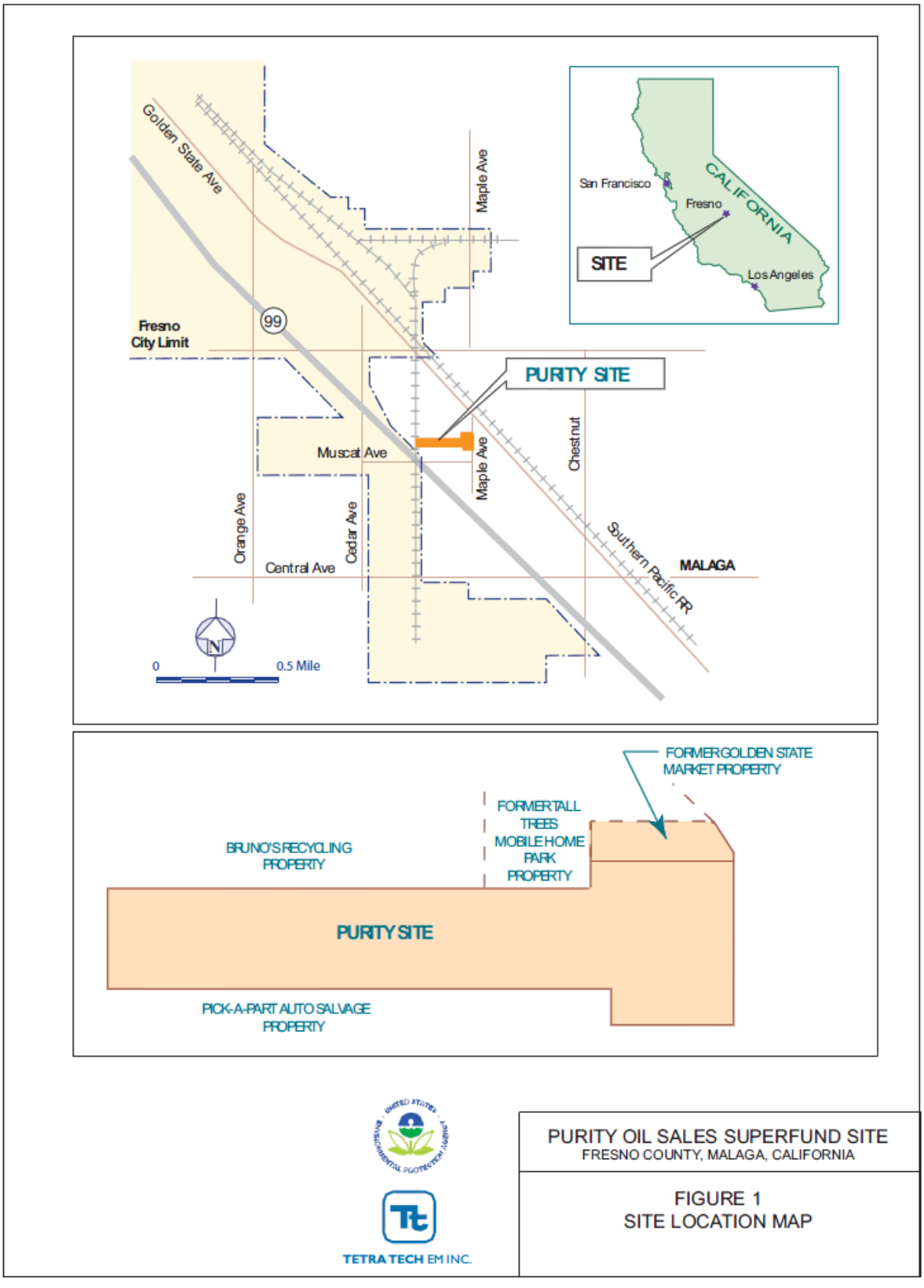


Figure 1-1: Location Map for the Purity Oil Sales, Inc. Superfund Site

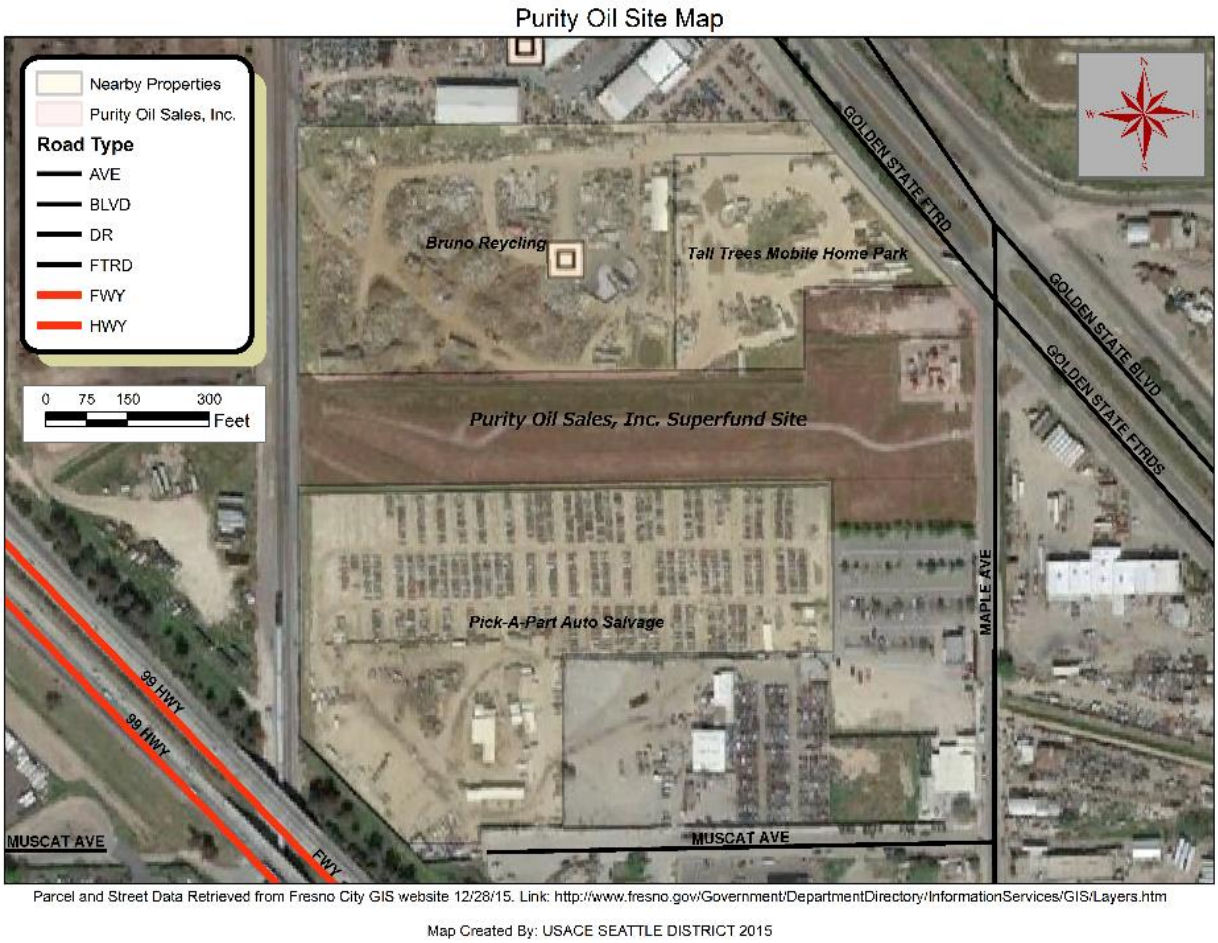


Figure 1-2: Detailed Map of the Purity Oil Sales, Inc. Superfund Site

2. Remedial Actions Summary

2.1. Basis for Taking Action

The presence of various pesticides, metals, semivolatile organic compounds (SVOCs) and volatile organic compounds (VOCs) in soil and groundwater provided the basis for taking action. The primary threat to human health was posed by ingestion of groundwater; inhalation of soil; and direct contact of soil, sediments, and surface water in nearby canals. The receptors were nearby residents and on-site workers. Site contamination originates from past activities related to the recycling of used oil from service stations, car dealers, truck stops, electrical transformer yards and military facilities. The byproducts of the recycling process were collected within sumps and storage tanks and were disposed of in sludge pits on-site.

2.2. Remedy Selection

2.2.1. OU-1: Groundwater and Tanks

On September 26, 1989, the OU-1 Record of Decision (ROD) for the Purity Oil Site was signed. The primary human health threats posed by contaminants addressed in the ROD for OU-1 included the use of contaminated groundwater by down-gradient residents and direct contact with contaminated tar sludge and soils present in rusting processing tanks. The primary groundwater COCs included VOCs, in particular chlorinated solvents, and arsenic as shown in Table 2-1.

RAOs below were derived from Section IV from the OU-1 ROD:

- Restore the sole-source drinking water aquifer as soon as possible to meet federal and state drinking water standards.
- Reduce the possibility of groundwater contamination spreading, and prevent the continued use of contaminated water.
- Prevent migration of contaminated groundwater to local domestic or irrigation wells[1].
- Eliminate a nuisance and potential health hazards from the Site.

The major components of the remedy for the contaminated groundwater and wastes in the on-site tanks in the OU-1 ROD include the following:

- Removal and proper disposal of the seven remaining on-site tanks and their contents.

[1] As noted in the OU-2 Rod Amendment. The statement has been noted as being relevant to OU-1 not OU-2. The ROD amendment also included the following footnote for this RAO which was as follows: Groundwater RAOs designated by an asterisk (*) are addressed in the OU-2 remedy as described in the OU-2 ROD. However, treatment and containment of contaminated soils at the Site assists in protection of groundwater by limiting the potential for contaminants to migrate from soil to groundwater.

- Provision of an alternate water supply to affected private well owners located northwest of the Site, if required.
- Water treatment to remove VOCs, iron, and manganese from groundwater including:
    - Extraction of contaminated groundwater to attain federal and state drinking water standards in the aquifer.
    - Treatment of extracted contaminated groundwater using green sand filtration and air stripping to attain federal and state drinking water standards.
    - Disposal of treated and tested water.
    - Groundwater monitoring to verify contaminant cleanup.
    - Management of the groundwater levels to effectively contain contamination through the collection of contaminants and flushing of the aquifer.

Table 2-1 provides a summary of groundwater cleanup levels for COCs selected in the OU-1 ROD along with the cleanup level for arsenic as adopted in the OU-1 ROD Amendment. The cleanup levels were based on federal and state Maximum Contaminant Levels (MCLs) at the time of the ROD signature.

Table 2-1: OU-1 Cleanup Standards for Groundwater

Contaminant	Cleanup Level (ppb)			
	Federal MCL		State MCLs	ROD
	Primary	Secondary		
1,1-DCA	--	--	5*	5
1,1-DCE	7	--	6	6
1,2-DCA	5	--	0.5	0.5
Arsenic[1]	10	--	10	10
cis-1,2-DCE	70	--	6*	6
trans-1,2-DCE	100	--	10*	10
Benzene	5	--	1	1
Carbon tetrachloride	5	--	0.5	0.5
Iron	--	300	--	300
Manganese	--	50	--	50
Trichloroethylene	5	--	5	5
Vinyl chloride	2	--	0.5	0.5

Notes: ppb=parts per billion, MCL=Maximum Contaminant Level, ROD = Record of Decision
[1]As included in the OU-1 ROD Amendment
*Identified in the ROD as State Action Levels for toxicity

On September 27, 2012, EPA signed the OU-1 ROD Amendment. The ROD Amendment selected a remedy that addresses remaining groundwater contamination above the selected cleanup levels to ensure that there is no long-term risk for human exposure to contaminated groundwater and to meet the RAO of restoring the aquifer to beneficial use. The selected remedy was monitored natural attenuation (MNA)

with institutional controls (ICs). Selected cleanup levels from the OU-1 ROD are presented in Table 2-1, including arsenic which was listed as a COC in groundwater in the original ROD but had no cleanup standard. Therefore, an arsenic cleanup standard was established in the 2012 ROD Amendment.

The remedy included a monitoring program utilizing existing and potentially new monitoring wells located on-site and off-site. The MNA remedy requires samples to be routinely collected until COCs are consistently below cleanup criteria. Based on data and a first-order rate analysis conducted prior to the 2012 ROD Amendment, the wells with VOC concentrations above the MCL were projected to decrease to below the MCL by 2015. The wells with arsenic, iron, and/or manganese concentrations above MCLs were projected to meet selected cleanup levels by approximately 2039.

An implementation plan for ICs has not been written. ICs will be put in place to prevent pumping of contaminated groundwater and eliminate exposure to COCs.

2.2.2. OU-2: Soils

On September 30, 1992, EPA signed the ROD for OU-2. The primary human health threats posed by contaminants addressed in the ROD for OU-2 included: (1) direct contact with contaminated Site soils and wastes in the pits, (2) direct contact with contaminated North Central Canal water and sediments, and (3) inhalation of Site-related dust. The primary surface soil COC is lead. The primary COCs for the pits and vadose zone are numerous organic compounds.

The 1992 ROD did not specify RAOs, however, the following purpose was provided:

- The purpose of this response action is to control risks posed by direct contact with soils and canal sediment and to minimize the migration of contaminants to groundwater.

To meet the intended purpose of the ROD, the selected remedy was treatment through SVE of soils from 14 feet bgs to the water table, capping in accordance with Resource Conservation and Recovery Act (RCRA) Subtitle C, installation of a slurry wall around the perimeter of the Site, and environmental monitoring to ensure the effectiveness of the remedial action.

After the OU-2 ROD was signed, EPA modified the remedy selected in the OU-2 ROD by issuing two Explanations of Significant Differences (ESDs). In July 1996, EPA issued an ESD to change the design of the SVE and containment systems. EPA eliminated the requirement for a retaining wall with the change to a sloping cover design. The 1996 ESD also approved a two-year post-construction monitoring period to evaluate the need for the SVE system and extended the boundaries of the Site to include the rear of the GSM because of the discovery of soils contaminated by Site-related wastes.

In March 2001, EPA issued a second ESD with the following RAOs:

- Preventing public health risks associated with short-term dermal contact with sludge seeps or inhalation of vapors (sulfur dioxide, hydrogen sulfide gases, and lead dust) generated from sludge seeps at the Site during construction.
- Removal of contaminated soils above health-based action levels that are located on certain properties directly adjacent to the Purity Oil property.

- Prevent or minimize further migration of contaminants from source material to groundwater.

Between December 2000 and June 2003, EPA conducted investigations to assess whether contamination from the Site had impacted neighboring properties and to address observations of sludge seepage. Sludge was observed seeping to the surface of the sludge pit slopes at approximately 20 locations. EPA was concerned that the acidic sludge or other acidic liquids within the sludge pits would seep out and damage the closure cover system. EPA identified the following neighboring properties impacted by the acidic sludge: Bruno's Iron and Metal, the Tall Trees Mobile Home Park, the GSM, and Pick-A-Part Auto Wrecking. Contaminants in soil at these four properties included VOCs, SVOCs, pesticides, petroleum hydrocarbons, and metals (EPA 2006). A pilot-scale neutralization study was performed and proved that calcium carbonate was the best reagent to neutralize the acidic sludge.

In June 2006, the EPA issued the OU-2 ROD Amendment to address the presence of acidic sludge. The OU-2 ROD Amendment includes the following additional RAOs:

Purity Oil Property RAOs

- Prevent contact of acidic sludge and acid liquids with the cap liner to increase the remedy's overall protection of human health and the environment.
- Prevent human exposure (through direct contact) to contaminated soils containing COCs at concentrations exceeding applicable or relevant and appropriate requirements (ARARs) and to be considered (TBC) criteria for soil.
- Prevent or minimize further migration of contaminants from source material to groundwater.

Adjacent Properties RAOs

- Prevent acidic sludge and other Site-related contaminants from contacting industrial workers on properties adjacent to the Purity Oil property (Pick-A-Part Auto Wrecking, Bruno's Iron and Metal, and Tall Trees Mobile Home Park) and residents on the GSM property.
- Remove acidic sludge and contaminated soil containing COCs at concentrations exceeding health-based action levels at properties adjacent to the Purity Oil property.
- Prevent or minimize further migration of contaminants from source material groundwater.
- Prevent migration of contaminated groundwater to local domestic or irrigation wells.
- Remediate COCs in soil and groundwater to drinking water standards and other health-based action levels to reduce risks from potential exposure to indoor air contaminants whose source is Site-related contamination.
- Prevent further migration of soil vapor containing COCs at concentrations exceeding ARARs and TBC criteria.

The OU-2 ROD Amendment selected the following remedial actions:

- Neutralization - Neutralize (increase the pH to above 5) the entire sludge pit area from the ground surface to an estimated depth of 15 feet bgs.

- Low-Permeability Cap - Construct a low-permeability cap to eliminate the risk of human exposure and to reduce surface water infiltration through the waste material that could potentially mobilize contaminants in the vadose zone causing a release to groundwater.
- Excavation of Contamination at Adjacent Properties - Excavate sludge and contaminated soil down to a depth of four feet bgs at the adjacent industrial properties (Pick-A-Part Auto Wrecking, Bruno's Iron and Metal, Tall Trees Mobile Home Park) and seven feet bgs at the adjacent residential property (GSM). Place excavated material (neutralize if necessary) under the low-permeability cap, backfill excavations with clean soil, and either demolish and reconstruct GSM structures or purchase GSM property and rehabilitate for industrial use.
- Additional Soil and Gas Sampling - Determine the extent of contamination left in place between the bottom of the excavations and the top of the water table.
- Groundwater Monitoring Program - Continue with the quarterly groundwater monitoring program currently in place to assess the effectiveness of both the groundwater and soil remedies.
- SVE and Vadose Zone Monitoring System - Install SVE wells to remove contaminants, and install vadose zone monitoring wells to monitor soil vapor concentrations and the vacuum created by the extraction wells.
- Institutional Controls (ICs) - Apply ICs such as deed restrictions, to ensure that sensitive uses do not occur at adjacent properties. ICs related to this Site are provided in Table 2-2.

ARARs selected in the OU-2 ROD Amendment of 2006 supersede those provided in the original OU-2 ROD. A summary of the ARARs is provided in Appendix C.

The cleanup action for the Purity Oil property was to excavate and neutralize (using calcium carbonate) the entire waste pits that extend to a depth of approximately 15 feet bgs. Cleanup levels selected in the 2006 OU-2 ROD Amendment are summarized in Appendix E, Table E-2. The cleanup levels in Table E-2 were used as health-based cleanup levels to protect against direct contact exposure at four feet bgs for the adjacent properties (Pick-A-Part Auto Wrecking, Bruno's Iron and Metal, Tall Trees Mobile Home Park, and GSM [note that the land use for GSM was changed to industrial after Chevron purchased the property]). Any property cleaned to industrial standards was to have ICs to prevent residential use. Although deed restrictions have not been implemented on Site or on the adjacent properties, the current and reasonably anticipated future use is industrial.

Table 2-2: Summary of Planned and/or Implemented Institutional Controls (ICs)

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
On-site Groundwater	Yes	Yes	Purity Oil Sales	Complete deed restriction to ensure that future land uses restrict the use of groundwater.	Deed Restriction (not completed)
Off-site Groundwater	Yes	Yes	Parcel # 3, 33, 41, 11, and 8	Malaga County Water District requires approval of any installation of private water supply wells. In most cases such installation has been prohibited.	Chapter 14.08 of the current Fresno County Ordinance Code
Purity Oil property Soil	Yes	Yes	Purity Oil Sales	Institutional controls will also be required for the Purity Oil property to protect the components of the remedy and allow for operation and maintenance.	Deed Restrictions (not completed)
Properties surrounding the Purity Oil property Soil	Yes	Yes	Parcel # 3, 33, 41, 11, and 8	If soil containing concentrations greater than the residential cleanup levels are left in place, place deed restrictions on those properties that prevent the residential use of the property and ensure that the allowable use for those properties remains industrial.	Deed Restrictions (not completed)

2.3. Remedy Implementation

The following sections discuss the remedy implementation and operations and maintenance (O&M) for each OU.

2.3.1. OU-1 Remedy

In October 1990, Chevron Environmental Management Corp., (Chevron) Corp., the potentially responsible party for Purity, removed the remaining seven large tanks and their contents from the Site. In

March 1992, private well users' downgradient from the Site were connected to either the Malaga County Water District or the City of Fresno water system. In 1994, Chevron completed construction and began operation of the groundwater extraction and treatment system. After ceasing operation of the system in 2005, Chevron decommissioned the treatment facility and the extraction wells. The treatment facility currently resides on-site. The current replacement remedy for OU-1 is MNA as described in the 2012 ROD Amendment for OU-1.

2.3.2. OU-2 Remedy

In June 2008, Chevron completed all OU-2 remedial activities related to off-site excavations, sludge neutralization, and Site restoration, including cap construction and revegetation. In March 2010, Chevron began installation of the SVE system based on the Final SVE Pilot Test Results and Conceptual SVE System Design including five SVE wells, five vacuum monitoring points, and five soil vapor monitoring points. In July 2010, Chevron began operation of the SVE system using a granular activated carbon (GAC) treatment system. After concentrations of soil vapor in the extraction well network had reached asymptotic levels, a soil vapor rebound study was initiated. In December 2015, Chevron stopped operation of the SVE system so that the rebound study could commence. In October 2016, EPA will determine if the SVE system should be restarted or if the rebound study should continue.

The ongoing portions of the soils remedy include operation and monitoring of the SVE system (prior to the rebound study) and monitoring of groundwater to ensure the effectiveness of both the soil and groundwater remedies. During SVE system operation, the extracted soil vapors are filtered through four 3,000-pound GAC vessels arranged in series. The inlet and outlet port for each carbon vessel is equipped with sample ports to allow for monitoring of GAC system treatment efficiency and to monitor the system for breakthrough of vapor phase constituents. Final system discharge from the last carbon vessel is through a 15-foot-tall discharge stack.

2.4. Operation and Maintenance (O&M)

Current ongoing O&M activities include cap maintenance, groundwater sampling and monitoring, and SVE operations and modifications as needed. Cap O&M activities have included mowing, filling in sinkholes, repairing access controls (fencing), and Site surveys. Groundwater monitoring is ongoing and occurs on a semi-annual basis. Prior to shut down of the SVE system for the rebound study, the SVE system had operated continuously (run time of approximately 82 percent) with the exception of brief shut-down periods necessitated by regular carbon change-outs and maintenance activities, permitted discharge of condensate water, intentional shutdowns during soil vapor well sampling, automatic system shutdowns, power outages, and a minor mechanical failure involved with carbon change-out equipment.

3. Progress Since the Last Five-Year Review

3.1. Previous Five-Year Review Protectiveness Statement and Issues

The protectiveness statement from the 2011 FYR for the Purity Oil Site stated the following:

The remedy at OU-1 protects human health and the environment in the short term because there are no exposures to groundwater. However, to ensure long-term protection, the following actions need to be taken:

- Completion of a Focused Feasibility Study Addendum to examine remedial options for contaminated groundwater and implementation of a final remedy as specified in a decision document by EPA.
- Development of an OU-1 groundwater management zone strategy to outline proper steps to reach the goal of preventing off-site aquifer users from impacting the groundwater plume at the Purity Oil Site.

The remedy at OU-2 currently protects human health and the environment because the cap closure system eliminated the direct contact exposure pathway to contaminants. Additionally, the OU-2 remedy includes an SVE system to remove VOCs in the vadose zone soil and at adjacent properties to reduce the potential for vapor intrusion from COCs in underlying contaminated soils into buildings. However, to ensure long-term protection, the following actions need to be taken:

- Development of an implementable institutional controls strategy.

Since the remedial actions at OU-1 (groundwater and tanks) and OU-2 (soils) are protective in the short term, the Purity Oil Sales, Inc. Superfund Site is currently protective of human health and the environment.

The 2011 FYR included three issues and recommendations. These recommendations and the current status of each are provided in Table 3-1.

3.2. Work Completed at the Site During this Five Year Review Period

During the first quarter of 2011, Leidos (Chevron's contractor for the SVE system) modified the SVE system to automatically drain the air-water separator to the OU-1 wastewater treatment system for processing. Later in 2011, Leidos conducted an evaluation of the SVE wells. The purpose of the evaluation was to determine if other configurations of the SVE system would improve the efficiency of the system. The evaluation resulted in the removal of well SVE-4 from the extraction network and the addition of well SVE-2.

Table 3-1: Status of Recommendations from the 2011 Five-Year Review

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	The selected remedy for OU-1 (groundwater and tanks) is not operating.	Chevron will prepare a Focused Feasibility Study (FFS) Addendum as a follow-up to the completion of a two-year, in-situ enhanced reductive dechlorination (ERD) pilot study performed between 2008 and 2010. The FFS Addendum will examine remedial alternatives for OU-1 based on data collected during the pilot study as well as data from current Site conditions (i.e., operation of the SVE system). A final remedy decision for the groundwater operable unit will be made in a decision document by the EPA.	Completed	Monitored Natural Attenuation (MNA) was a remedial alternative in the 2006 FFS and the 2012 FFS Addendum. A ROD Amendment was completed in 2012 to end pump and treat activities and to implement MNA with institutional controls (ICs).	9/27/2012
1	The groundwater management zone strategy called for in the OU-1 ROD has not been developed.	An OU-1 groundwater management zone strategy needs to be developed to outline proper steps to reach the goal of preventing off-site aquifer users from impacting the groundwater plume at the Purity Oil Site.	Completed	OU-1 ROD Amendment specified that the new remedy would be MNA. Therefore, pump and treat was no longer to be conducted and the groundwater management strategy was no longer necessary.	9/27/2012
2	The OU-2 remedy requirement for ICs to prevent damage to the remedy, as well as the requirement for off-property ICs to prevent exposure to contaminated soils, has not yet been addressed.	An IC strategy for OU-2 needs to be developed. This strategy will be included in the OU-2 O&M Manual for EPA approval.	Ongoing	Chevron does not own the Site property or most of the adjacent properties. This has limited the ability of Chevron to place ICs on the properties. Chevron is currently evaluating its options in implementing ICs.	N/A

In May of 2012, a sinkhole was observed at the southern property line along the Pick-A Parts corrugated metal fence. The sinkhole was repaired on August 26 with the placement of a slurry mix that was allowed to harden. Once hardened, native soil was placed over the slurry mix.

In February of 2013, Leidos conducted another SVE well evaluation resulting in an SVE system modification that included the closing off of wells SVE-1a and SVE-2 and the opening of wells SVE-5 and SVE-6 (See Figure B 4 for SVE well location map). In March of 2013, the system was shut down pending carbon change-out procedures. During the time the system was down (March to May of 2013), concentrations of TCE, *cis*-1,2-DCE, and total VOCs in wells SVE-1a or SVE-2 did not exhibit substantial rebound.

Due to declining water levels, bladder pumps in wells MW-111SP and MW-13 were modified and lowered to a deeper depth in January 2014 (See Figure B-1 for well location map). As water levels continued to decline, bladder pumps were also lowered in wells MW-9, MW-11SP, MW-13, and MW-21. All bladder pumps were lowered to the bottom of the well screens except for MW-11SP which was lowered an additional 30 inches prior to sampling. In 2015, wells MW-9 and MW-21 went dry due to the ongoing drought in California. The impacts of the declining groundwater levels have resulted in a reduction in sampling at the Site. Several wells (as shown in Appendix B, Table B-2) have gone dry and can no longer be sampled until either groundwater levels rise or new wells are drilled and screened at lower depths.

In August of 2015, Leidos completed a Soil Vapor Extraction Rebound Testing Work Plan that was approved by EPA. The work plan was intended to provide a rationale for SVE remediation system shutdown, guidance on rebound testing vapor monitoring frequency and methodology, and the criterion for restarting the SVE system. In December 2015, Leidos shut down the SVE system to allow for the commencement of the rebound study. In October 2016, EPA will review the results of the rebound study to determine if SVE system operation will restart or if the rebound study will continue.

3.3. Community Notification

On July 15, 2016, EPA placed a public notice in the *Fresno Business Journal* stating that there was a Five-Year review and inviting the public to submit any comments to EPA. There were no comments. The results of the review and the report will be made available at the Site information repository located at the following locations:

Fresno County Central Library
2040 Mariposa Street
Fresno, California

EPA Regional Records Center
75 Hawthorne Street
San Francisco, California

Site documents are also located on EPA's website: http://www.epa.gov/superfund/purityoil .

3.4. Data Review

3.4.1. Soil

USACE conducted an independent evaluation of the SVE data for this FYR (Appendix B, Figures B-5 through B-11). Significant decreases in concentrations of COCs in the soil vapor have occurred. Soil vapor concentrations of cis-1,2-DCE and TCE from all soil vapor extraction wells impacted with chlorinated VOCs (SVE-1a, SVE-2, SVE-4, SVE-5, and SVE-6) reached asymptotic levels after extended periods of extraction (minimum of 14 months for each well). Cis-1,2-DCE, 1,1 DCA, 1,1 DCE, trans-1,2-DCE, and vinyl chloride concentrations in key vapor monitoring points have decreased dramatically in most of the sampling intervals. These results indicate that the SVE system has removed significant amounts of VOC vapors from the soil.

During the past five years, water levels have continued to drop which has resulted in a larger vadose zone, and exposure to the DNAPL areas formerly below the water table. This larger exposed area has allowed the SVE system to remove significantly more mass from this zone than the pump and treat system would have been able to achieve.

Information from cap settlement surveys and O&M reports (as summarized in Appendix B, Section B.3) has indicated that no significant subsidence has occurred. Periodic inspections have found no other significant issues with regards to the cap during this review period.

3.4.2. Groundwater

Groundwater levels have declined over the past five years; water levels dropped 16.5 feet during this five year review period. As a consequence, twenty-one monitoring wells in the shallow to shallow-intermediate depths have gone dry. The wells that had concentrations above cleanup levels became dry in 2014 due to the continued decline in groundwater levels.

As of 2016 the groundwater plume has shrunk in size, and VOCs have decreased to concentrations below cleanup levels in all monitoring wells with water. January 2013 was the last sampling event that had all wells available for analysis and therefore was used to provide the most current analysis of Site groundwater conditions. The January 2013 data indicate that there were no groundwater samples with concentrations above cleanup levels for the following contaminants: benzene, 1,1-Dichloroethane (DCA), 1,1-Dichloroethene (DCE), cis-1,2-DCE, trans-1,2-DCE, Trichloroethylene (TCE), or vinyl chloride.

Three monitoring wells (all currently dry) had detections of 1,2 DCA above the 0.5 ug/L cleanup level with the highest concentration being 1.0 ug/L, and one monitoring well (currently dry) had a detection of arsenic above the 10 ug/L cleanup level at 14.5 ug/L. Trend analysis (See Appendix B) identified one well (currently dry) near the center of the Site with an increasing trend for 1,2 DCA and two wells (currently dry) with an increasing trend for arsenic. The increase in 1,2-DCA is assumed to have occurred due to advection and dispersion into the well and is not indicative of MNA remedy failure and does not indicate that the plume is increasing in size due to its location. The increases in arsenic are a result of either biodegradation of oily waste or geochemical changes caused by the use of calcium carbonate resulting in alkaline conditions and possible desorption of arsenate. Overall, the COC plumes have significantly decreased in size from 2002 to 2013.

3.5. Site Inspection

The inspection of the Site was conducted on January 25, 2016. In attendance were Patricia Bowlin (EPA Region 9, Remedial Project Manager), Blair Kinser (USACE, Environmental Engineer), Nathan Blomgren (Chevron, Engineer), William Slowik (Leidos, Project Manager), Patrick Wooliever (Tetra Tech, Director), and Ralph Carson (Stantec, Senior Geologist).

Overall, the inspection noted no issues regarding the condition of the groundwater monitoring or SVE wells. The cap was in good condition and no erosion or settlement was noted. Some damage to the fencing surrounding the Site was noted due to vandalism. Shallow wells on or near the Site were noted to be dry which has resulted in less monitoring and sampling.

4. Technical Assessment

4.1. OU-1 Groundwater and Tanks

4.1.1. Question A: Is the remedy functioning as intended by the decision documents?

Yes. The remedial actions at the Purity Oil Site continue to operate and function as intended. Ongoing monitoring of groundwater indicates declining trends for most VOCs; however, the declining water levels have impacted many of the Site monitoring wells. Arsenic was found to have increasing trends in a couple of wells but the increasing trends for arsenic were determined to be caused through geochemical and biological changes initiated by the remedies on the Site and not from a failure of the MNA remedy. These geochemical and biological changes are temporary in nature and the concentrations will revert to natural background concentrations over time. The iron and manganese plumes have also shrunk on-site indicating progress toward ROD cleanup levels. Off-site sources of dissolved iron and manganese have contributed to the development of dissolved iron and manganese off-site. Site contractors ensure that land use and groundwater use on Site is restricted.

Declining groundwater levels have resulted in a reduction in sampling at the Site. Several wells (as shown in Appendix B, Table B-2) have gone dry and can no longer be sampled until either groundwater levels rise or new wells are drilled and screened at lower depths. Current groundwater monitoring indicates declining trends for most VOCs, however all wells have not been available for sampling since the first half of 2013. No equipment breakdowns were noted. Equipment changes were conducted on both groundwater wells to improve efficiency. No opportunities exist to improve the performance and/or cost of monitoring, sampling, or the treatment system. The Site contractors continue to evaluate the current remedies and make adjustments as needed.

ICs for off-site groundwater have been implemented by the local Malaga Water District, which regulates the placement and usage of groundwater wells around the Site. No ICs are known to officially exist for on-site groundwater; however, the on-site contractors enforce land and groundwater use restrictions. Access controls are in place and are effective in limiting trespassing, which protects the active remedy.

4.1.2. Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of Remedy Selection Still Valid?

Yes. No new ARARs or changes to existing ARARs were noted to call into question the protectiveness of the remedy. Site cleanup levels do not exceed chemical-specific ARARS as shown in Appendix C. Toxicity factors of exposure to groundwater were evaluated using a comparison of the Tap Water Regional Screening Level (RSL) to the ROD groundwater cleanup standard. All COC cleanup levels were evaluated and were considered protective. No new or changing exposure pathways were identified. No new contaminants or contaminant sources that would lead to a potential or actual pathway were identified. The remedy is expected to meet RAOs.

4.1.3. Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

No. No impacts to the remedy were noted during the review period of this FYR. No changes or vulnerabilities related to climate change were identified that had not already been apparent in remedy implementation or O&M.

4.2. OU-2 Soils

4.2.1. Question A: Is the remedy functioning as intended by the decision documents?

Yes. The remedial actions at the Purity Oil Site continue to operate and function as intended. Past soil vapor monitoring at the Site indicate declining trends for most VOCs. Performance evaluations and monitoring have indicated the possible successful completion of the SVE system. No equipment breakdowns were noted. Equipment changes were conducted on both groundwater wells and the SVE system to improve efficiency.

Performance evaluations and monitoring have indicated the possible successful completion of the SVE system. The SVE system has been temporarily shut down for a rebound study to verify that concentrations of VOCs in the soil vapor will not rebound. The study will determine if continued SVE operations will be needed. Past O&M and cap reports along with the FYR Site inspection indicate that there are no issues with regards to the on-site cap. No opportunities exist to improve the performance and/or cost of monitoring, sampling, or the treatment system.

Soils require ICs as described in decision documents. However, although ICs have not been officially placed on the Purity Oil Site the on-site contractors enforce appropriate Site use restrictions. Soils that are contaminated are not at the surface, therefore the lack of ICs does not impact the protectiveness of the remedy. Access controls are in place and are effective in limiting trespassing which protects the active remedy. Exposures to pedestrians, workers, and customers of nearby businesses are eliminated because of the placement of caps and past excavations that have occurred on Site. For the adjacent properties cleaned up to industrial standards, the required deed restrictions limiting the property to industrial use have not been completed. However, the properties are currently used for industrial use, and no change in use is planned.

4.2.2. Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of Remedy Selection Still Valid?

Yes. No new ARARs or changes to existing ARARs were noted to call into question the protectiveness of the remedy. Site cleanup levels do not exceed chemical-specific ARARS as shown in Appendix C. Site soil cleanup levels were evaluated and compared to regional screening levels for industrial soil (Appendix E). Though in some cases the cleanup level exceeded the protective cancer risk range, all cleanup levels were regarded as protective because no exposure pathway to contaminated soil exists. No new or changing exposure pathways were identified. No new contaminants or contaminant sources that would lead to a potential or actual pathway were identified.

EPA updated the toxicity assessment for TCE since the last five year review, reclassifying TCE as a human carcinogen and identifying a short-term non-cancer risk for the vapor intrusion pathway. There is currently no risk of vapor intrusion from groundwater or soil gas at the Site. There are no buildings on Site or within 100 feet of the property boundary. The groundwater concentrations are below vapor intrusion screening levels. Operation of the SVE system has prevented soil vapor from migrating to adjacent properties. Currently, the operation of the SVE system has been suspended for the duration of the rebound study. Based on the results of the rebound study, EPA will determine if SVE system operation will resume. The OU-2 ROD Amendment requires additional soil and soil gas sampling on adjacent properties for the purposes of determining the potential for vapor intrusion effects from residual VOCs in the subsurface. This sampling will be performed upon completion of the SVE system operation. Based on the results of the sampling, EPA will re-evaluate the vapor intrusion pathway.

4.2.3. Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

No. No impacts to the remedy were noted during the review period of this FYR. No changes or vulnerabilities related to climate change were identified.

5. Issues/Recommendations

Table 5-1: Issues and Recommendations Identified in the Five-Year Review

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): 1	**Issue Category: Institutional Controls**			
	Issue: Institutional controls for groundwater restriction on-site have not been implemented and ownership issues may make deed restriction difficult to implement.			
	Recommendation: Develop an IC implementation plan and implement IC's to prevent pumping of contaminated groundwater on-site and to eliminate potential exposure to contaminated groundwater on-site.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2021
OU(s): 1 and 2	**Issue Category: Institutional Controls**			
	Issue: Deed restrictions preventing residential uses on on-site and on adjacent properties have not been implemented and ownership issues may make deed restrictions difficult to implement.			
	Recommendation: Develop an IC implementation plan and implement IC's to prevent damage to the remedy and to prevent residential exposure to contaminated soils on-site and on adjacent properties.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2021

Other Finding: Due to declining water levels, many Site monitoring wells are unable to be sampled currently. The MNA monitoring program will be evaluated to determine if it is still sufficient or if new monitoring wells are needed.

Table 5-2: Protectiveness Statement

Protectiveness Statement(s)		
Operable Unit:1	*Protectiveness Determination:* Short-term Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy at OU-1 currently protects human health and the environment because the remedy continues to operate as needed, exposures to contaminated groundwater in the area around the Site are eliminated by well installation restrictions and on-site exposures are eliminated due to access restrictions enforced by on-site contractors. However, in order for the remedy to be protective in the long term, develop an IC implementation plan and implement IC's to prevent pumping of contaminated groundwater on-site and to eliminate potential exposure to contaminated groundwater on-site.		

Protectiveness Statement(s)		
Operable Unit:2	*Protectiveness Determination:* Short-term Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy at OU-2 currently protects human health and the environment because past remedial actions have removed contaminated soils from the Site, a RCRA cap exists to eliminate exposures on-site, access controls ensure that the remedy is protected, and the SVE remedy has operated to possible successful completion. However, in order for the remedy to be protective in the long term, develop an IC implementation plan and implement IC's to prevent damage to the remedy and to prevent residential exposure to contaminated soils on-site and on adjacent properties.		

Sitewide Protectiveness Statement	
Protectiveness Determination: Short-term Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The remedies at the Purity Oil Site currently protect human health and the environment because no exposure pathways exists. However, in order for the remedy to be protective in the long term, develop an IC implementation plan and implement IC's.	

6. Next Review

The next five-year review report for the Purity Oil Sales, Inc. Superfund Site is required five years from the completion date of this review.

Appendix A: List of Documents Reviewed

U.S. Environmental Protection Agency (EPA). 1989. Record of Decision for the Purity Oil Sales Superfund Site, Groundwater and Tanks Operable Unit. Region 9. San Francisco. September 30.

EPA. 1992. Record of Decision for the Purity Oil Sales, Inc. Superfund Site, Soils Operable Unit. Region 9. San Francisco. June 30.

EPA. 1996. Explanation of Significant Differences for the Record of Decision: Purity Oil Sales, Inc. Malaga, California. Region 9. San Francisco. July 3.

EPA. 2001. Explanation of Significant Differences for the Record of Decision at the Purity Oil Superfund Site in Malaga, California. Region 9. San Francisco, March 30.

EPA. 2006. Record of Decision Amendment, Purity Oil Sales Superfund Site, Soils Operable Unit No. 2, Malaga, California. Region 9. San Francisco. June 30.

EPA. 2011. Five-Year Review Report for Purity Oil Sales, Fresno County, California. Region 9. San Francisco. September.

EPA. 2012. Record of Decision Amendment, Purity Oil Sales Superfund Site, Groundwater and Tanks Operable Unit No. 1, Malaga, California. Region 9. San Francisco. September 27.

EPA. 2015. Proposed Changes to Current OU-1 Groundwater Monitoring Program OU-1, Remedial Design and Remedial Action Work Plan, Purity Oil Sales Superfund Site, Malaga, Fresno County, California. June 12.

Leidos, 2015. Soil Vapor Rebound Testing Work Plan, Purity Oil Sales Superfund Site. August 12.

Leidos, 2015. Quarterly Operations Summary Report Fourth Quarter 2014 Soil Vapor Extraction System, Purity Oil Sales Superfund Site. December 16.

Leidos, 2015. Quarterly Operations Summary Report First Quarter 2015 Soil Vapor Extraction System, Purity Oil Sales Superfund Site. December 16.

Leidos, 2015. Quarterly Operations Summary Report Second Quarter 2015 Soil Vapor Extraction System, Purity Oil Sales Superfund Site. December 16.

Leidos, 2016. Soil Vapor Extraction Rebound Testing Memo, Purity Oil Sales Superfund Site. March 21.

Stantec. 2013. 2012 Annual OU-2 Cap Operation and Maintenance Report for Purity Oil Sales Superfund Site, Malaga, California. January 23.

Stantec. 2015. 2014 Annual OU-2 Engineered Cap Operation and Maintenance Report for Purity Oil Sales Superfund Site, Malaga, California. Purity Oil Sales Superfund Site. January 30.

Stantec. 2015. Semi-Annual (First Half 2015) Groundwater Monitoring Report. Purity Oil Sales Superfund Site. April 30.

Stantec. 2015. Semi-Annual (Second Half 2015) Groundwater Monitoring Report. Purity Oil Sales Superfund Site. October 30.

Appendix B: Data Review

B. Data Review

B.1 Groundwater

The following documents were reviewed to ascertain the condition of the groundwater environment at the Purity Oil Site:

- Letter Subject: Proposed Changes to Current OU-1 Groundwater Monitoring Program, OU-1 Remedial Design and Remedial Action Work Plan, Purity Oil Sales Superfund Site, Malaga, Fresno County, California, Dated June 12, 2015
- Semi-Annual (Second Half 2015) Groundwater Monitoring Report, Dated October 30, 2015

B.1.1 Site Hydrology

A number of wells in the shallow to shallow-intermediate depths have gone dry. As a result, data from the time that the wells went dry through 2015 was not included in the trend analysis conducted for this Five-Year Review (FYR). To improve the reliability of the trend analysis, data from as far back as 2008 was utilized. Table B-1 presents a summary of the site hydrogeology based on on-going water level monitoring. Contaminant of concern (COC) detections in monitoring wells from the fourth quarter of 2010 through the first half of 2016 are provided as Table B-2. As shown in the table, most of the wells with detections above cleanup levels are screened at shallow depths. Well locations are shown on Figure B-1 (note: figures are included at the end of this appendix).

Table B-1: Site groundwater characteristics

Groundwater Zone	Minimum Groundwater Depth (ft)	Maximum Groundwater Depth (ft)	Geometric Mean of Vertical Hydraulic Gradient (ft/ft)	Horizontal Groundwater Velocity (ft/year)	Direction of Groundwater Flow
Shallow Groundwater Zone (BTOC)	79.50	98.35	0.0029	38	NW
Deep Groundwater Zone (AMSL)	201.61	210.23	0.0034	44	NW

Notes: BTOC = below top of casing, AMSL = above mean sea level.
Two different datums (BTOC AND AMSL) were utilized in determining the depths for the shallow and deep zones.

Historic groundwater elevation declines for wells within the monitoring well network over 1-, 2-, 5-, and 27-year intervals as provided in the Semi-Annual (Second Half 2015) Groundwater Monitoring Report are as follows: 1 year, 5.0-foot decline; 2 years, 11.5-foot decline; 5 years, 16.5-foot decline; 27 years, 39.5-foot decline. This data does not include data from wells that have gone dry. Groundwater elevation contour maps for the shallow-intermediate and deep groundwater zones from July 2015 are provided as Figure B-2 and Figure B-3, respectively.

Table B-2: COC detections in monitoring wells from the fourth quarter of 2010 through the first half of 2016

Well ID	Screen Interval (ft BTOC)	GWM Well per EPA, 2015	Frequency	1H16	2H15	1H15	2H14	1H14	2H13	1H13 (all samp)	2H12 (all samp)	1H12 (all samp)	4Q11 (all samp)	3Q11 (all samp)	2Q11 (all samp)	1Q11 (all samp)	4Q10 (all samp)
Shallow																	
MW-42	58.7 - 73.7	--	--														
MW-43	59.8 - 74.8	--	--							1,2-DCA	1,2-DCA; cis	1,2-DCA	1,2-DCA; cis, VC	1,2-DCA, VC	1,2-DCA	1,2-DCA; cis	1,2-DCA; cis
MW-44S	60.5 - 75.5	--	--						1,2-DCA	1,2-DCA	1,2-DCA	1,2-DCA	1,2-DCA			1,2-DCA	1,2-DCA
MW-45	60.7 - 75.7	--	--						As	As	As	As	As	As	As	1,2-DCA; As	1,2-DCA; As
MW-46	76.1 - 91.1	--	--														
MW-47	58.5 - 73.5	--	--														
MW-48S	75.4 - 90.4	--	--														
MW-49	59.8 - 74.8	--	--														
MW-54	62.0 - 77.0	Yes	Annual														
ERD PT-3A	64.8 -74.8	--	--						As	1,2-DCA	1,2-DCA, cis, As	1,2-DCA, cis, As	1,2-DCA, As	As	As	1,2-DCA, cis, As	
Shallow to Intermediate																	
MW-9	51 - 81	--	--								1,2-DCA; cis						
MW-11SP/IP*	60 - 88	Yes	Semi														
MW-13	55 - 84	Yes	Semi			As											
MW-20	43 - 79	--	--														
MW-21	54.5 - 81.5	Yes	Annual														
MW-31P	NA	--	--														
MW-39	53 - 82	--	--														
MW-40	52 - 82	--	--														
MW-41	53 - 82	--	--														
MW-50	67.6 - 82.6	Yes	Annual														
MW-51	66.7 - 81.7	--	--														
MW-52	67.9 - 82.9	--	--														

Well ID	Screen Interval (ft BTOC)	GWM Well per EPA, 2015	Frequency	1H16	2H15	1H15	2H14	1H14	2H13	1H13 (all samp)	2H12 (all samp)	1H12 (all samp)	4Q11 (all samp)	3Q11 (all samp)	2Q11 (all samp)	1Q11 (all samp)	4Q10 (all samp)
MW-53	69.9 - 84.9	--	--														
Intermediate																	
MW-23	101 - 113	Yes	Semi								1,2-DCA			1,2-DCA	1,2-DCA	1,2-DCA	1,2-DCA
MW-24I	87.9 - 97.9	Yes	Semi														
MW-25I	92.8 - 102.8	Yes	Annual														
MW-29P	97 - 154	--	--														
MW-34I	102 - 121	Yes	Annual														
MW-44I	99.7 - 109.7	Yes	Semi														
MW-48I	107.0 - 117.0	Yes	Annual														
Deep																	
MW-2D	142 - 164	Yes	Annual														
MW-26P	172 - 184	--	--														
MW-28P	175 - 194	--	--														
MW-34D	151 - 170	--	--														
MW-44D	124.4 - 134.4	Yes	Semi		As										As		
MW-48D	127.2 - 137.2	Yes	Semi														
Unknown Depth																	
MW-32P	NA	--	--														
MW-33P	NA	--	--														

Notes: ft BTOC = feet below top of casing, all samp = Includes the sampling of VOCs and metals as seen in Appendix F of the semiannual groundwater reports, DCA = dichloroethane, cis = *cis*-1,2-dichloroethene, VC = vinyl chloride, As = arsenic

Orange shading indicates well was dry at the time of sampling, blank cells indicate that contaminates that were sampled were not detected above cleanup levels.

B.1.2 Groundwater Quality Data

Water quality data was reviewed from as far back as 1992 from the Semi-Annual (Second Half 2015) Groundwater Monitoring Report. Only the last five years of data on any particular well were analyzed using the Monitoring and Remediation Optimization System (MAROS) software. Trend analysis conducted via MAROS was done utilizing the Mann-Kendall statistical trends analysis. Only wells that have or had concentrations of COCs above cleanup levels within the review period were evaluated using this method. Table B-3 provides the results of the analysis.

Table B-3: Mann-Kendall analysis on wells with COCs above cleanup levels

Well Designation	Contaminant of Concern (COC)	Confidence in Trend	Concentration Trend
MW-43 (shallow well) (Dry – 1st half of 2014)	1,1-Dichloroethane	77.0%	Stable
	1,2-Dichloroethane	**96.0%**	**Increasing**
	cis-1,2-Dichloroethylene	100.0%	Decreasing
	Vinyl Chloride	75.3%	No Trend
MW-23 (intermediate well)	1,2-Dichloroethane	96.7%	Decreasing
MW-44s (shallow well) (Dry – 1st half of 2014)	1,2-Dichloroethane	100.0%	Decreasing
	cis-1,2Dichloroethylene	100.0%	Decreasing
	Vinyl Chloride	100.0%	Decreasing
	Arsenic	100.0%	Decreasing
MW-45 (shallow well) (Dry – 1st half of 2014)	1,2-Dichloroethane	100.0%	Decreasing
	Benzene	100.0%	Decreasing
	cis-1,2-Dichloroethylene	100.0%	Decreasing
	Vinyl Chloride	75.3%	No Trend
	Arsenic	**100.0%**	**Increasing**
MW-9 (shallow to intermediate well) (Dry – 1st half of 2015)	1,2-Dichloroethane	74.9%	No Trend
	cis-1,2-Dichloroethylene	47.3%	No Trend
PT-3A (shallow well) (Dry – 1st half of 2014)	*cis*-1,2-Dichloroethylene	65.7%	Stable
	Arsenic	72.8%	Stable

Well Designation	Contaminant of Concern (COC)	Confidence in Trend	Concentration Trend
MW-11IP (shallow to intermediate well) (Dry – 1st half of 2016)	Arsenic	54.8%	No Trend
MW-13 (shallow to intermediate well) Dry – 2nd half of 2015	**Arsenic**	**99.5%**	**Increasing**

A review of the analysis indicates that three wells (with one constituent in each of the wells) had increasing trends. Of the three increasing trends two are attributed to arsenic. Arsenic concentrations would not decrease due to the operation of the soil vapor extraction (SVE) system but would be expected to decline over time as concentrations of arsenic disperse and adsorb onto soil. However, arsenic may be elevated due to background concentrations in the soil which may desorb by geochemical changes in the groundwater and soil environment. Geochemical changes such as alkaline conditions can cause desorption of arsenate. Such a condition may have occurred during the use of calcium carbonate which was used to increase the pH of soil to above 5 to protect the Resource Conservation and Recovery Act (RCRA) cap after the 2006 OU-2 Record of Decision (ROD) Amendment. Another possible reason for the increasing trends of arsenic in the well may be related to the dissolution of iron oxide under the reducing conditions created by the natural biodegradation of the oily waste present on the Site. This biodegradation can be occurring due to the fact the DNAPL layer, previously located below the water table, and is now exposed to biodegradation due to the declining water table as discussed below.

The past FYR stated that: "The thickness of the vadose zone has steadily increased due to the declining water table resulting from groundwater withdraw by the City of Fresno. A significant decrease in the dissolved VOC [volatile organic compound] concentrations coincided with the more recent decline in the water table, indicating the source of the dissolved VOCs is likely exposed in the vadose zone. However, based on current groundwater conditions, the DNAPL [dense non-aqueous phase liquid] layer is not affecting the remedy and the SVE treatment system in removing mass VOCs in this location." The DNAPL layer was noted to be in the deepest part of the vadose zone; previously, the DNAPL layer was below the water table in a residual and immobile state but with the drop of the water table the DNAPL is now in the vadose zone. Given this information, the ongoing decline in groundwater elevations, and the results of the trend analysis indicating that many of the wells with VOCs have shown a 100% confidence of decreasing, EPA and the U.S. Army Corps of Engineers (USACE) have assumed that the overall trend of concentrations above cleanup levels are declining and will meet the site cleanup goals in the future as required in the 1989 ROD.

Iron and manganese were analyzed utilizing existing plume maps. Plume maps of iron and manganese from 2002 and 2013 (Figure B-30 through B-33) indicate that plumes have shrunk on-site and that new sources off-site may have emerged since 2002 with the emergence of plumes at nearby properties (primarily West Coast Waster and Producers Cotton Oil Company) that are not considered part of the Site. Elevated dissolved iron and manganese concentrations on-site are also likely due to increased biodegradation activity that is reducing compounds with iron and manganese into more soluble forms. Declines would indicate that dissolved iron and manganese have begun to precipitate on-site.

Based on a review of groundwater contour maps from the Semi-Annual (Second Half 2015) Groundwater Monitoring Report, only iron and manganese are shown as having a plume with detections above cleanup levels. The lack of detections above cleanup levels for the other COCs is primarily due to the fact that groundwater elevations in the majority of the wells that have been impacted by past activities have declined to levels at which sampling is no longer possible. For this reason, plume maps from the Semi-Annual (First Half 2013) Groundwater Monitoring Report were utilized as a means to approximate where COC concentrations would appear above cleanup levels currently.

Data from the sampling event in the first half of 2013 indicate that there were no visible plumes with detections above cleanup levels for benzene; 1,1-Dichloroethane (DCA); 1,1-Dichloroethene (DCE); *cis*-1,2-DCE; *trans*-1,2-DCE; Trichloroethylene (TCE); or vinyl chloride (Figure B-13, Figure B-15, Figure B-19, Figure B-21, Figure B-23, and Figure B-25, respectively). However, there were detections above cleanup levels for 1,2-DCA and dissolved arsenic (Figure B-17 and Figure B-29, respectively). The size of the 1,2-DCA and arsenic plumes are estimated to cover no more than one half acre and one tenth of an acre, respectively. Both plumes are located along the northern border of the Purity Oil Site property line.

Because so many wells have recently gone dry, a comparison between the 2002 contour maps and the 2013 contour maps was completed for this FYR. Based on contours generated from detections above cleanup levels, the plumes have shrunk significantly over that 11-year period (Figures B-12 through B-29).

Draft data from the 2016 first-half sampling event was also reviewed to identify any upcoming issues. No issues regarding contaminant concentrations were identified. Shallow wells (which had exceedances) have gone dry and deeper wells have not shown any COC concentration increases. The above analysis and the fact that the majority of COCs that are above cleanup levels have decreasing or stable trends indicates that the various plumes at the Purity Oil Site are shrinking or are not expanding; primarily VOCs.

B.1.2 Groundwater Quality Data

Water quality data was reviewed from as far back as 1992 from the Semi-Annual (Second Half 2015) Groundwater Monitoring Report. Only the last five years of data on any particular well were analyzed using the Monitoring and Remediation Optimization System (MAROS) software. Trend analysis conducted via MAROS was done utilizing the Mann-Kendall statistical trends analysis. Only wells that have or had concentrations of COCs above cleanup levels within the review period were evaluated using this method. Table B-3 provides the results of the analysis.

Table B-The remedy of monitored natural attenuation (MNA) for groundwater with SVE for soil as a means to protect groundwater (Section 0) is functioning as intended. Since there is no exposure pathway to groundwater, the increasing trend seen in the three wells noted in Section 0 does not impact the protectiveness of the remedy in the short-term.

B.2 Soil Vapor Extraction (SVE)

The following documents were reviewed to ascertain the condition of the soil vapor environment at the Purity Oil Site:

- Soil Vapor Extraction Rebound Testing Work Plan Purity Oil Sales Superfund Site
- Soil Vapor Extraction Rebound Testing Memo
- Quarterly Operations Summary Report Fourth Quarter 2014 Soil Vapor Extraction System
- Quarterly Operations Summary Report First Quarter 2015 Soil Vapor Extraction System
- Quarterly Operations Summary Report Second Quarter 2015 Soil Vapor Extraction System

Influent concentration data within the SVE system was reviewed for this FYR. Sampling was generally conducted on a monthly basis from sampling ports located ahead of the granular activated carbon (GAC) treatment tanks. The location of the SVE wells is provided as Figure B-4. The graphs of concentrations over time generated from data obtained through sampling can be seen in Figure B-5 through Figure B-11. Only COCs that were both VOCs and located in groundwater on-site were reviewed.

The conceptual site model for the Purity Oil Site involves *cis*-1,2-DCE generation in soil vapor through anaerobic degradation of TCE in the soil, and vertical migration of the *cis*-1,2-DCE, resulting in groundwater impacted by *cis*-1,2-DCE. The objectives of the SVE system were to create conditions in the subsurface that would impede this process. This was to be achieved through removal of the *cis*-1,2-DCE in the soil vapor, removal of conditions suitable for anaerobic degradation (i.e., increase oxygen content in the subsurface), or both. An evaluation of the graphs (Figure B-5 through Figure B-11) indicate an asymptotic trend for all the VOC COCs for groundwater indicating that the SVE system has removed a significant amount of VOCs from the soil.

The original waste excavated as described in the 1992 ROD is assumed not to be captured by the SVE system. Instead the SVE is addressing the vapors of the contamination that had leached from the waste. A possibility of determining if significant waste oils were not removed from the excavation could be discovered during the rebound test which is being conducted to evaluate the successful completion of the SVE remedy. The rebound test is further discussed below.

Due to the significant decreases in concentrations of COCs in the soil vapor, Leidos, a site contractor, proposed turning off the SVE remediation system and commencing rebound testing for the following reasons:

- Soil vapor concentrations of *cis*-1,2-DCE and TCE from all extraction wells impacted with chlorinated VOCs (SVE-1a, SVE-2, SVE-4, SVE-5, and SVE-6) all reached asymptotic levels after extended periods of extraction (minimum of 14 months for each well).
- *cis*-1,2-DCE concentrations in key vapor monitoring points have decreased dramatically in most of the sampling intervals.

- Oxygen levels in the vapor monitoring points have increased substantially relative to their concentrations before system startup. Oxygen concentrations in the vapor monitoring point increased from 1 to 2 percent to around 15 to 18 percent.

To conduct the rebound study, the SVE system was shutdown on December 13, 2015. In October 2016, EPA will determine whether to restart SVE system operations or to continue the rebound study.

B.3 Cap

The following documents were reviewed to ascertain the condition of the soil and cap at the Purity Oil Site:

- 2012 Annual OU-2 Cap Operation and Maintenance Report for Purity Oil Sales Superfund Site, Malaga, California
- 2014 Annual OU-2 Engineered Cap Operations and Maintenance Report for Purity Oil Sales Superfund Site, Malaga, California

In 2012, a Cap Settlement Survey was conducted at Purity Oil Sales and the following was noted:

The settlement markers were surveyed on May 8, 2012, by a California licensed surveyor (ESP Surveying Inc., formerly Espinosa Surveying). The survey stakes and settlement markers were examined during each semi-annual Site inspection and during the survey event, and were all observed to be in good condition. The results of the survey indicated that the engineered cap has not exhibited any settlement since completion. Per Stantec's OU-2 Final Operation and Maintenance Manual, dated March 30, 2009, surveying of the settlement markers would be completed annually for the first five years and then every five years after that. Given that the first survey was completed in 2008, the 2012 survey was the fifth annual survey to be completed. The next survey is scheduled in 2017.

The 2015 Annual Cap Operation and Maintenance Report was completed by Stantec on January 29, 2016. No significant issues were noted in the report.

Gopher burrows were observed during the periodic inspection through the year of 2014. Pest management activities were conducted monthly throughout the year and twice in the months of March, April, and May to control infestation and damage to the cap. No gopher burrows were noted during the 2016 FYR inspection as seen in the Appendix H Site Inspection Trip Report and Photos.

B.4 Effluent water

The effluent, originating from investigation derived waste, groundwater sampling, and stormwater, from the Site is sampled as required for National Pollutant Discharge Elimination System (NPDES) permitting. The effluent is discharged to the Malaga County Water District which has been occurring since April 21, 2009 under the Malaga County Water District Non-Residential Wastewater Permit. Discharge monitoring reports are provided to the EPA quarterly. The latest Discharge Monitoring Report from April 29, 2016 indicated that no exceedances occurred. The discharge monitoring report is certified by the on-site O&M contractor Stantec. Analysis of the contaminants in the effluent include: oil and grease, phenols, benzene,

cyanide, aluminum, arsenic, barium, beryllium, boron, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, and zinc.

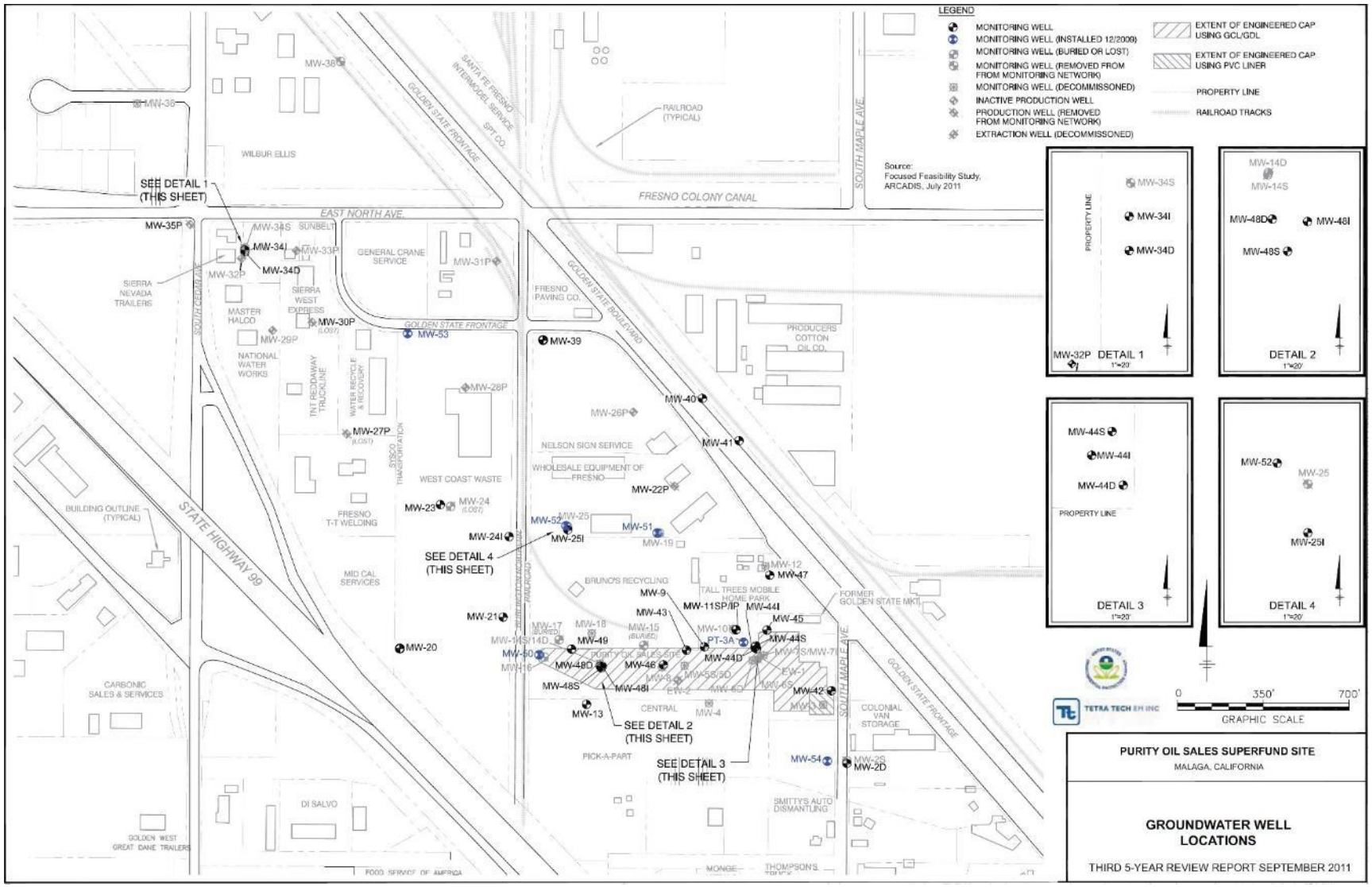


Figure B-1: Well location map

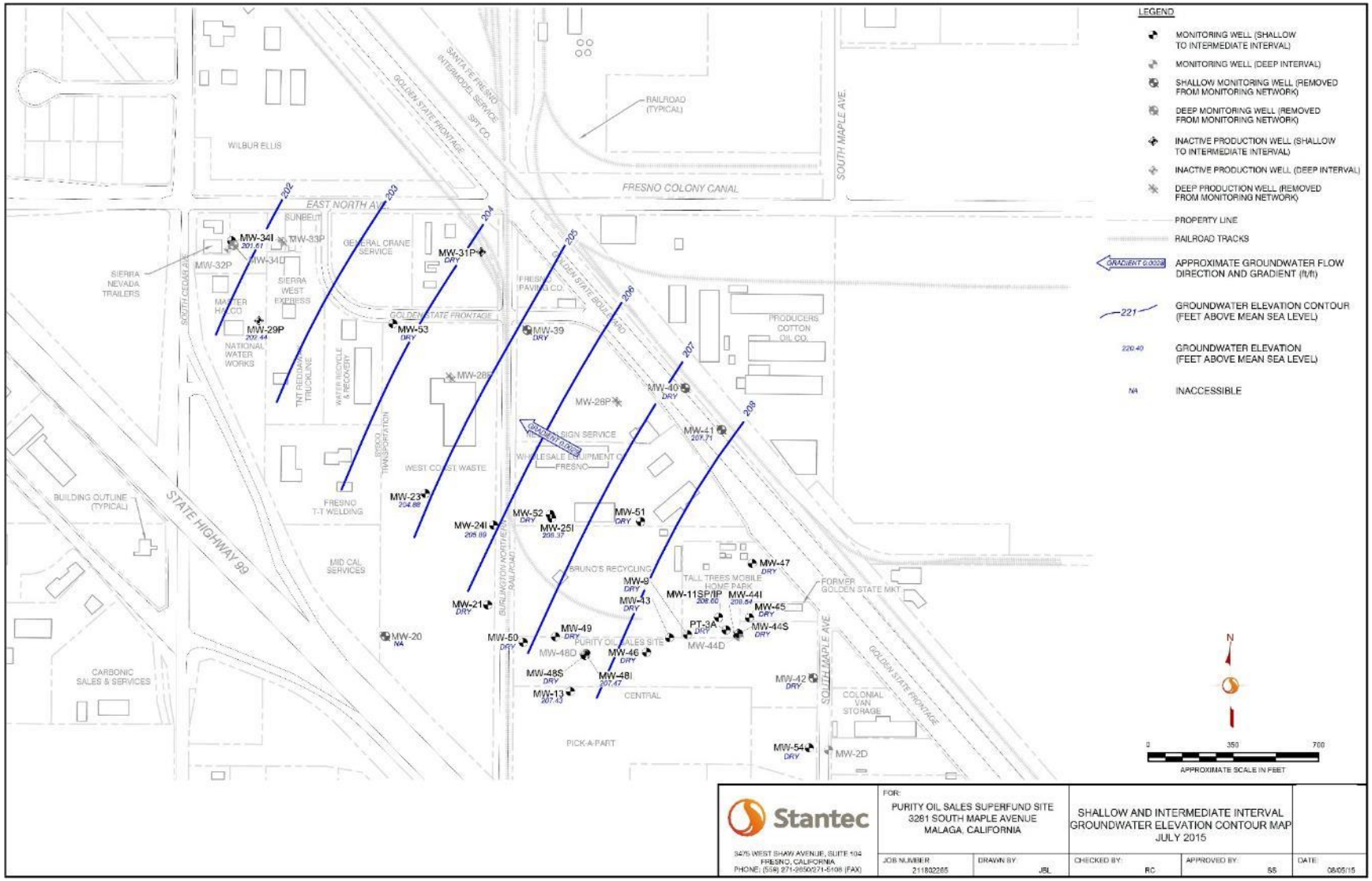
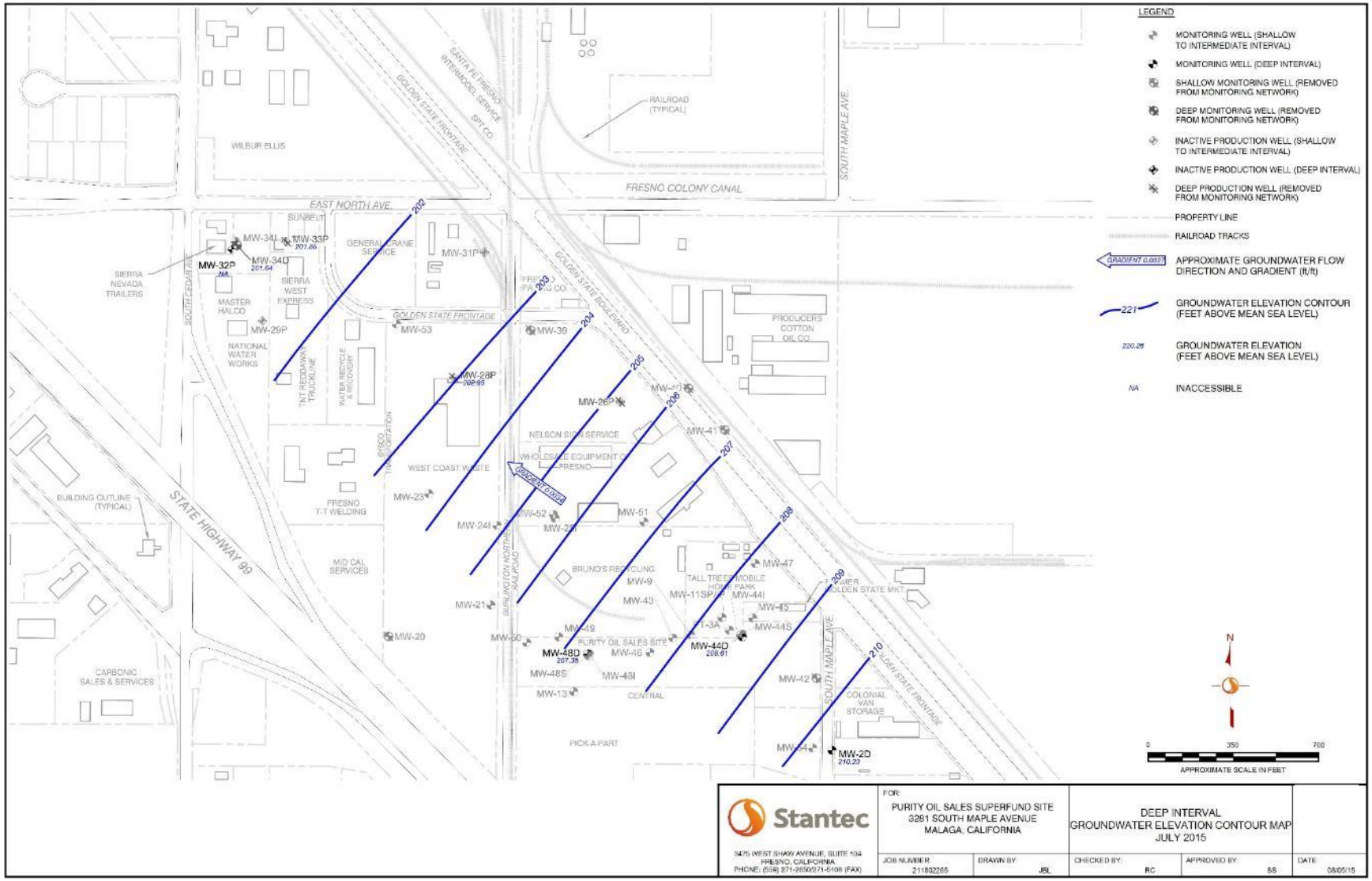


Figure B-2: Groundwater elevation contour map of the shallow and intermediate interval (July 2015)



Stantec
3475 WEST SHAW AVENUE, SUITE 104
FRESNO, CALIFORNIA
PHONE: (559) 271-2650/271-5108 (FAX)

FOR:
PURITY OIL SALES SUPERFUND SITE
3281 SOUTH MAPLE AVENUE
MALAGA, CALIFORNIA

DEEP INTERVAL
GROUNDWATER ELEVATION CONTOUR MAP
JULY 2015

JOB NUMBER	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
211802265	JBL	RC	SS	08/05/15

Figure B-3: Groundwater elevation contour map of the deep interval (July 2015)

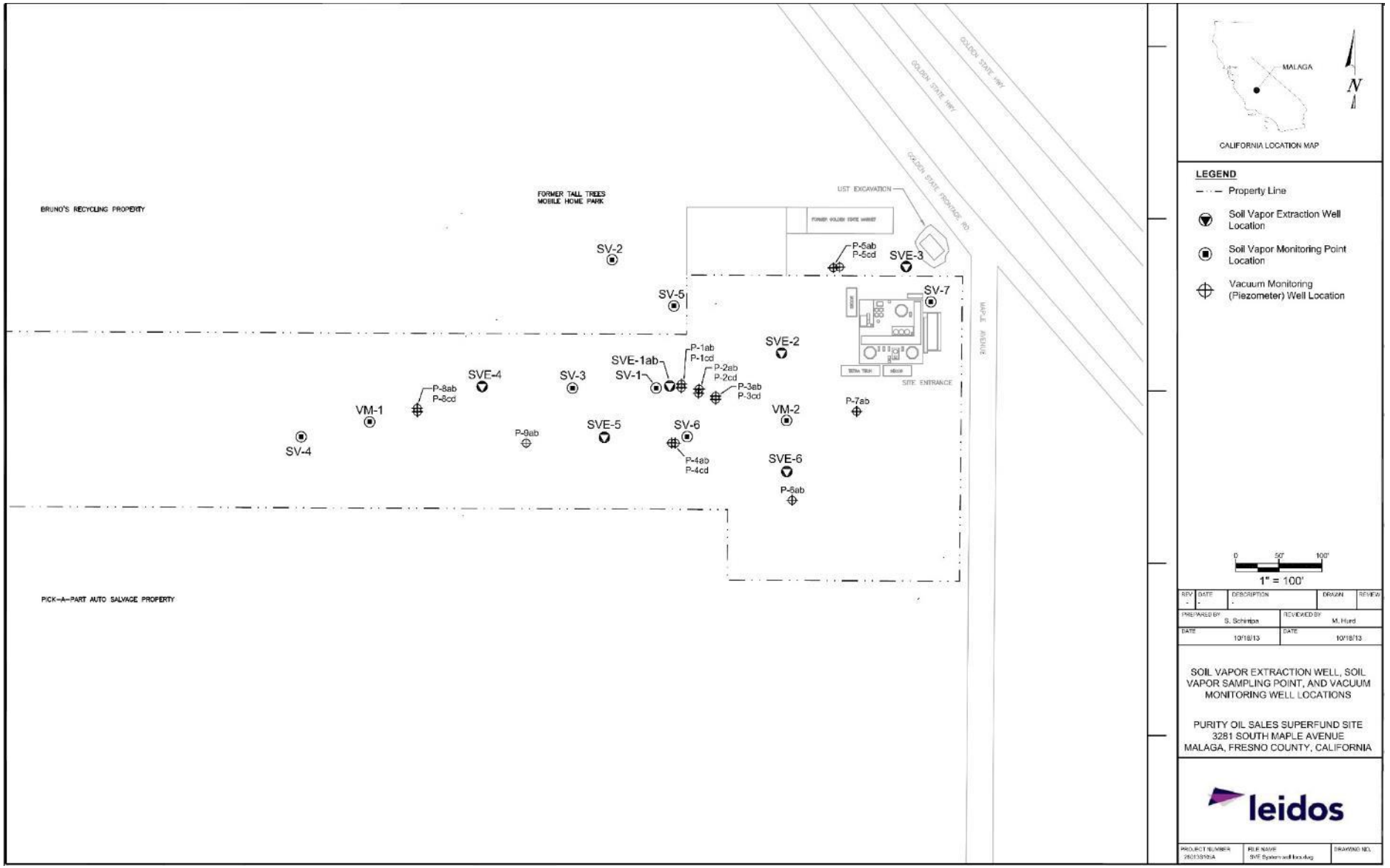


Figure B-4: Locations of SVE and soil vapor monitoring wells

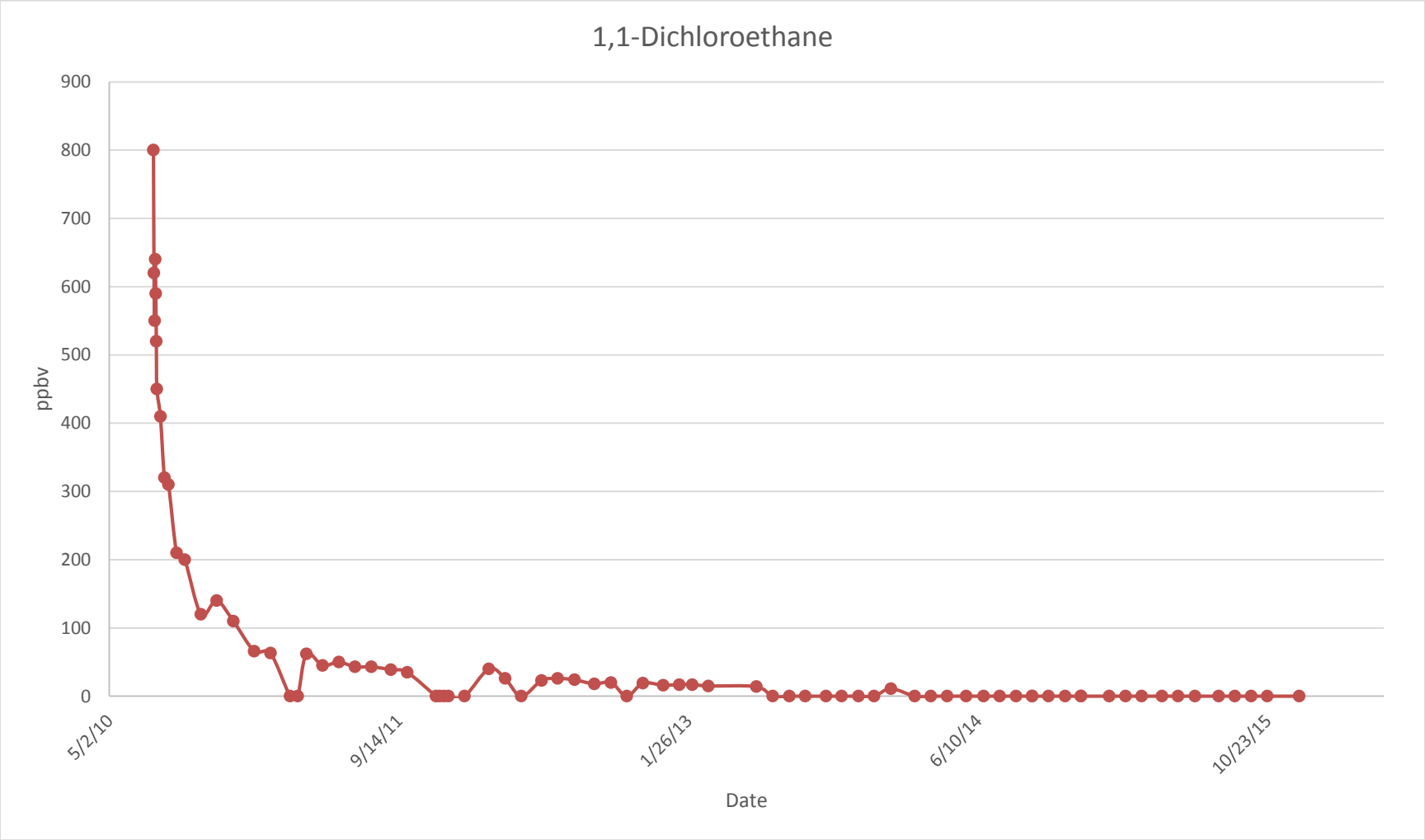


Figure B-5: Influent soil vapor concentrations of 1,1-dichloroethane prior to GAC treatment

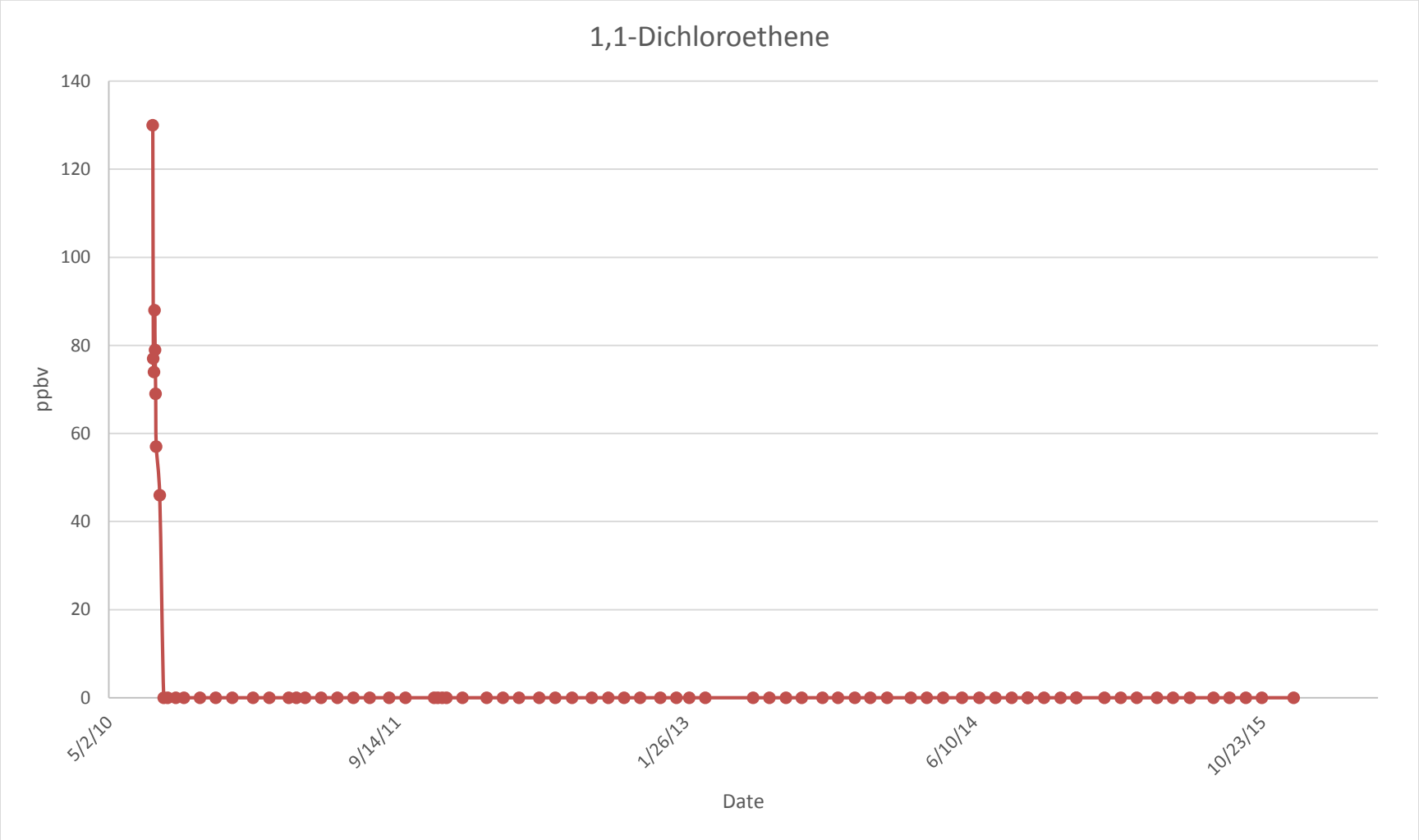


Figure B-6: Influent soil vapor concentrations of 1,1-dichloroethene prior to GAC treatment

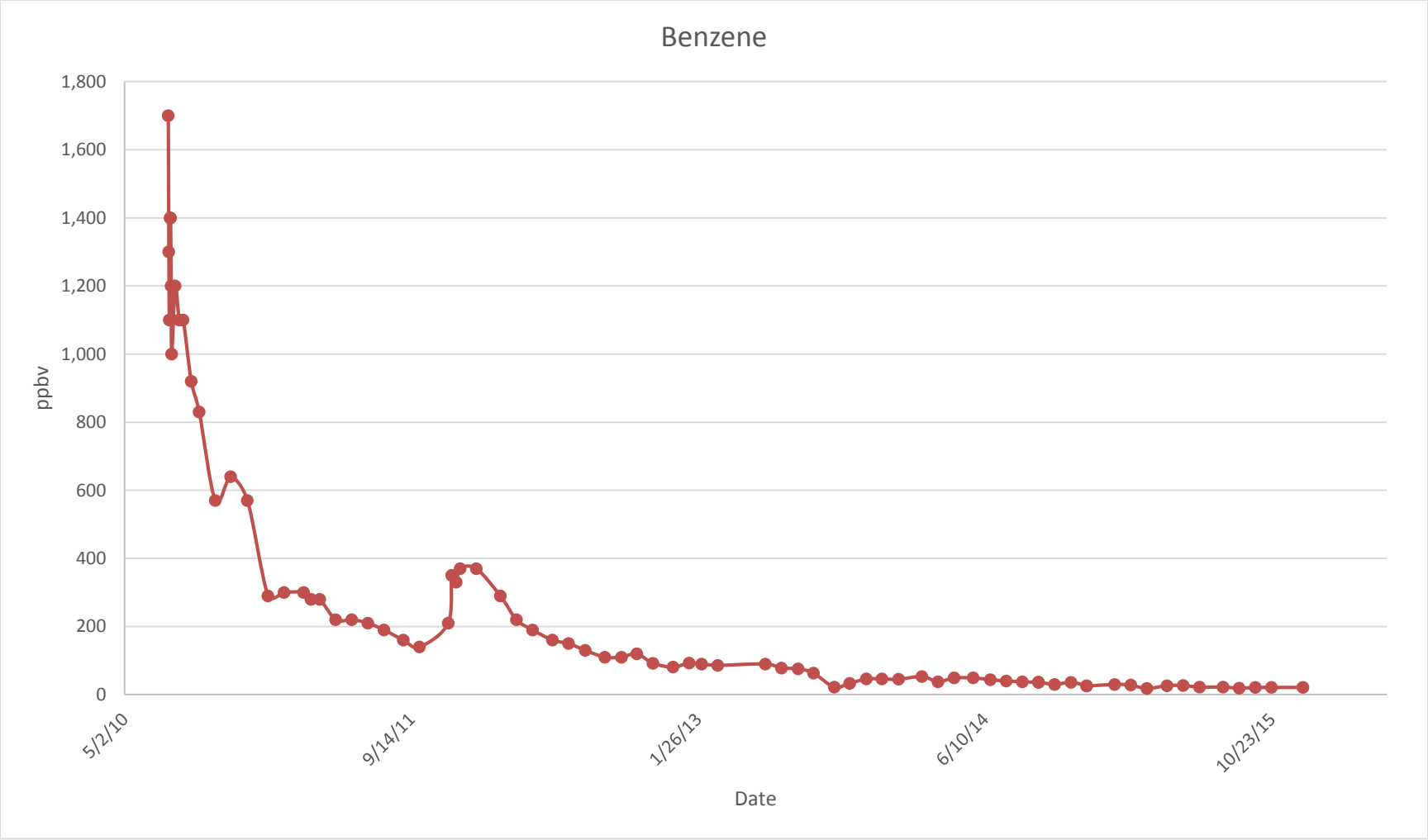


Figure B-7: Influent soil vapor concentrations of benzene prior to GAC treatment

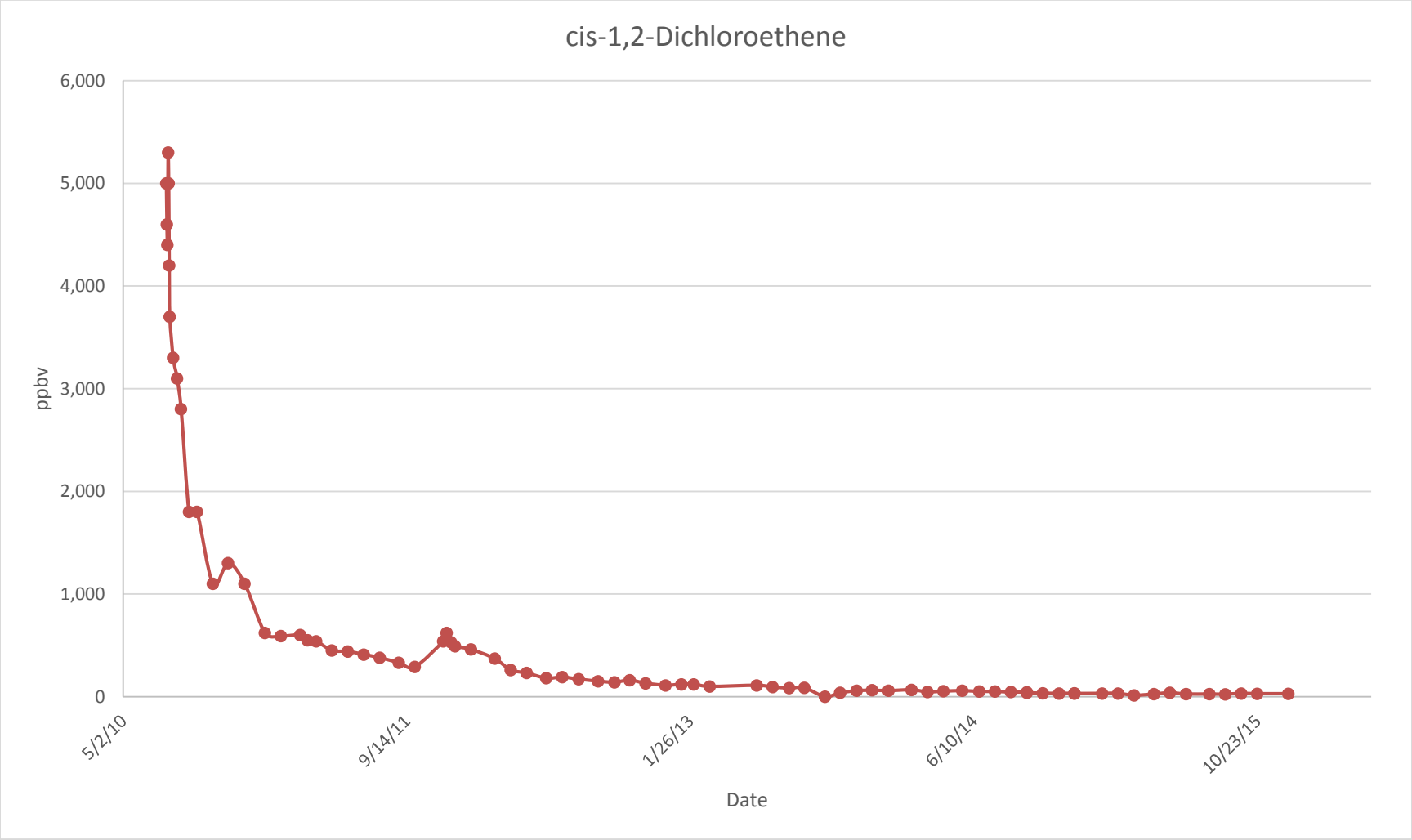


Figure B-8: Influent soil vapor concentrations of cis-1,2-dichloroethene prior to GAC treatment

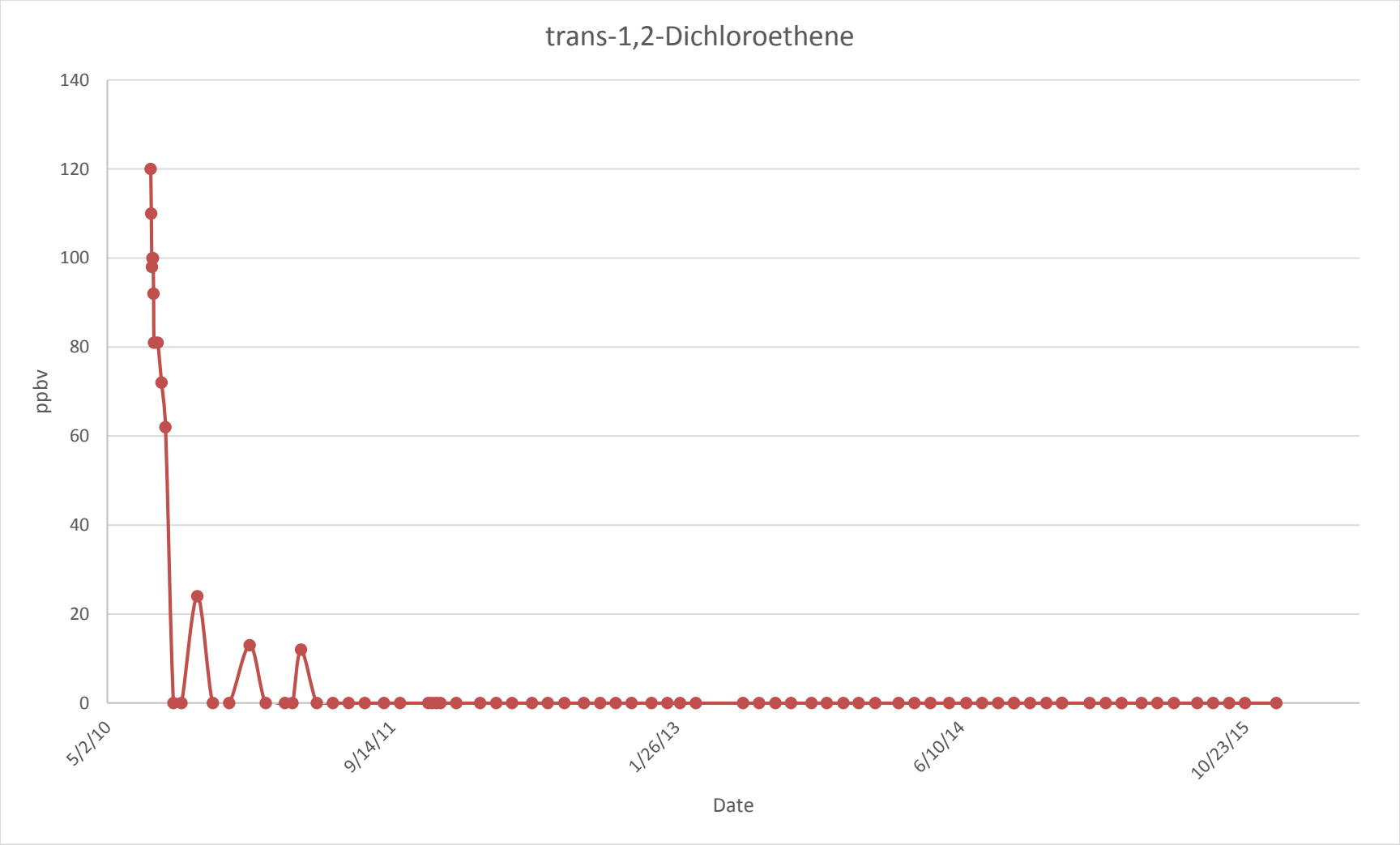


Figure B-9: Influent soil vapor concentrations of trans-1,2-dichloroethene prior to GAC treatment

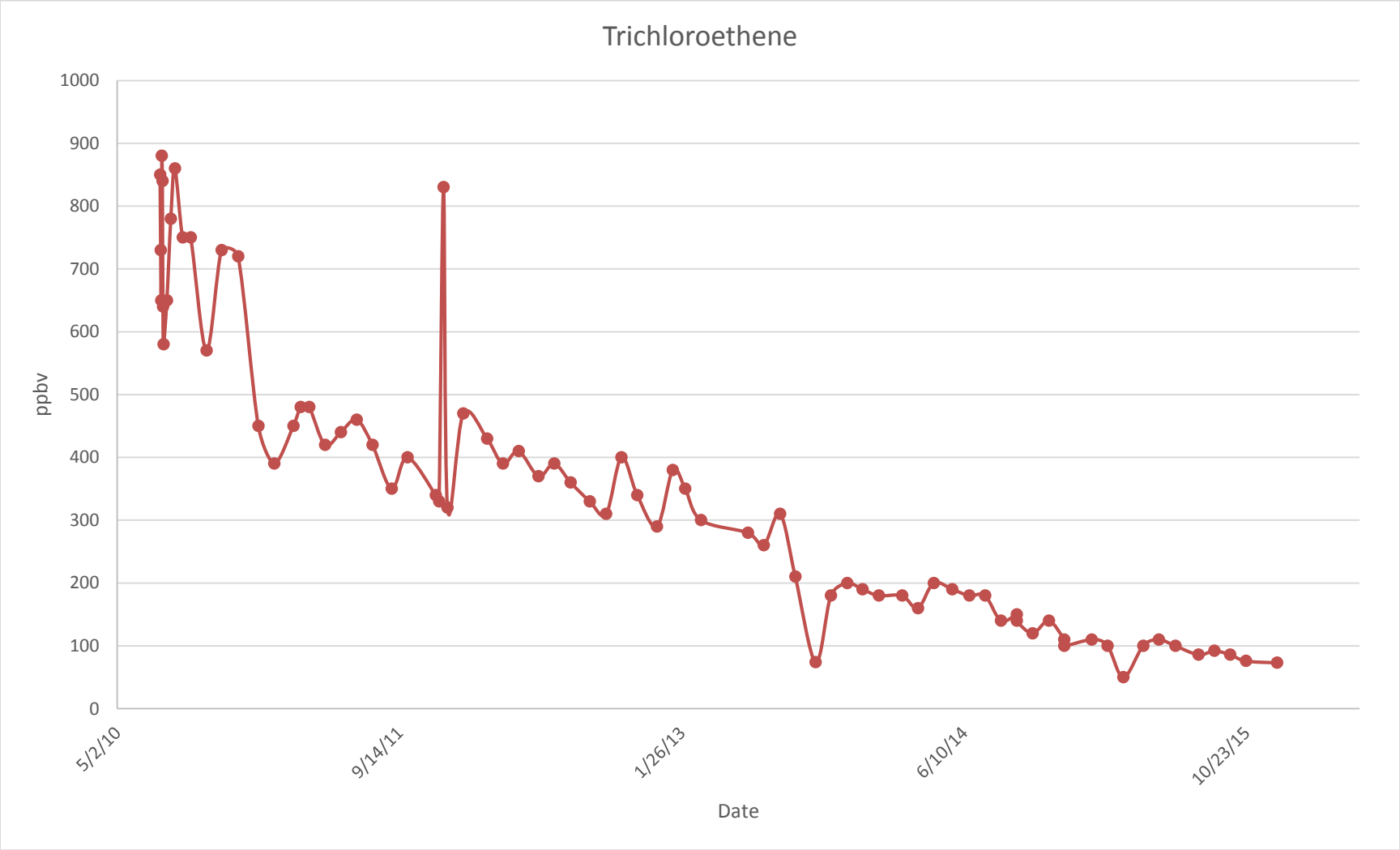


Figure B-10: Influent soil vapor concentrations of trichloroethene prior to GAC treatment

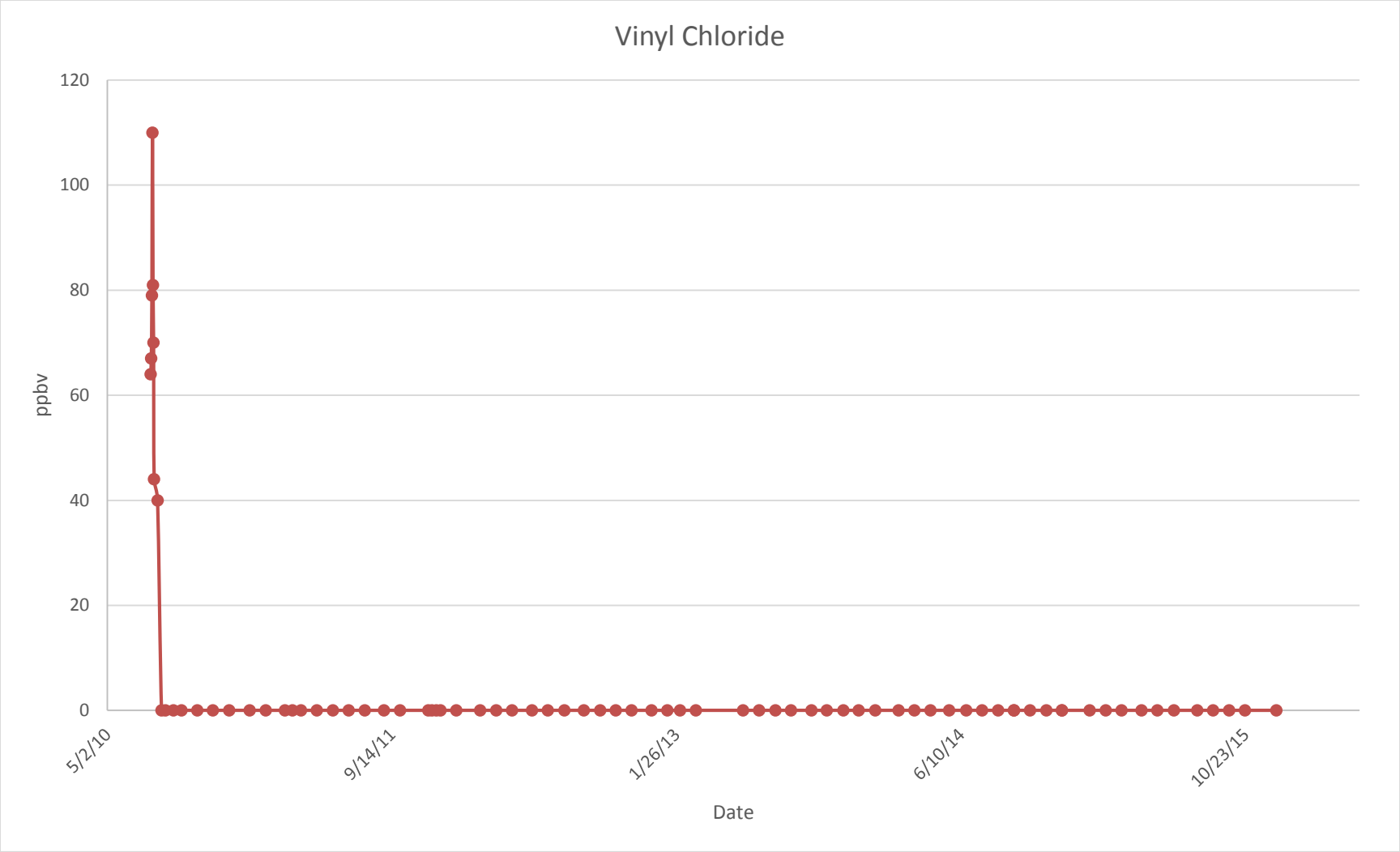


Figure B-11: Influent soil vapor concentrations of vinyl chloride prior to GAC treatment

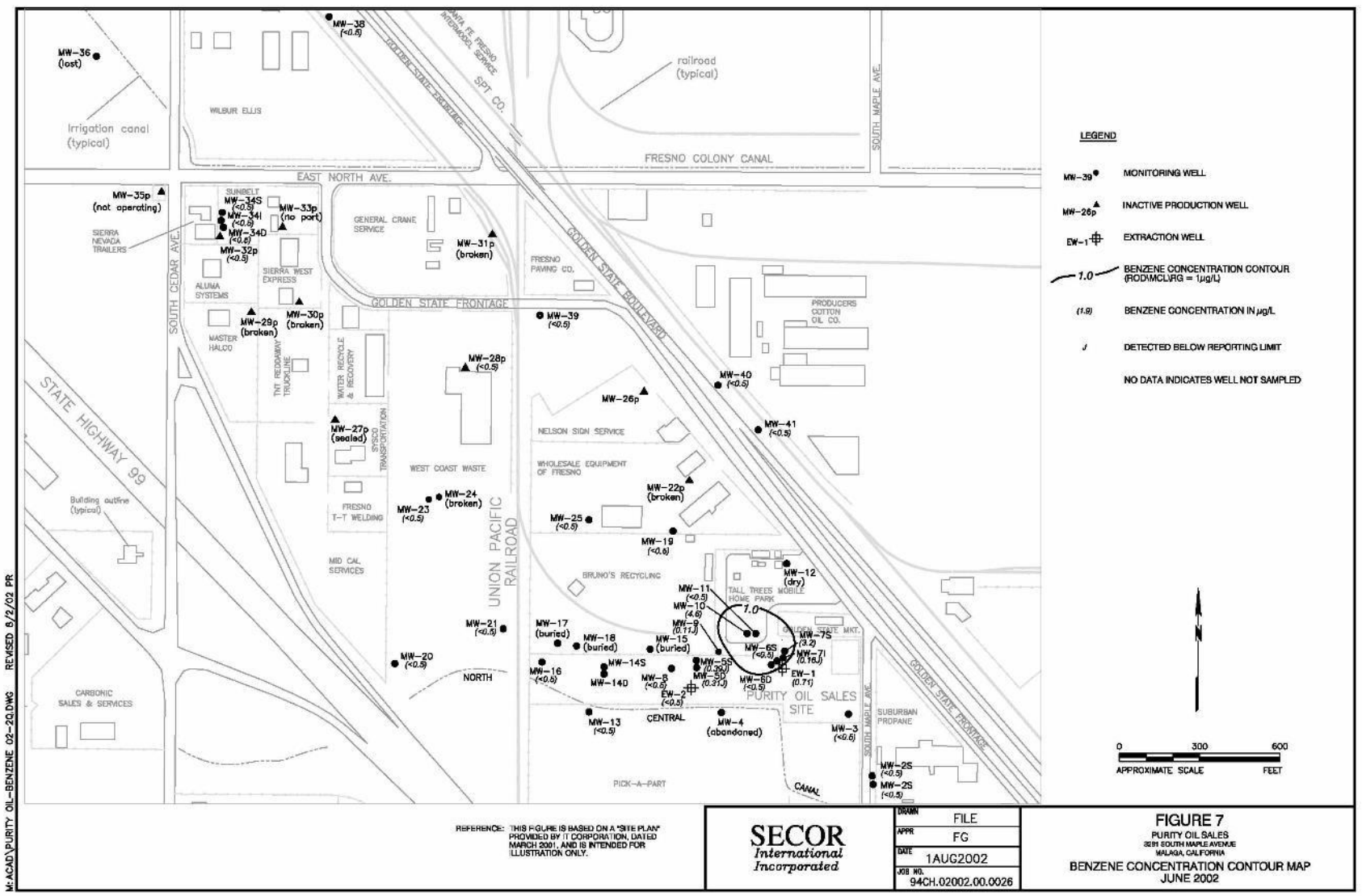


Figure B-12: Contour map of benzene (second quarter 2002)

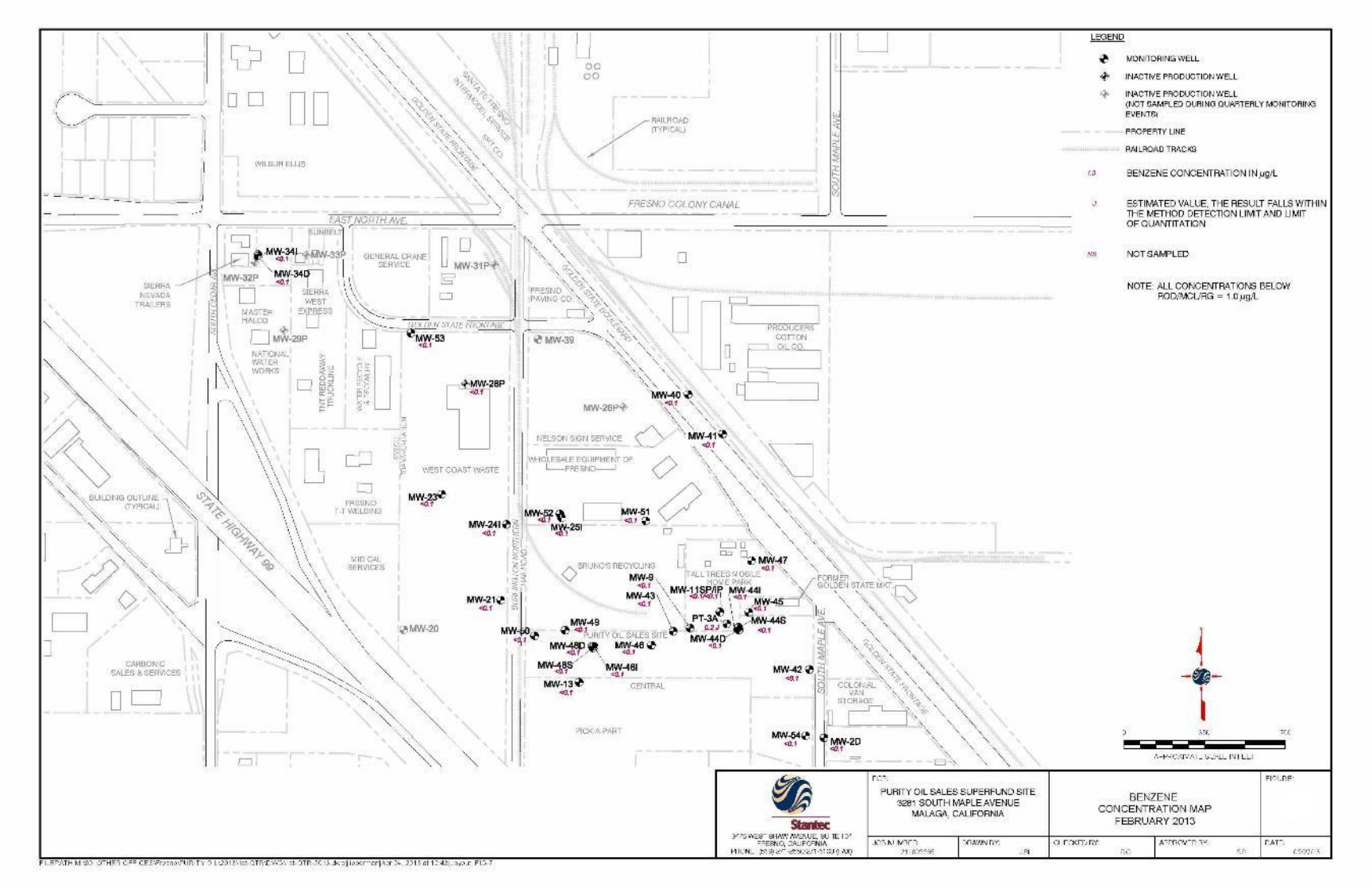


Figure B-13: Contour map of benzene (first half 2013)

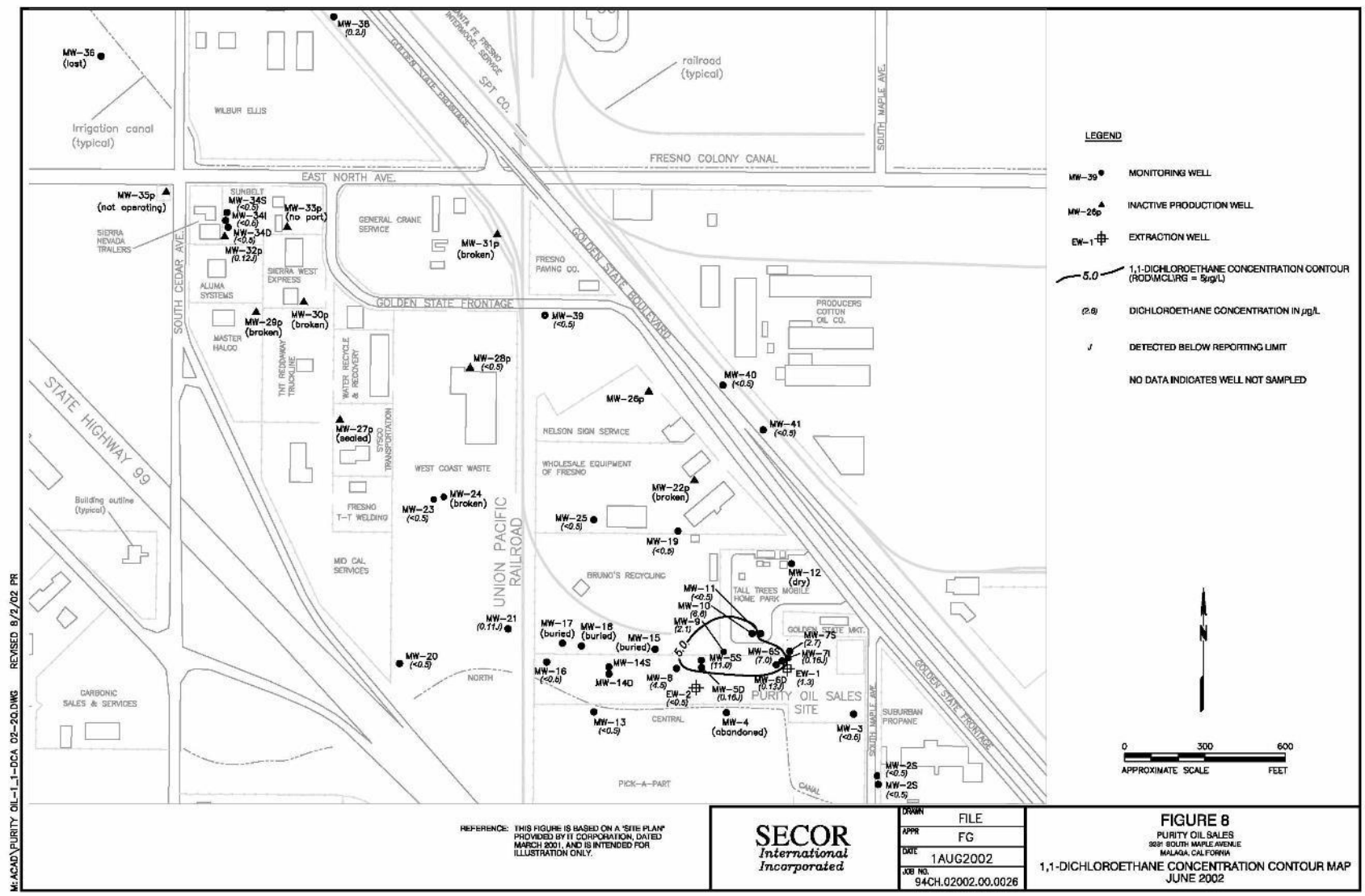


Figure B-14: Contour map of 1,1-dichloroethane (second quarter 2002)

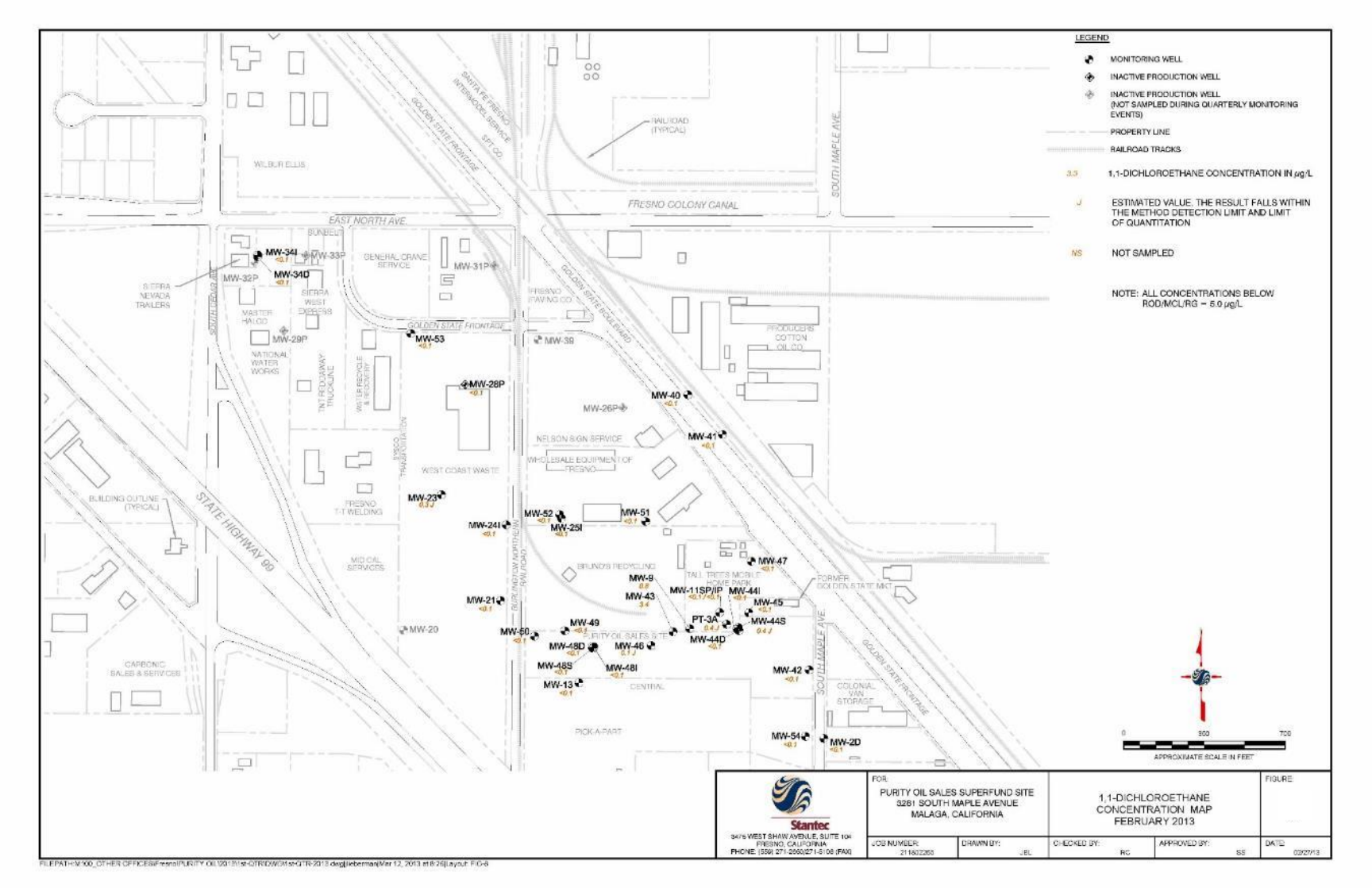


Figure B-15: Contour map of 1,1-dichloroethane (first half 2013)

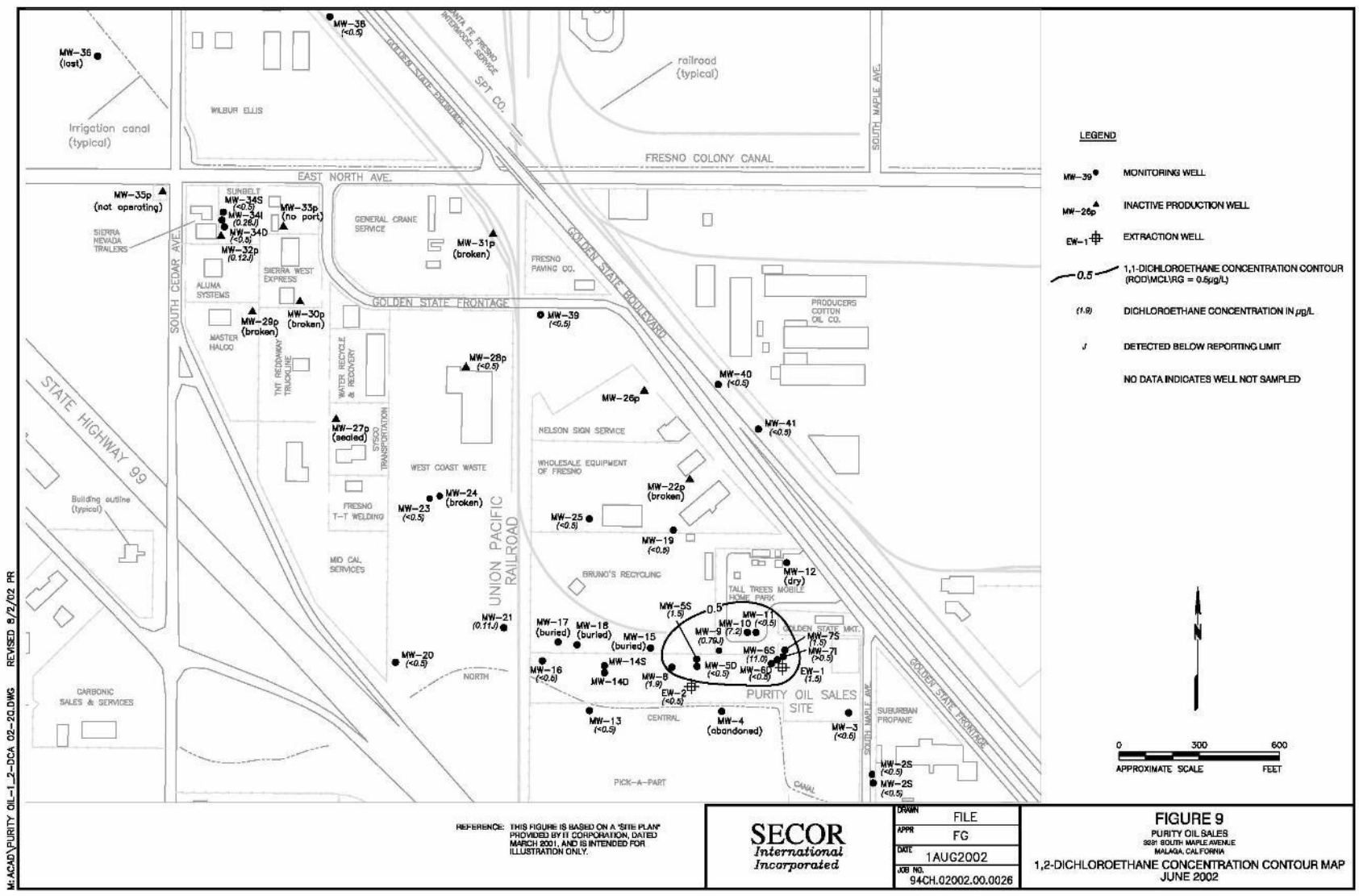


Figure B-16: Contour map of 1,2-dichloroethane (second quarter 2002)

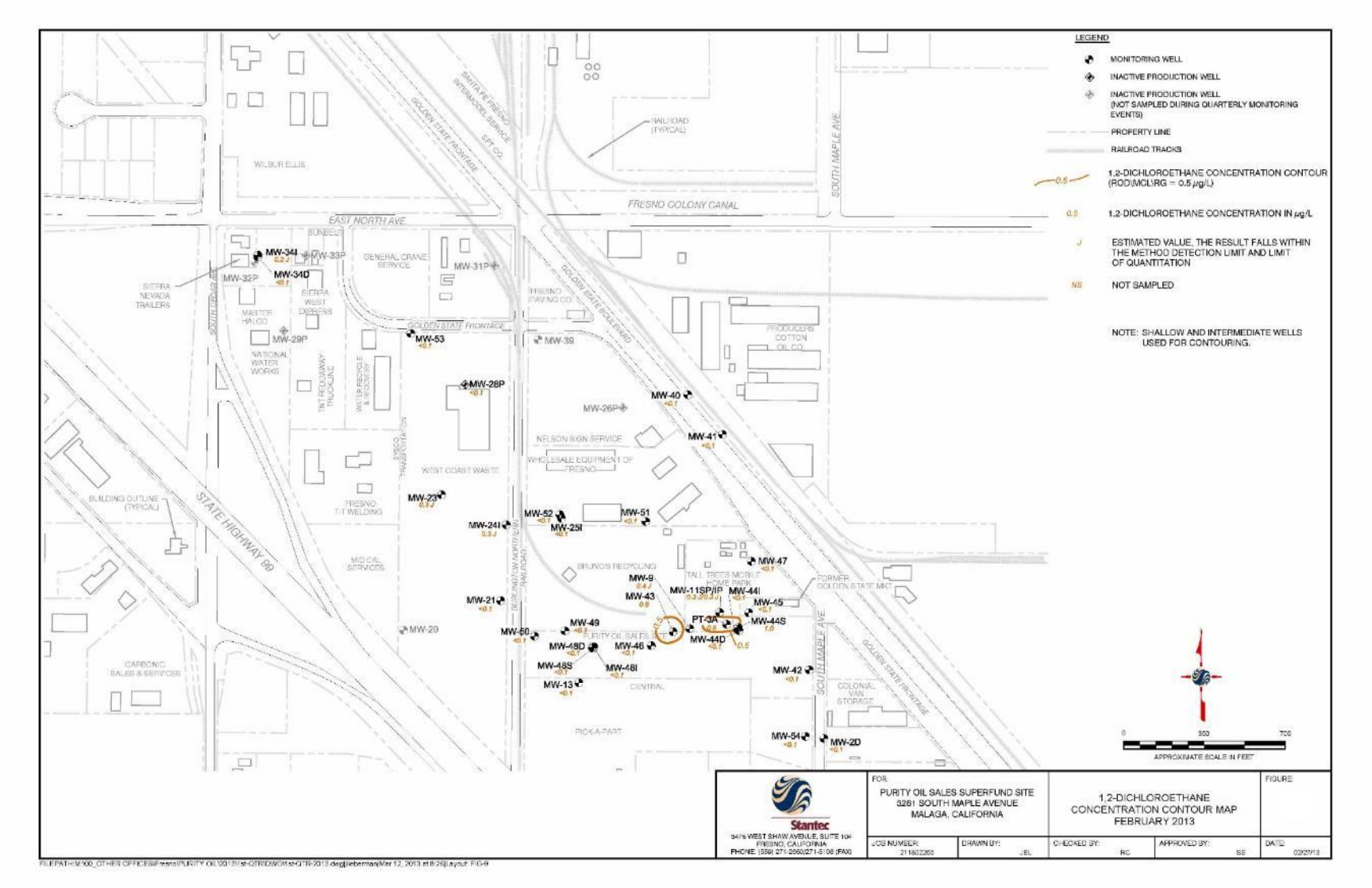


Figure B-17: Contour map of 1,2-dichloroethane (first half 2013)

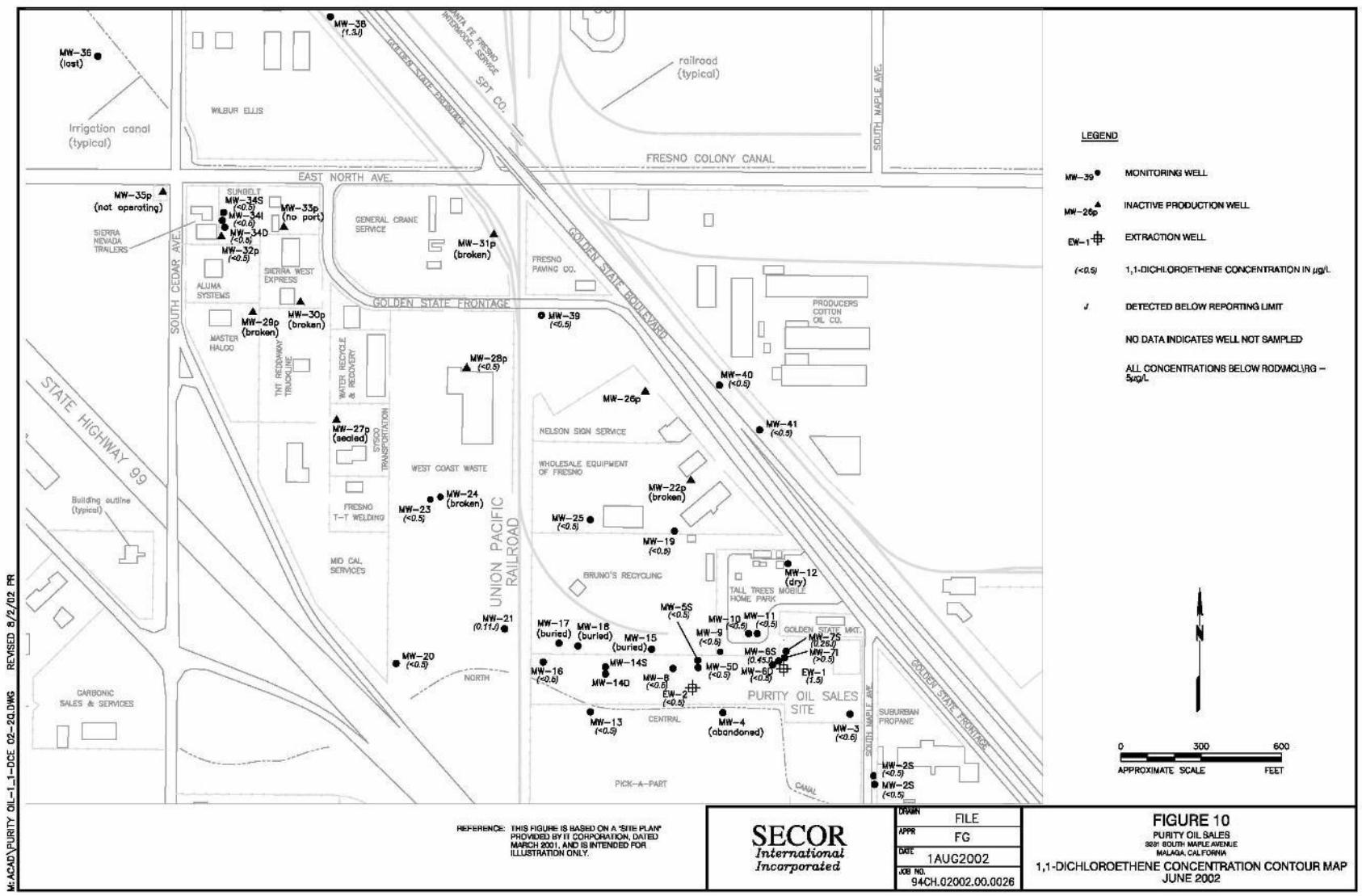


Figure B-18: Contour map of 1,1-dichloroethene (second quarter 2002)

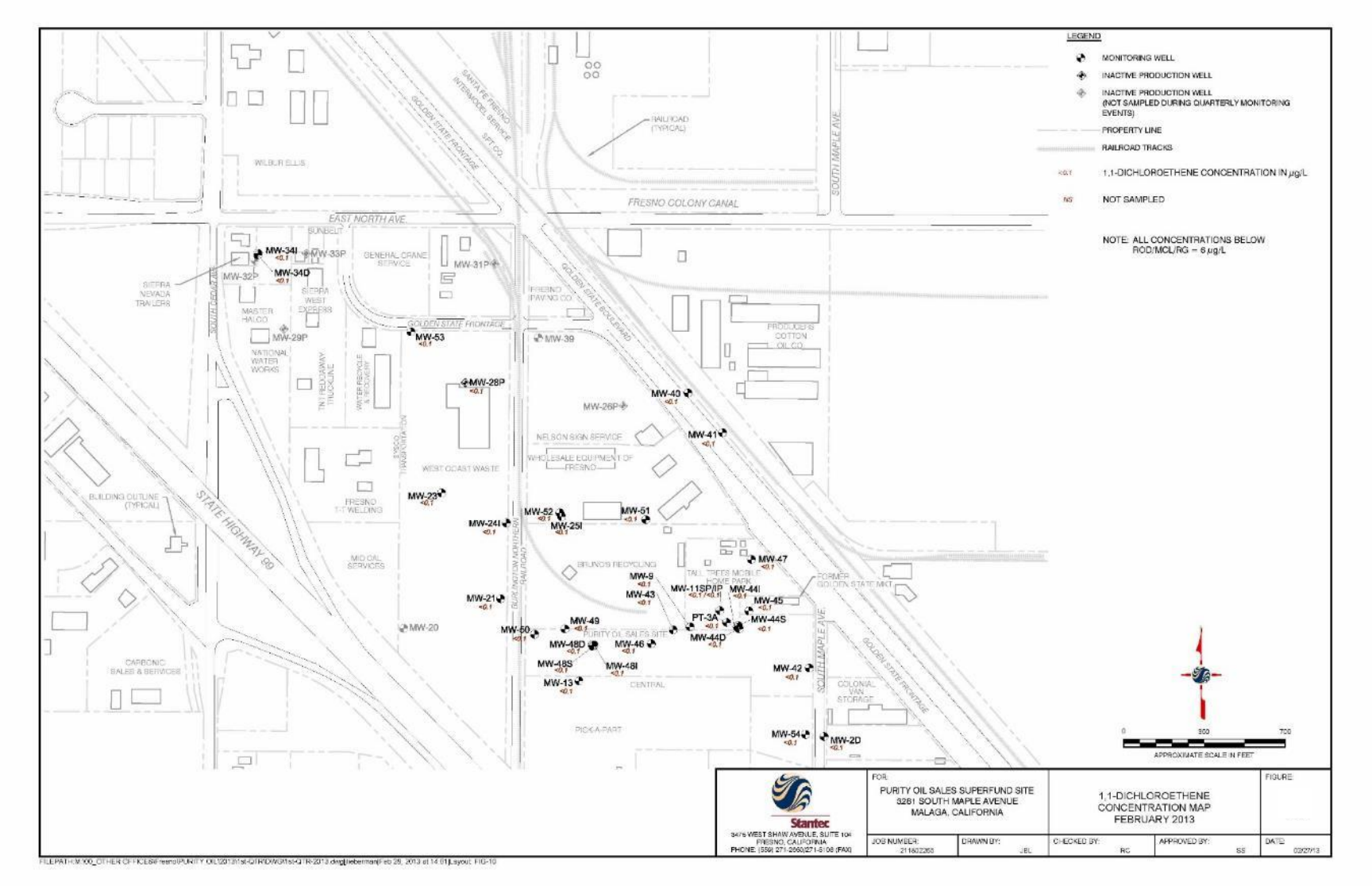


Figure B-19: Contour map of 1,1-dichloroethene (first half 2013)

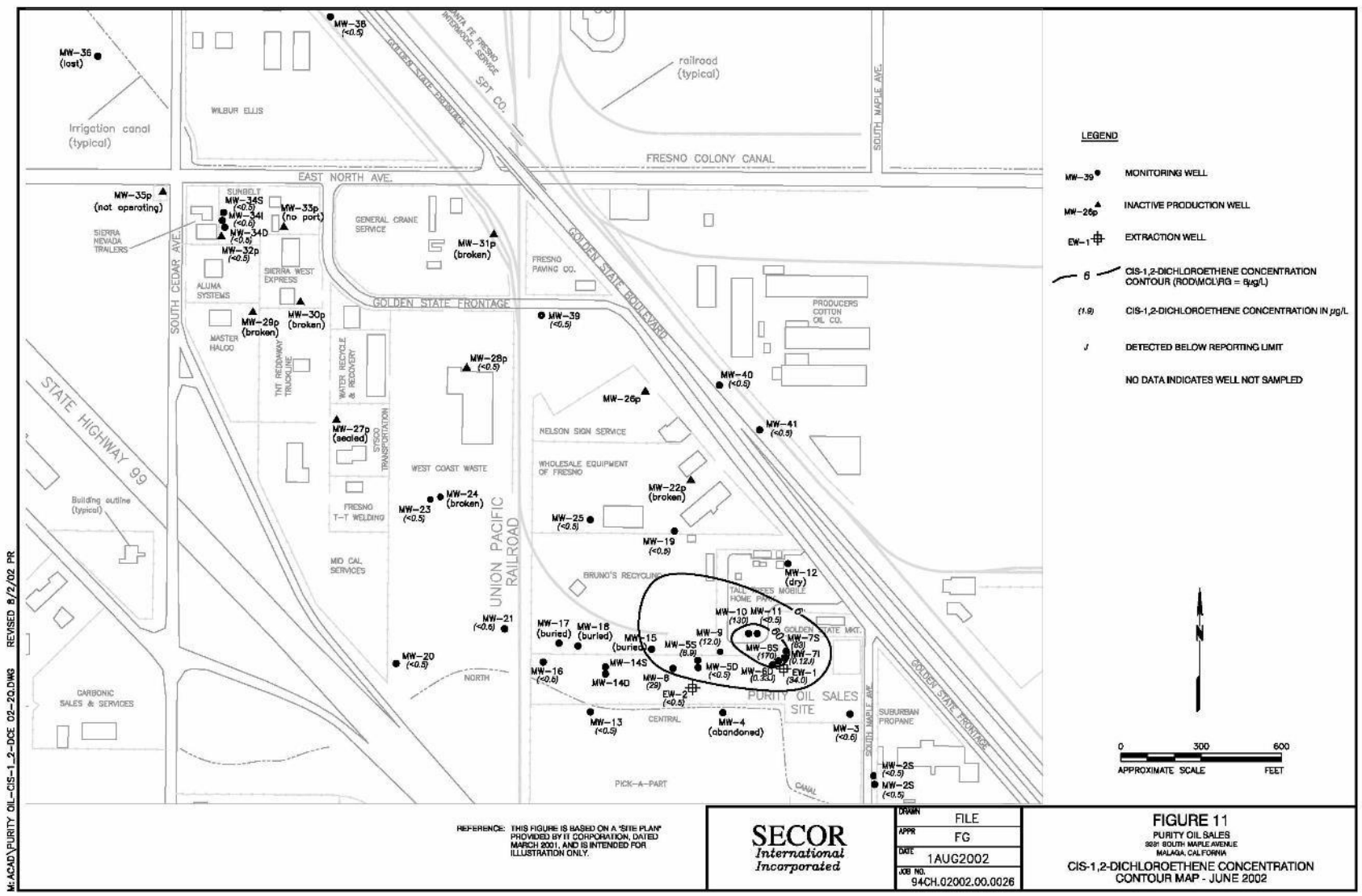


Figure B-20: Contour map of cis-1,2-dichloroethene (second quarter 2002)

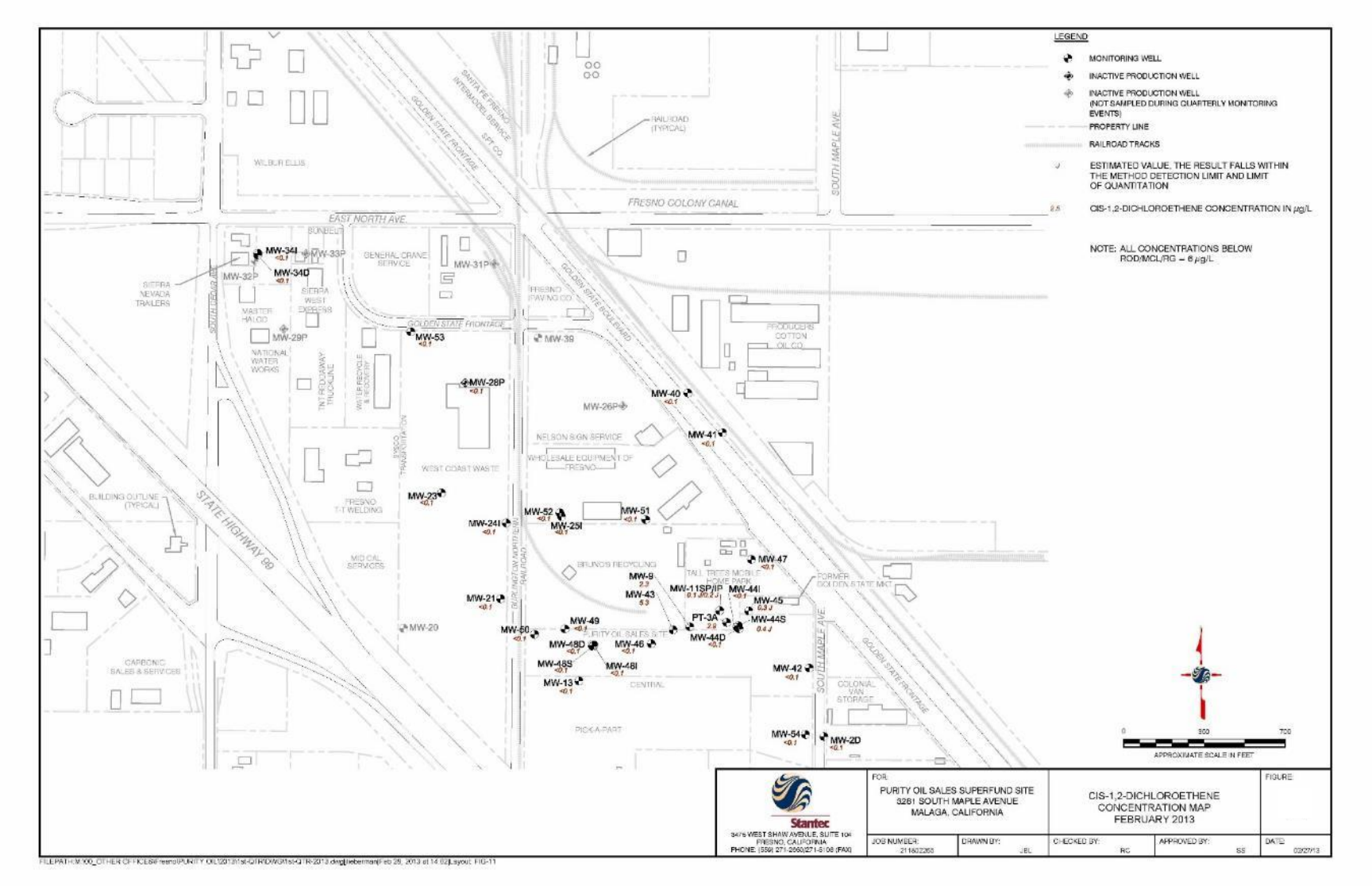


Figure B-21: Contour map of cis-1,2-dichloroethene (first half 2013)

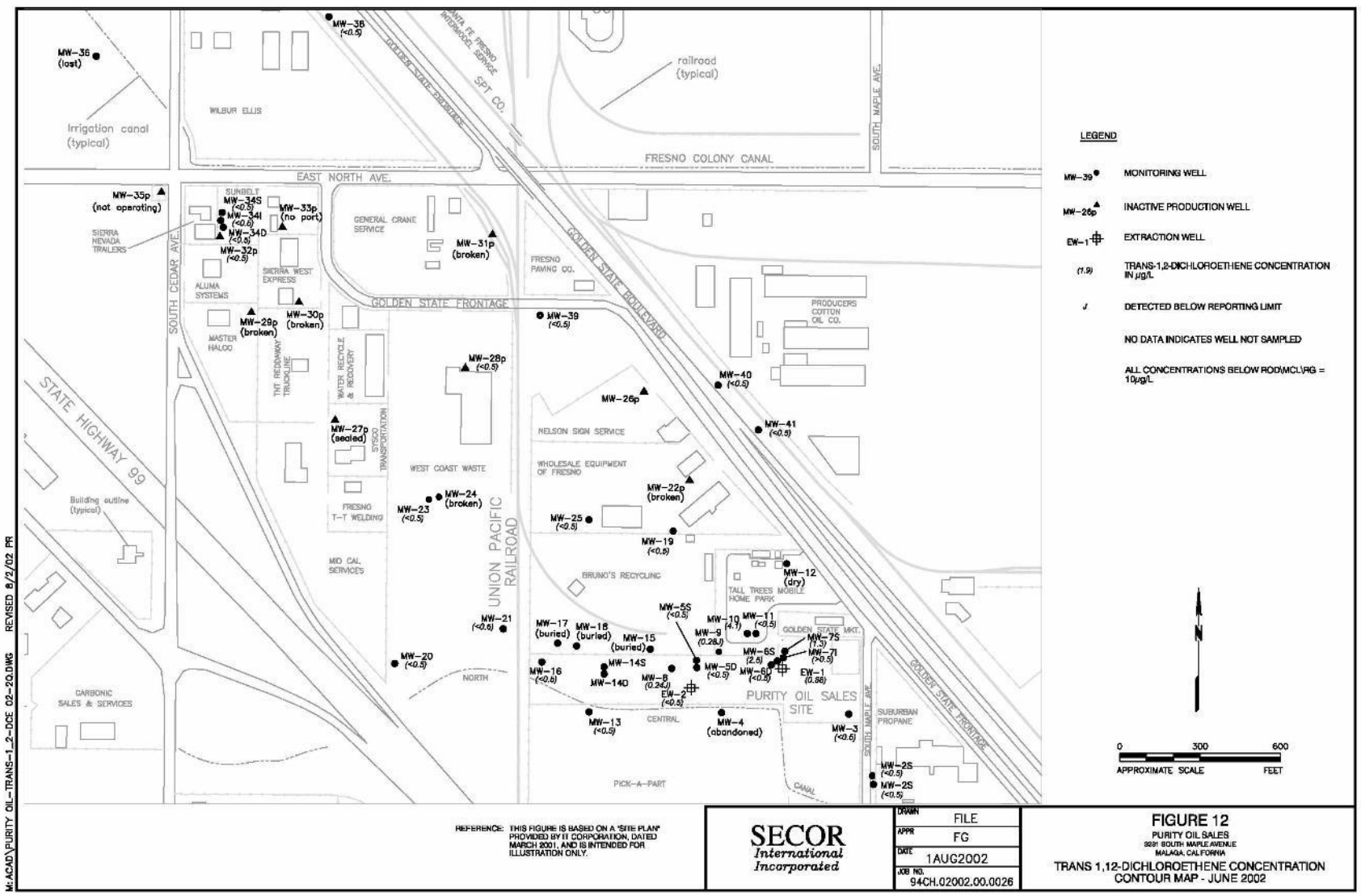


Figure B-22: Contour map of trans-1,2-dichlorothene (second quarter 2002)

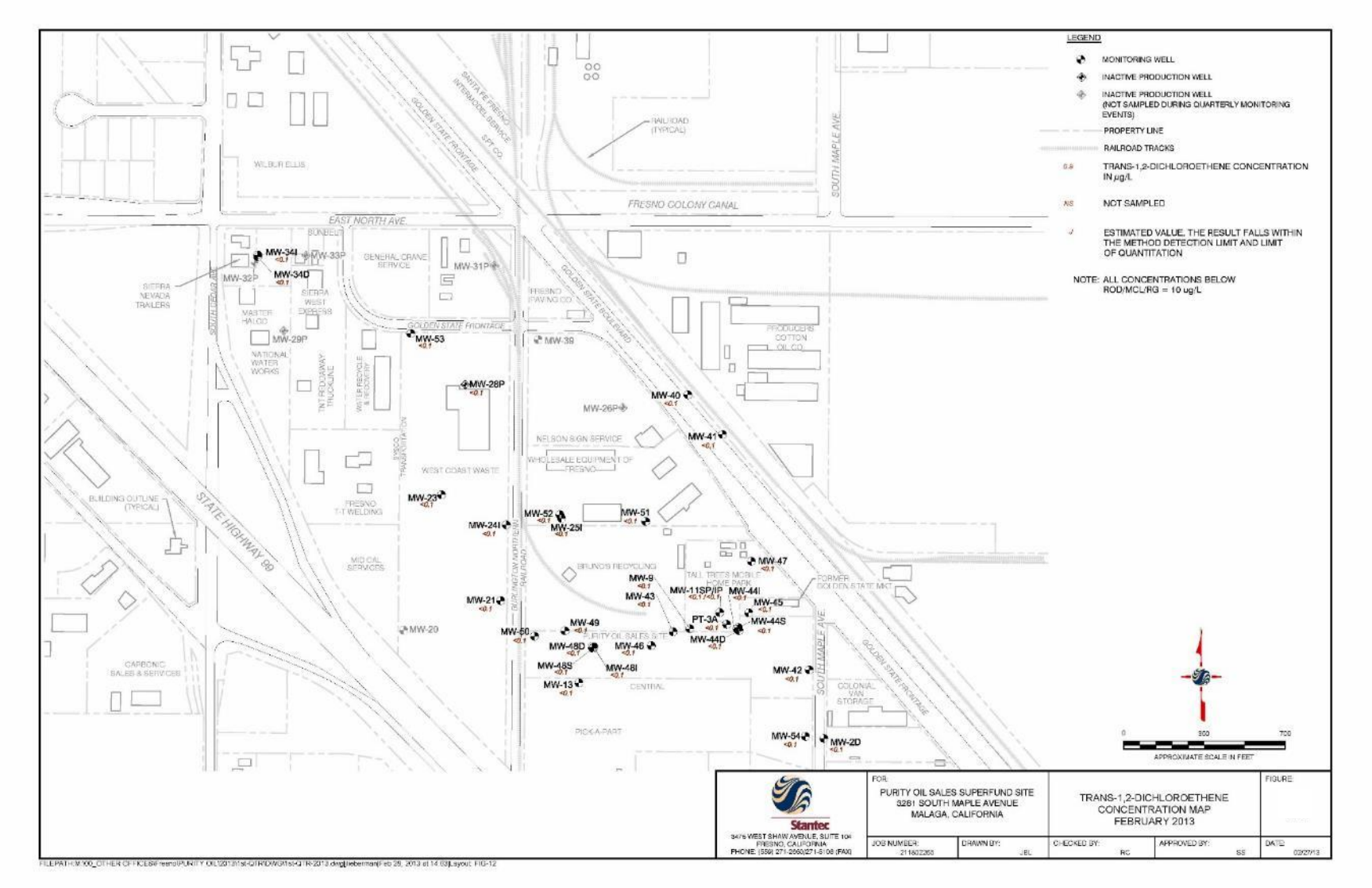


Figure B-23: Contour map of trans-1,2-dichloroethene (first half 2013)

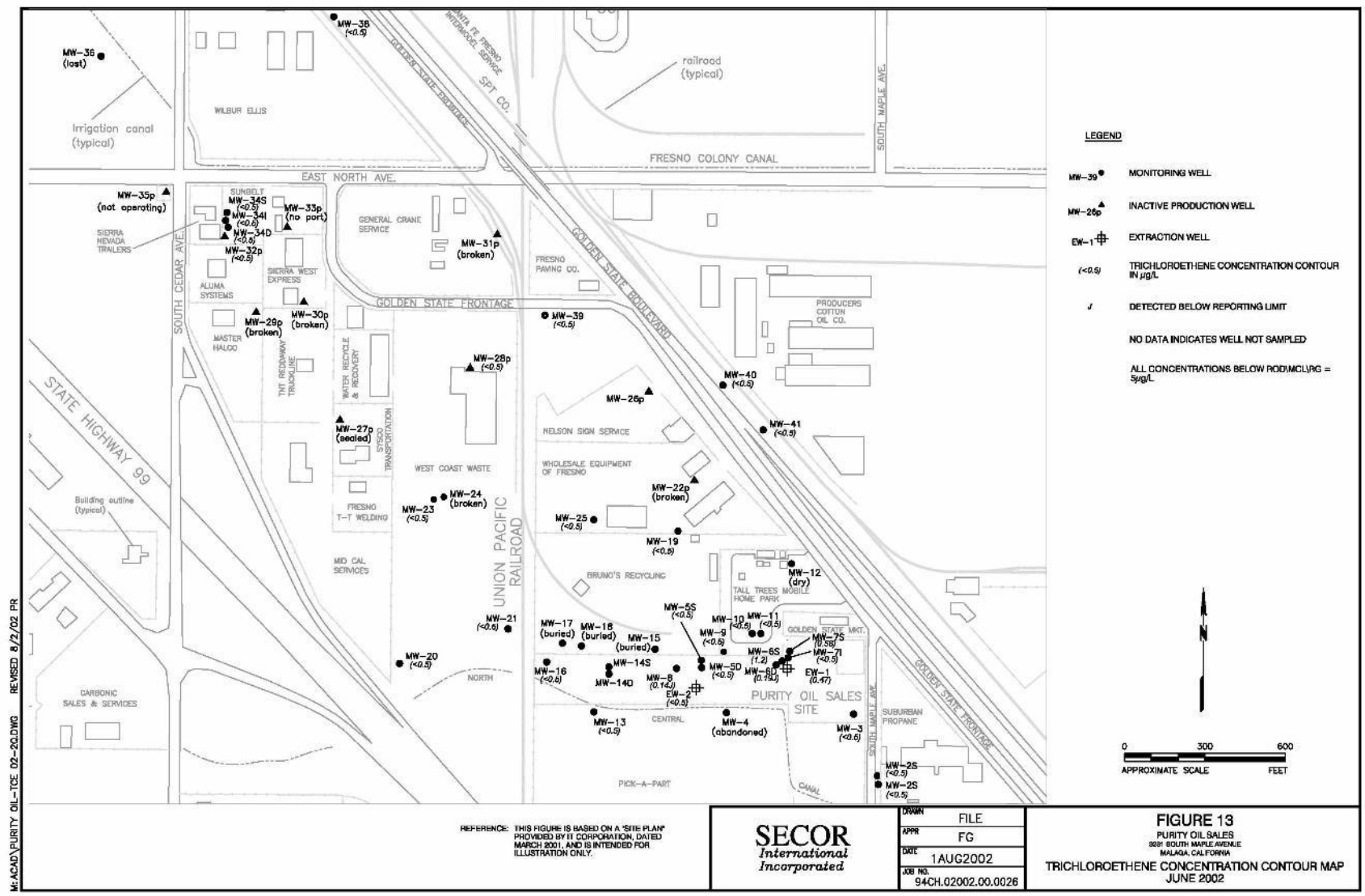


Figure B-24: Contour map of trichloroethene (second quarter 2002)

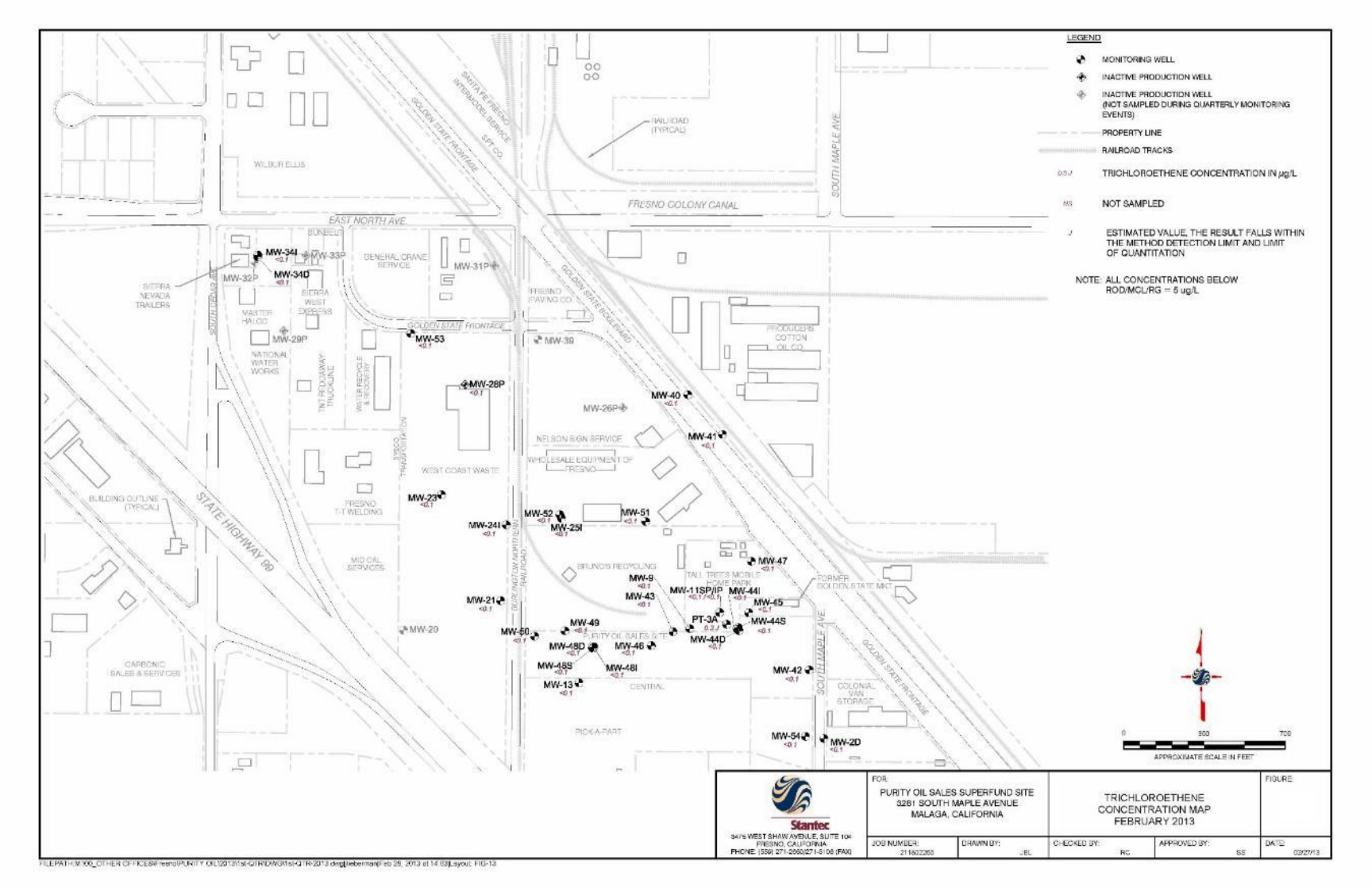


Figure B-25: Contour map of trichloroethene (first half 2013)

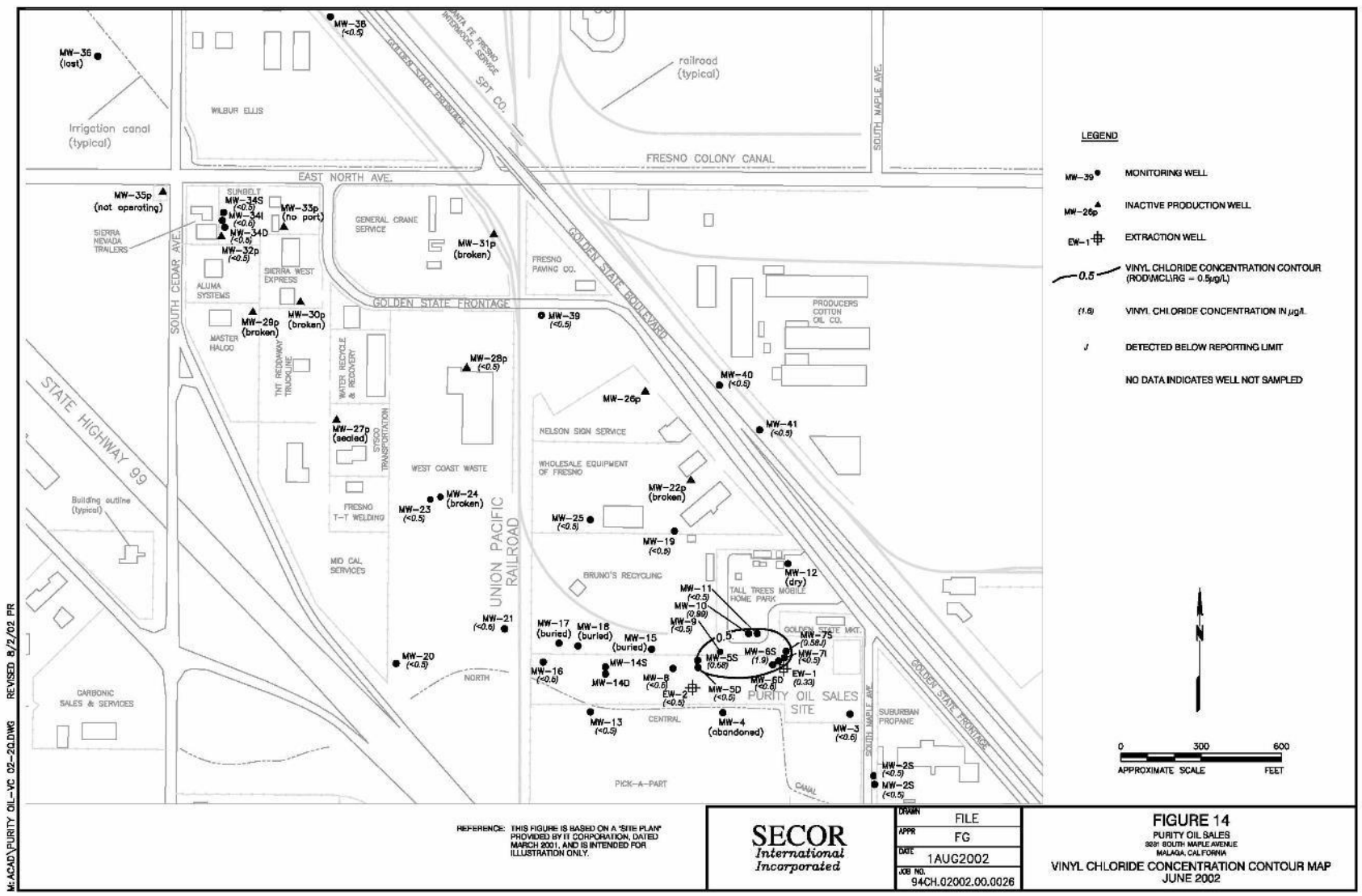


Figure B-26: Contour map of vinyl chloride (second quarter 2002)

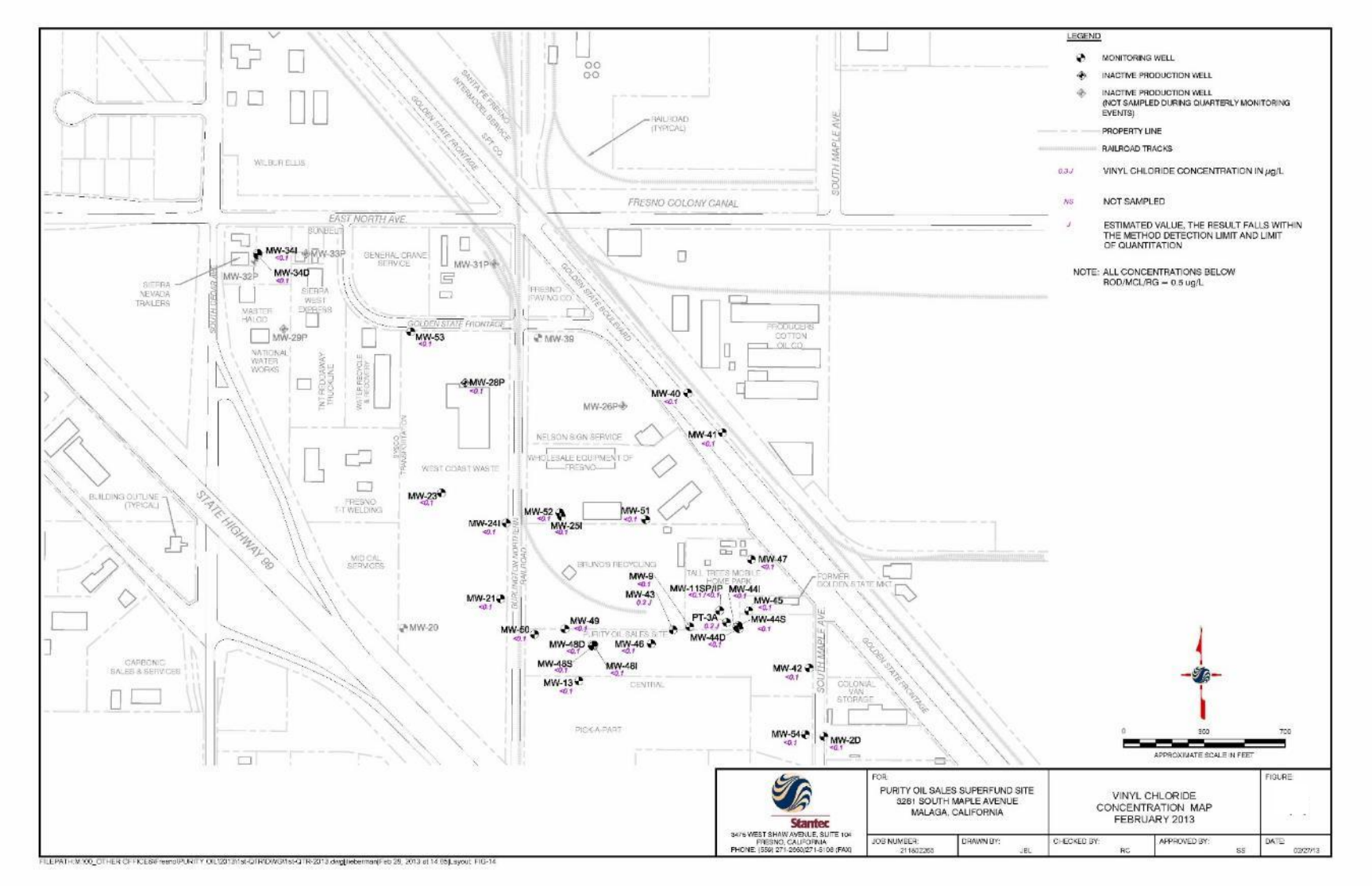


Figure B-27: Contour map of vinyl chloride (first half 2013)

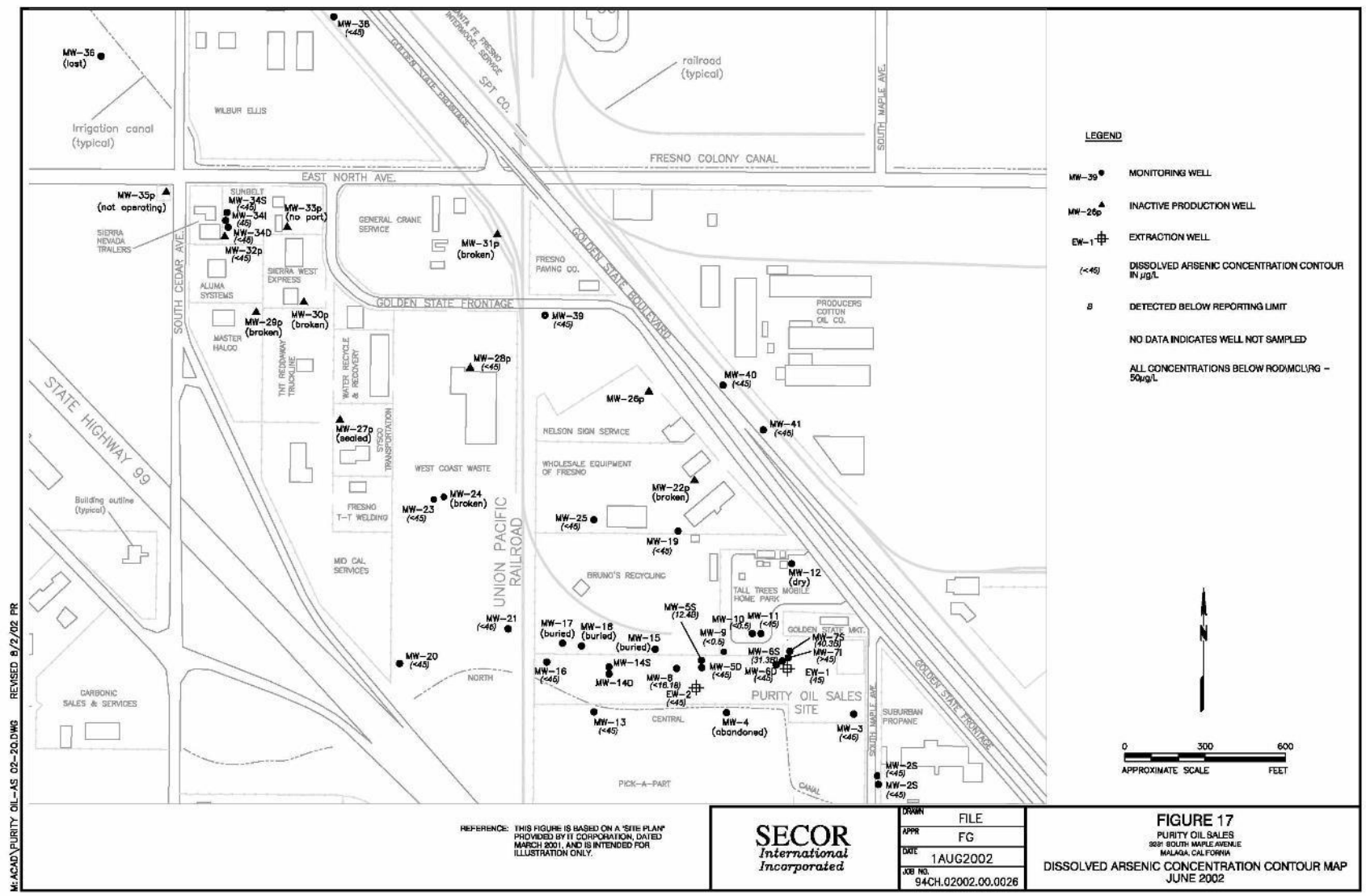


Figure B-28: Contour map of dissolved arsenic (second quarter 2002)

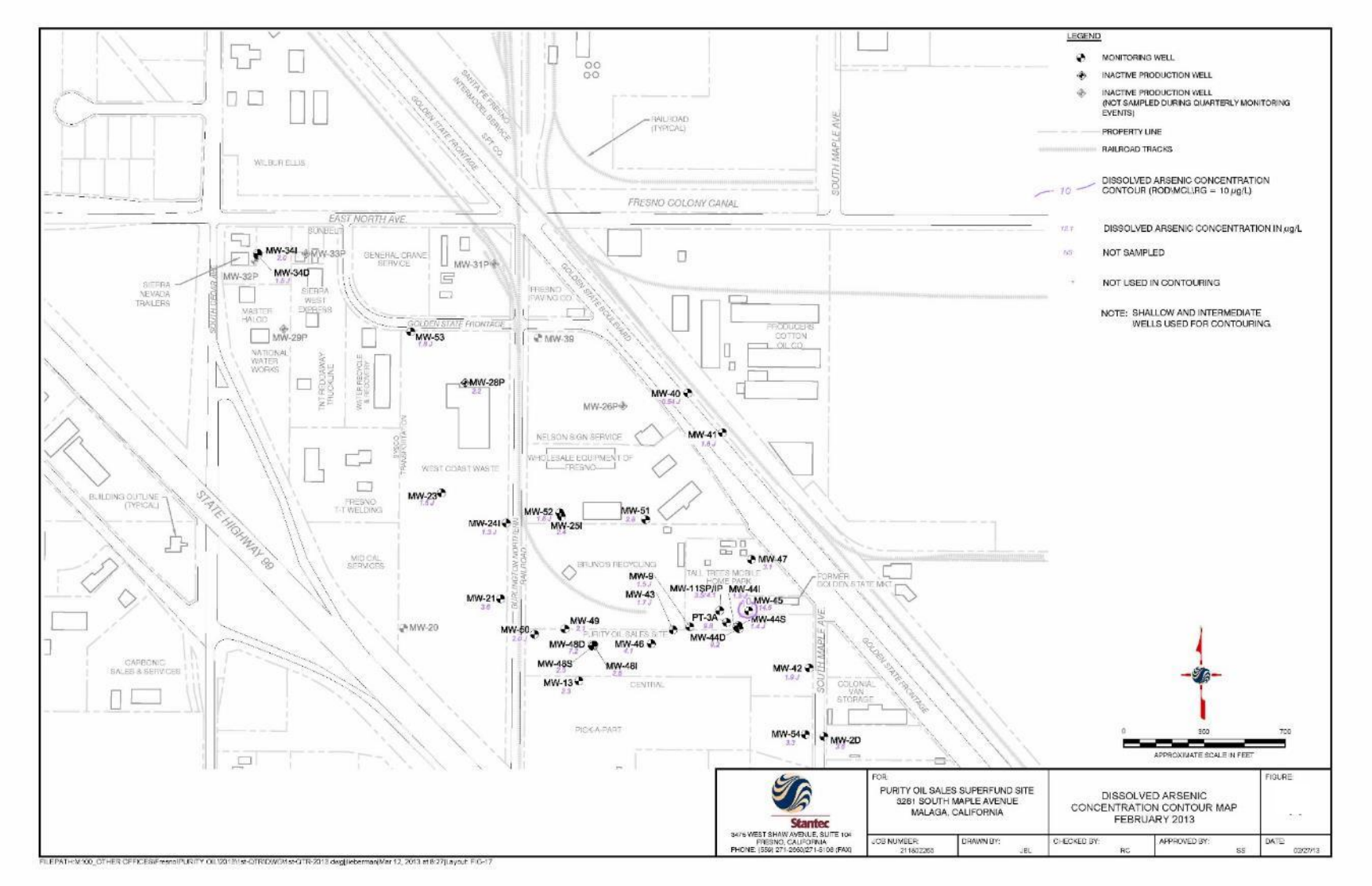


Figure B-29: Contour map of dissolved arsenic (first half 2013)

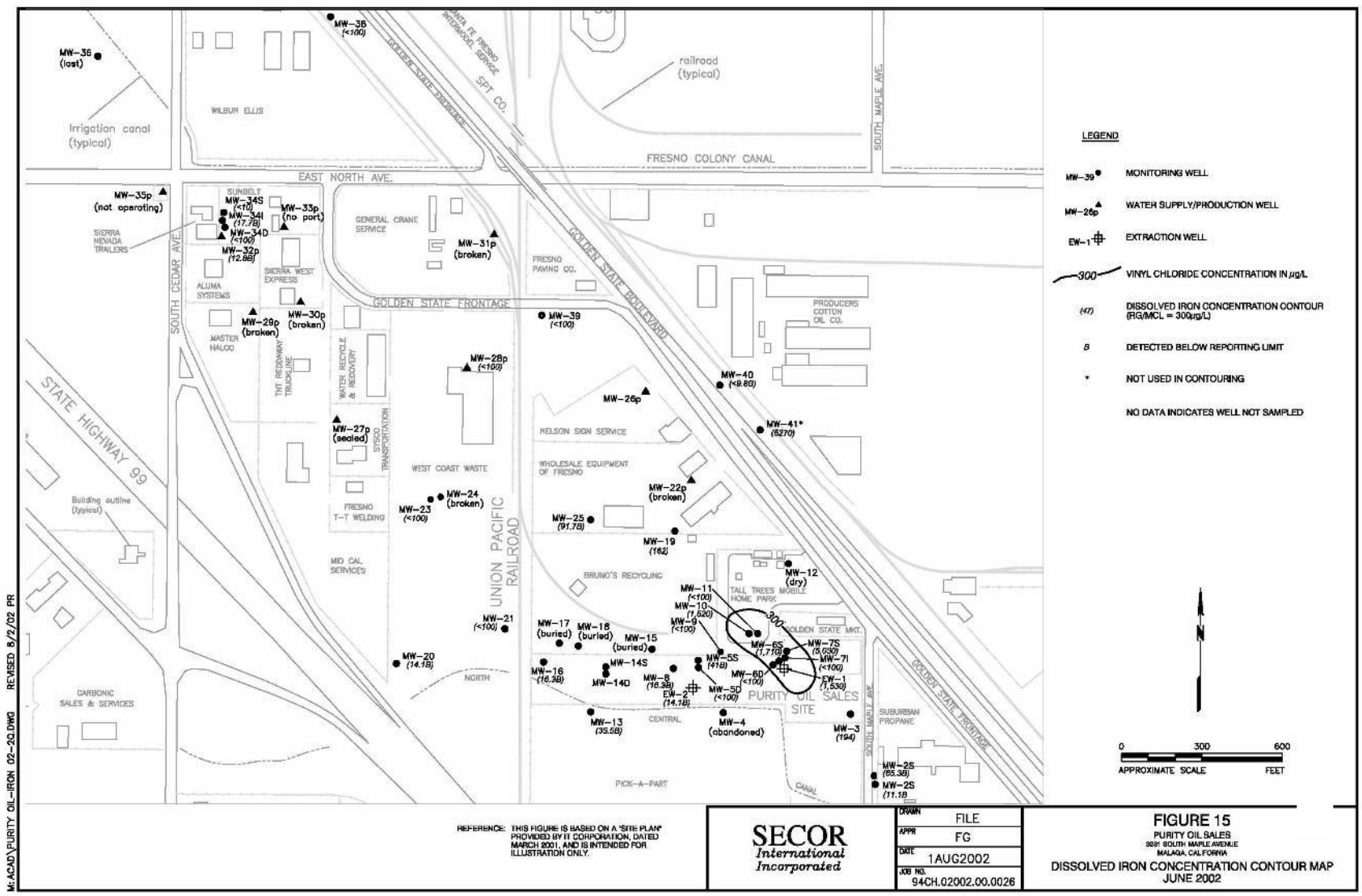


Figure B-30: Contour map of dissolved iron (second quarter 2002)

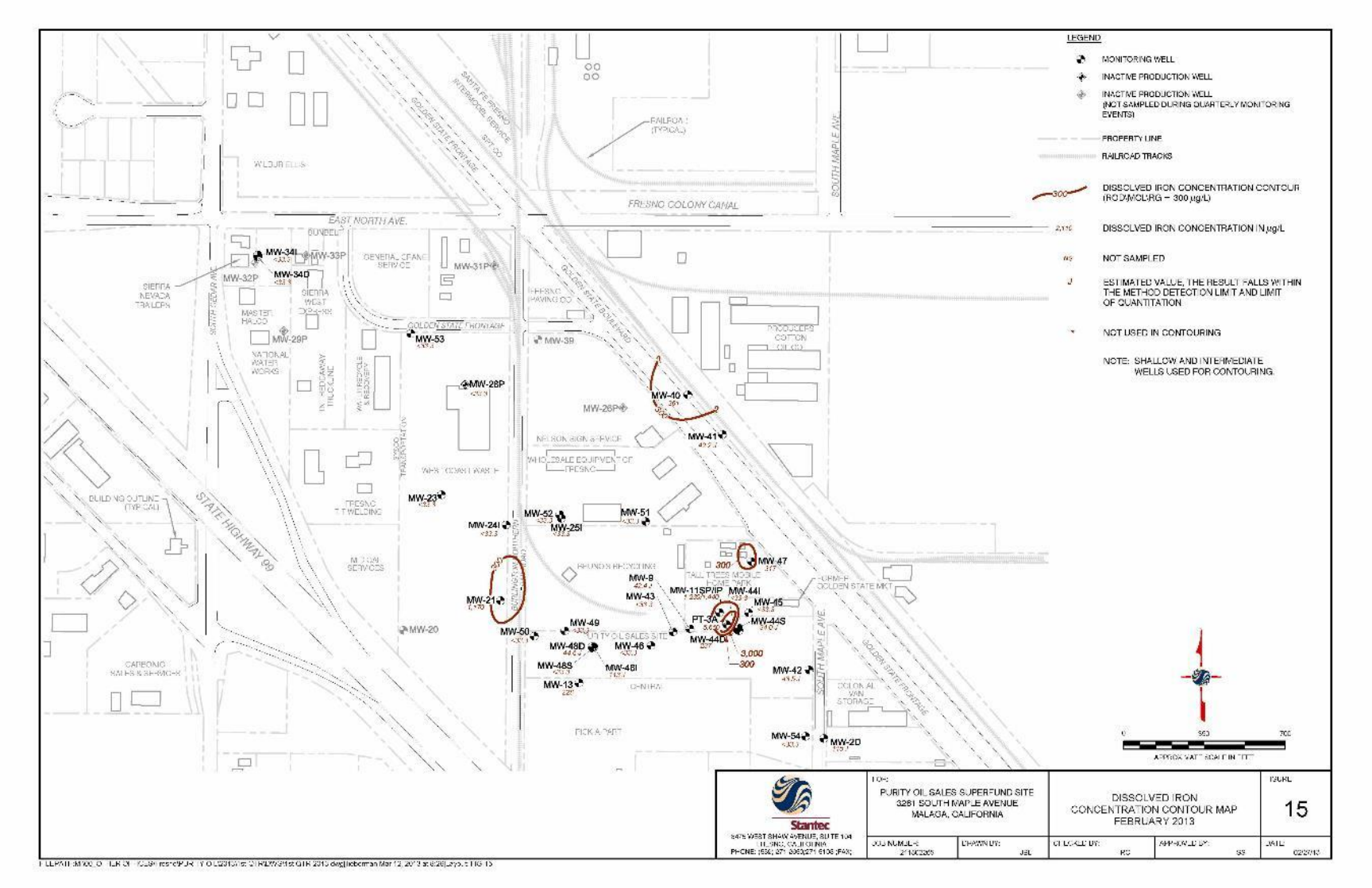


Figure B-31. Contour map of dissolved iron (first half 2013)

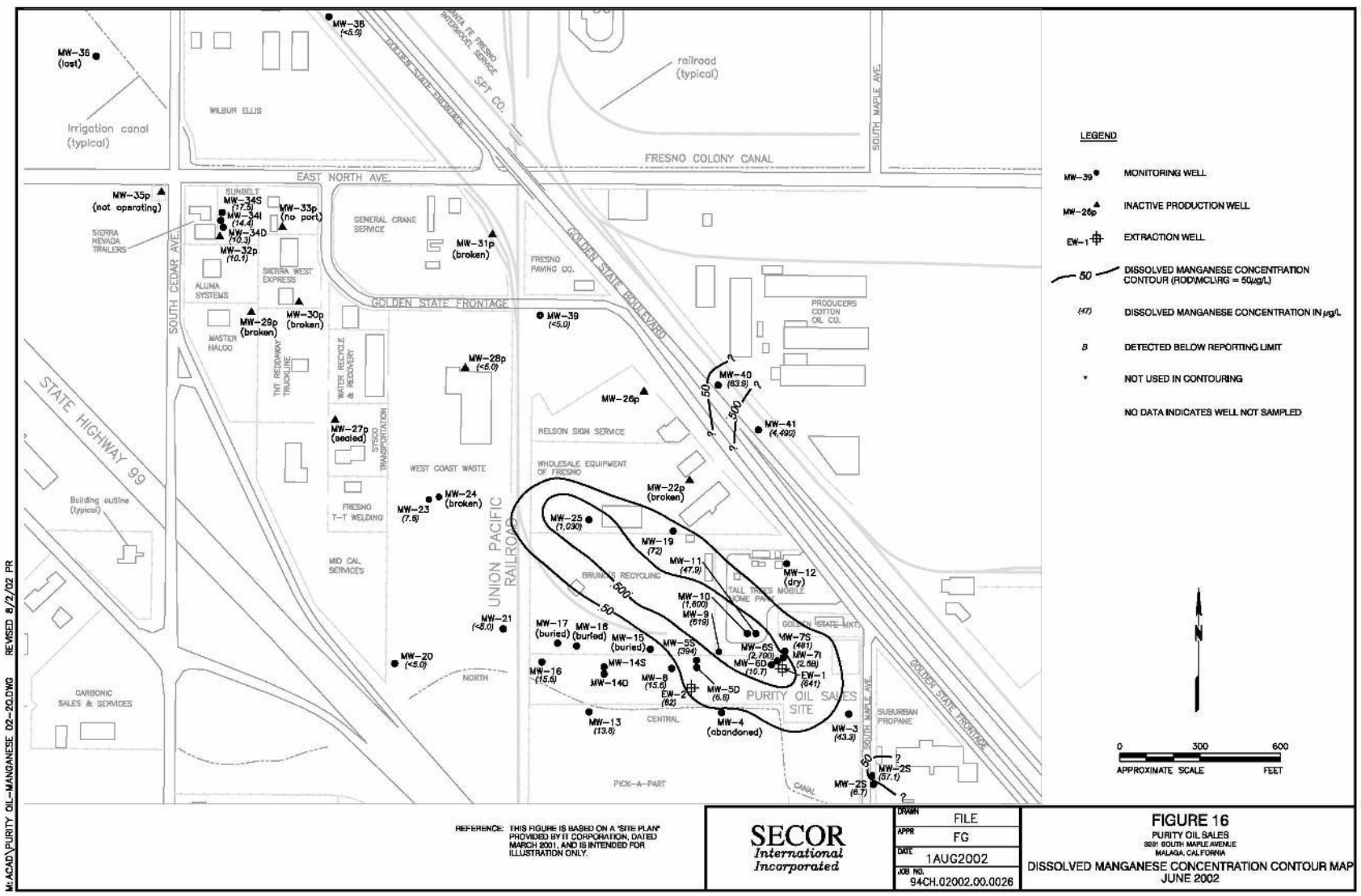


Figure B-32 Contour map of dissolved manganese (second quarter 2002)

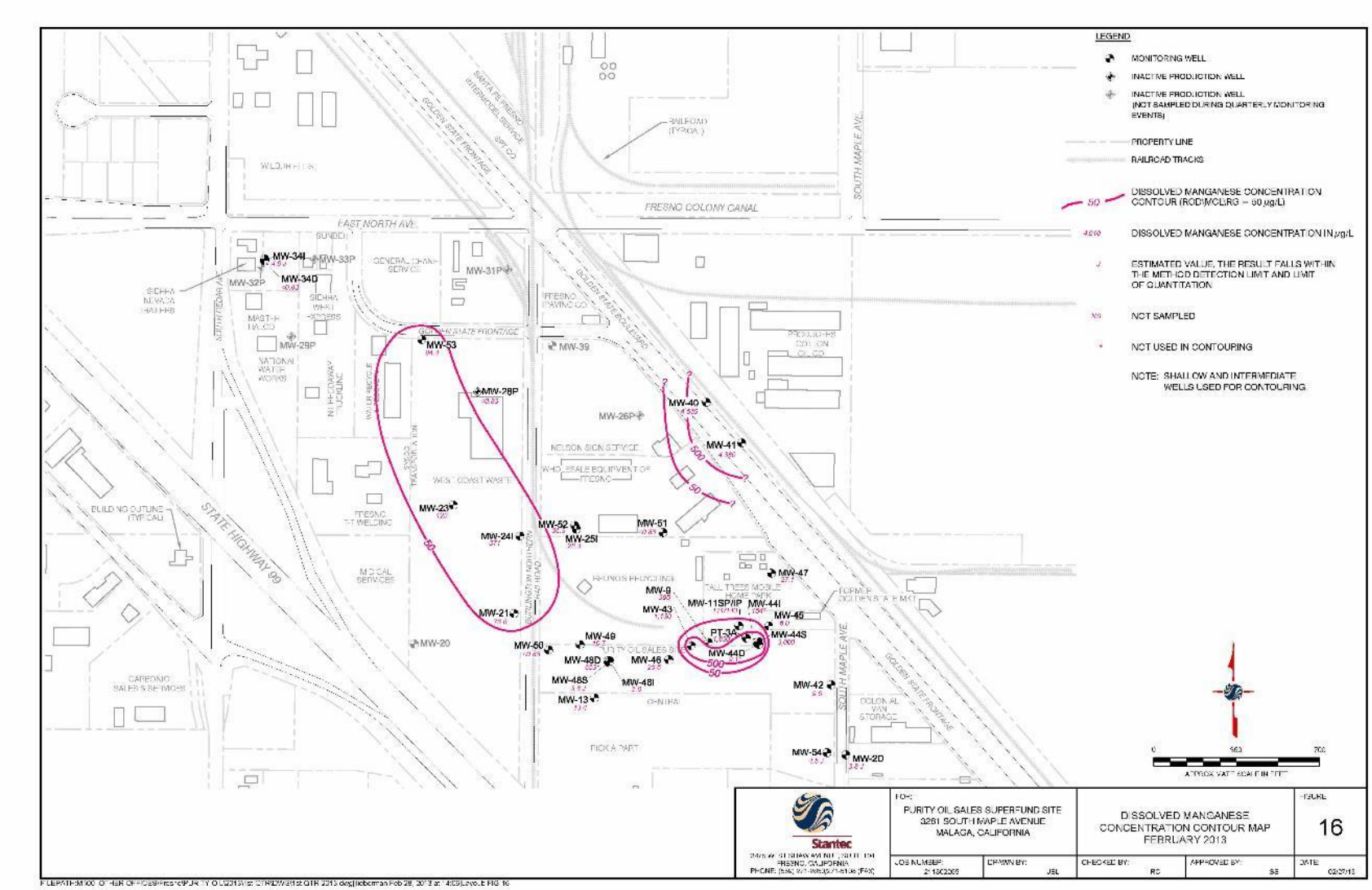


Figure B-33 Contour map of dissolved manganese (first half 2013)

Attachment A: MAROS Mann-Kendall Statistics Summary Sheets

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Time Period: 5/9/2008 **to** 1/21/2015
Consolidation Period: No Time Consolidation
Consolidation Type: Median
Duplicate Consolidation: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value

Well	Source/ Tail	Number of Samples	Number of Detects	Coefficient of Variation	Mann-Kendall Statistic	Confidence in Trend	All Samples "ND" ?	Concentration Trend
1,1-DICHLOROETHANE								
MW-43	T	20	20	0.34	-24	77.0%	No	S
1,2-DICHLOROETHANE								
MW-23	T	13	13	0.39	-31	96.7%	No	D
MW-43	T	20	20	0.38	55	96.0%	No	I
MW-44S	T	20	20	0.49	-134	100.0%	No	D
MW-45	T	20	17	1.15	-130	100.0%	No	D
MW-9	T	12	4	1.94	11	74.9%	No	NT
PT-3A	S	9	9	0.44	6	69.4%	No	NT
BENZENE								
MW-45	T	20	12	1.86	-153	100.0%	No	D
cis-1,2-DICHLOROETHYLENE								
MW-43	T	20	19	0.57	-135	100.0%	No	D
MW-44S	T	20	15	1.44	-132	100.0%	No	D
MW-45	T	20	20	1.04	-138	100.0%	No	D
MW-9	T	12	10	2.29	0	47.3%	No	NT
PT-3A	S	9	9	0.68	-5	65.7%	No	S
VINYL CHLORIDE								
MW-43	T	20	19	0.45	22	75.0%	No	NT
MW-44S	T	20	11	1.05	-137	100.0%	No	D
MW-45	T	11	1	3.07	-10	75.3%	No	NT

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

VINYL CHLORIDE

Well	Source/ Tail	Number of Samples	Number of Detects	Coefficient of Variation	Mann-Kendall Statistic	Confidence in Trend	All Samples "ND" ?	Concentration Trend

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A)-Due to insufficient Data (< 4 sampling events); Source/Tail (S/T)

The Number of Samples and Number of Detects shown above are post-consolidation values.

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-9 | **Time Period:** 5/9/2008 to 1/21/2015

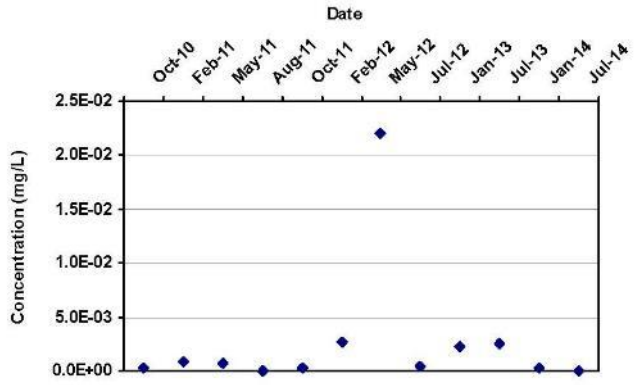
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: cis-1,2-DICHLOROETHYLENE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

0

Confidence in Trend:

47.3%

Coefficient of Variation:

2.29

Mann Kendall Concentration Trend: (See Note)

NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9	T	10/26/2010	cis-1,2-DICHLOROET	3.0E-04		1	1
MW-9	T	2/17/2011	cis-1,2-DICHLOROET	8.0E-04		1	1
MW-9	T	5/13/2011	cis-1,2-DICHLOROET	7.0E-04		1	1
MW-9	T	8/11/2011	cis-1,2-DICHLOROET	5.0E-06	ND	1	0
MW-9	T	10/26/2011	cis-1,2-DICHLOROET	3.0E-04		1	1
MW-9	T	2/10/2012	cis-1,2-DICHLOROET	2.7E-03		1	1
MW-9	T	5/14/2012	cis-1,2-DICHLOROET	2.2E-02		1	1
MW-9	T	7/19/2012	cis-1,2-DICHLOROET	4.0E-04		1	1
MW-9	T	1/31/2013	cis-1,2-DICHLOROET	2.3E-03		1	1

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9	T	7/16/2013	cis-1,2-DICHLOROET	2.5E-03		1	1
MW-9	T	1/28/2014	cis-1,2-DICHLOROET	3.0E-04		1	1
MW-9	T	7/21/2014	cis-1,2-DICHLOROET	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-9 | **Time Period:** 5/9/2008 to 1/21/2015

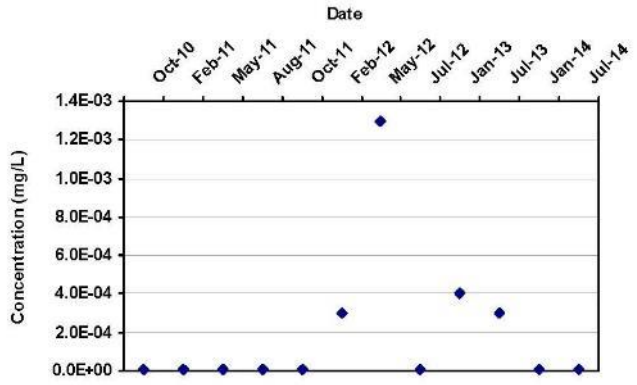
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: 1,2-DICHLOROETHANE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

11

Confidence in Trend:

74.9%

Coefficient of Variation:

1.94

Mann Kendall Concentration Trend: (See Note)

NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9	T	10/26/2010	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	2/17/2011	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	5/13/2011	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	8/11/2011	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	10/26/2011	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	2/10/2012	1,2-DICHLOROETHA	3.0E-04		1	1
MW-9	T	5/14/2012	1,2-DICHLOROETHA	1.3E-03		1	1
MW-9	T	7/19/2012	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	1/31/2013	1,2-DICHLOROETHA	4.0E-04		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-9	T	7/16/2013	1,2-DICHLOROETHA	3.0E-04		1	1
MW-9	T	1/28/2014	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-9	T	7/21/2014	1,2-DICHLOROETHA	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

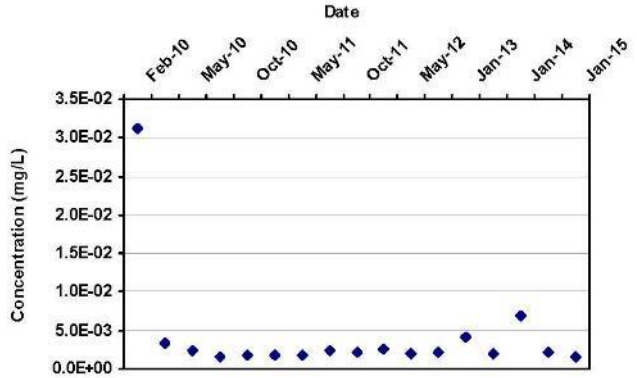
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-11IP
Well Type: T
COC: ARSENIC

Time Period: 5/9/2008 **to** 7/7/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:
-4

Confidence in Trend:
54.8%

Coefficient of Variation:
1.67

Mann Kendall Concentration Trend: (See Note)
NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-11IP	T	2/18/2010	ARSENIC	3.1E-02		1	1
MW-11IP	T	3/25/2010	ARSENIC	3.4E-03		3	3
MW-11IP	T	5/18/2010	ARSENIC	2.5E-03		2	2
MW-11IP	T	8/11/2010	ARSENIC	1.6E-03		2	2
MW-11IP	T	10/25/2010	ARSENIC	1.8E-03		1	1
MW-11IP	T	2/17/2011	ARSENIC	1.8E-03		1	1
MW-11IP	T	5/13/2011	ARSENIC	1.8E-03		1	1
MW-11IP	T	8/10/2011	ARSENIC	2.4E-03		1	1
MW-11IP	T	10/24/2011	ARSENIC	2.1E-03		1	1

MAROS Version 3.0
Release 352, September 2012

Thursday, January 07, 2016
Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-11IP	T	2/10/2012	ARSENIC	2.5E-03		1	1
MW-11IP	T	5/14/2012	ARSENIC	1.9E-03		1	1
MW-11IP	T	7/23/2012	ARSENIC	2.2E-03		1	1
MW-11IP	T	1/28/2013	ARSENIC	4.1E-03		1	1
MW-11IP	T	7/16/2013	ARSENIC	2.0E-03		1	1
MW-11IP	T	1/27/2014	ARSENIC	6.9E-03		1	1
MW-11IP	T	7/21/2014	ARSENIC	2.2E-03		1	1
MW-11IP	T	1/21/2015	ARSENIC	1.6E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-13 | **Time Period:** 5/9/2008 **to** 7/7/2015

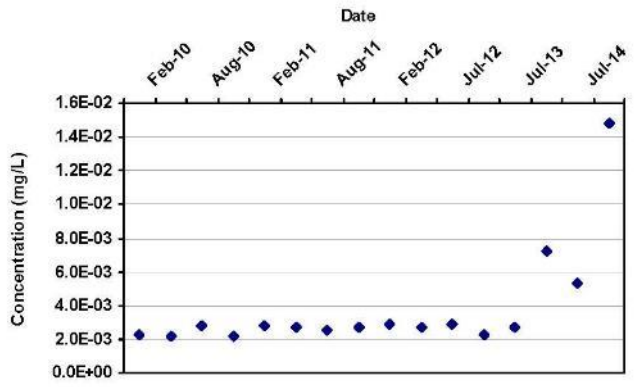
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: ARSENIC | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

57

Confidence in Trend:

99.5%

Coefficient of Variation:

0.84

Mann Kendall Concentration Trend: (See Note)

I

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-13	T	2/22/2010	ARSENIC	2.3E-03		1	1
MW-13	T	5/20/2010	ARSENIC	2.2E-03		2	2
MW-13	T	8/12/2010	ARSENIC	2.8E-03		2	2
MW-13	T	10/27/2010	ARSENIC	2.2E-03		1	1
MW-13	T	2/15/2011	ARSENIC	2.8E-03		1	1
MW-13	T	5/19/2011	ARSENIC	2.7E-03		1	1
MW-13	T	8/8/2011	ARSENIC	2.5E-03		1	1
MW-13	T	10/28/2011	ARSENIC	2.7E-03		1	1
MW-13	T	2/13/2012	ARSENIC	2.9E-03		1	1

MAROS Version 3.0

Release 352, September 2012

Thursday, January 07, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-13	T	5/9/2012	ARSENIC	2.7E-03		1	1
MW-13	T	7/24/2012	ARSENIC	2.9E-03		1	1
MW-13	T	1/28/2013	ARSENIC	2.3E-03		1	1
MW-13	T	7/17/2013	ARSENIC	2.7E-03		1	1
MW-13	T	1/29/2014	ARSENIC	7.2E-03		1	1
MW-13	T	7/22/2014	ARSENIC	5.3E-03		1	1
MW-13	T	1/13/2015	ARSENIC	1.5E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-23 | **Time Period:** 5/9/2008 **to** 1/21/2015

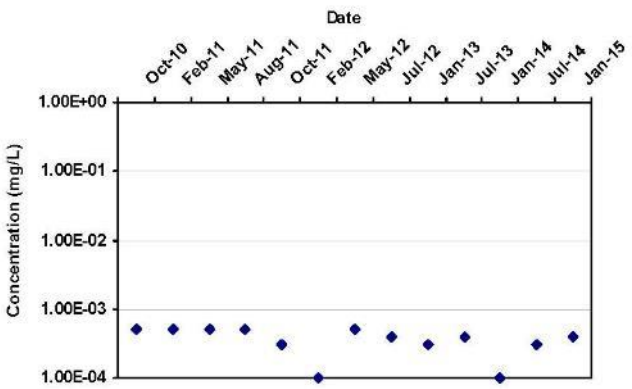
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: 1,2-DICHLOROETHANE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-31

Confidence in Trend:

96.7%

Coefficient of Variation:

0.39

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-23	T	10/20/2010	1,2-DICHLOROETHA	5.0E-04		1	1
MW-23	T	2/16/2011	1,2-DICHLOROETHA	5.0E-04		1	1
MW-23	T	5/11/2011	1,2-DICHLOROETHA	5.0E-04		1	1
MW-23	T	8/4/2011	1,2-DICHLOROETHA	5.0E-04		1	1
MW-23	T	10/20/2011	1,2-DICHLOROETHA	3.0E-04		1	1
MW-23	T	2/9/2012	1,2-DICHLOROETHA	1.0E-04		1	1
MW-23	T	5/8/2012	1,2-DICHLOROETHA	5.0E-04		1	1
MW-23	T	7/19/2012	1,2-DICHLOROETHA	4.0E-04		1	1
MW-23	T	1/31/2013	1,2-DICHLOROETHA	3.0E-04		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-23	T	7/15/2013	1,2-DICHLOROETHA	4.0E-04		1	1
MW-23	T	1/23/2014	1,2-DICHLOROETHA	1.0E-04		1	1
MW-23	T	7/17/2014	1,2-DICHLOROETHA	3.0E-04		1	1
MW-23	T	1/21/2015	1,2-DICHLOROETHA	4.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

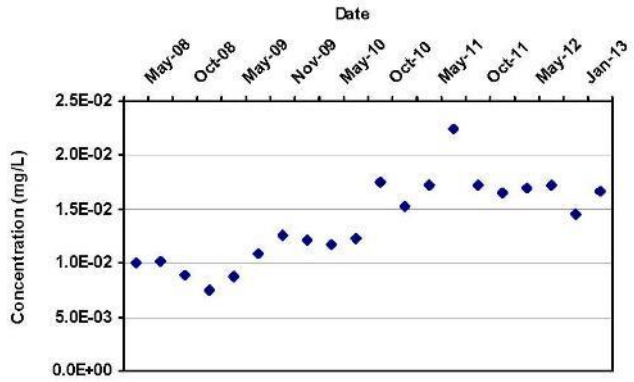
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-45
Well Type: T
COC: ARSENIC

Time Period: 5/9/2008 **to** 7/7/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:
109

Confidence in Trend:
100.0%

Coefficient of Variation:
0.28

Mann Kendall Concentration Trend: (See Note)
I

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	5/13/2008	ARSENIC	1.0E-02		1	1
MW-45	T	8/18/2008	ARSENIC	1.0E-02		1	1
MW-45	T	10/22/2008	ARSENIC	8.9E-03		1	1
MW-45	T	2/9/2009	ARSENIC	7.5E-03		1	1
MW-45	T	5/11/2009	ARSENIC	8.8E-03		1	1
MW-45	T	7/31/2009	ARSENIC	1.1E-02		1	1
MW-45	T	11/17/2009	ARSENIC	1.3E-02		1	1
MW-45	T	2/9/2010	ARSENIC	1.2E-02		1	1
MW-45	T	5/19/2010	ARSENIC	1.2E-02		2	2

MAROS Version 3.0
Release 352, September 2012

Thursday, January 07, 2016
Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	8/5/2010	ARSENIC	1.2E-02		2	2
MW-45	T	10/26/2010	ARSENIC	1.8E-02		1	1
MW-45	T	2/23/2011	ARSENIC	1.5E-02		1	1
MW-45	T	5/13/2011	ARSENIC	1.7E-02		1	1
MW-45	T	8/10/2011	ARSENIC	2.3E-02		1	1
MW-45	T	10/27/2011	ARSENIC	1.7E-02		1	1
MW-45	T	2/14/2012	ARSENIC	1.7E-02		1	1
MW-45	T	5/10/2012	ARSENIC	1.7E-02		1	1
MW-45	T	7/20/2012	ARSENIC	1.7E-02		1	1
MW-45	T	1/30/2013	ARSENIC	1.5E-02		1	1
MW-45	T	7/19/2013	ARSENIC	1.7E-02		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-45 | **Time Period:** 5/9/2008 **to** 1/21/2015

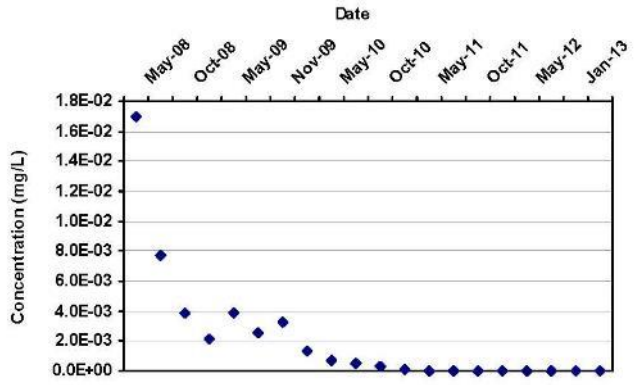
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: BENZENE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-153

Confidence in Trend:

100.0%

Coefficient of Variation:

1.86

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	5/13/2008	BENZENE	1.7E-02		1	1
MW-45	T	8/18/2008	BENZENE	7.7E-03		1	1
MW-45	T	10/22/2008	BENZENE	3.9E-03		1	1
MW-45	T	2/9/2009	BENZENE	2.1E-03		1	1
MW-45	T	5/11/2009	BENZENE	3.9E-03		1	1
MW-45	T	7/31/2009	BENZENE	2.5E-03		1	1
MW-45	T	11/17/2009	BENZENE	3.3E-03		1	1
MW-45	T	2/9/2010	BENZENE	1.3E-03		1	1
MW-45	T	5/19/2010	BENZENE	7.0E-04		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	8/5/2010	BENZENE	5.0E-04		1	1
MW-45	T	10/26/2010	BENZENE	3.0E-04		1	1
MW-45	T	2/23/2011	BENZENE	1.0E-04		1	1
MW-45	T	5/13/2011	BENZENE	5.0E-06	ND	1	0
MW-45	T	8/10/2011	BENZENE	5.0E-06	ND	1	0
MW-45	T	10/27/2011	BENZENE	5.0E-06	ND	1	0
MW-45	T	2/14/2012	BENZENE	5.0E-06	ND	1	0
MW-45	T	5/10/2012	BENZENE	5.0E-06	ND	1	0
MW-45	T	7/20/2012	BENZENE	5.0E-06	ND	1	0
MW-45	T	1/30/2013	BENZENE	5.0E-06	ND	1	0
MW-45	T	7/19/2013	BENZENE	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-45 | **Time Period:** 5/9/2008 **to** 1/21/2015

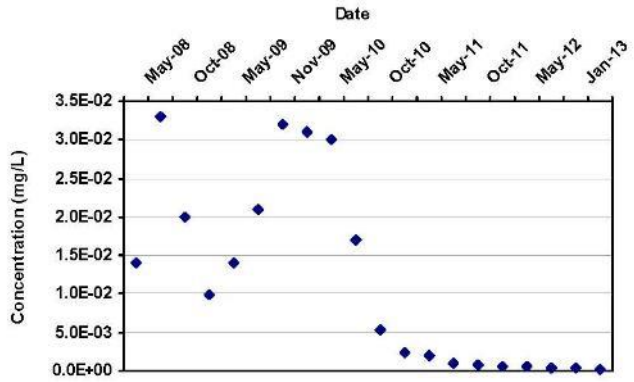
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: cis-1,2-DICHLOROETHYLENE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-138

Confidence in Trend:

100.0%

Coefficient of Variation:

1.04

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	5/13/2008	cis-1,2-DICHLOROET	1.4E-02		1	1
MW-45	T	8/18/2008	cis-1,2-DICHLOROET	3.3E-02		1	1
MW-45	T	10/22/2008	cis-1,2-DICHLOROET	2.0E-02		1	1
MW-45	T	2/9/2009	cis-1,2-DICHLOROET	9.8E-03		1	1
MW-45	T	5/11/2009	cis-1,2-DICHLOROET	1.4E-02		1	1
MW-45	T	7/31/2009	cis-1,2-DICHLOROET	2.1E-02		1	1
MW-45	T	11/17/2009	cis-1,2-DICHLOROET	3.2E-02		1	1
MW-45	T	2/9/2010	cis-1,2-DICHLOROET	3.1E-02		1	1
MW-45	T	5/19/2010	cis-1,2-DICHLOROET	3.0E-02		1	1

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	8/5/2010	cis-1,2-DICHLOROET	1.7E-02		1	1
MW-45	T	10/26/2010	cis-1,2-DICHLOROET	5.4E-03		1	1
MW-45	T	2/23/2011	cis-1,2-DICHLOROET	2.4E-03		1	1
MW-45	T	5/13/2011	cis-1,2-DICHLOROET	2.0E-03		1	1
MW-45	T	8/10/2011	cis-1,2-DICHLOROET	9.0E-04		1	1
MW-45	T	10/27/2011	cis-1,2-DICHLOROET	7.0E-04		1	1
MW-45	T	2/14/2012	cis-1,2-DICHLOROET	6.0E-04		1	1
MW-45	T	5/10/2012	cis-1,2-DICHLOROET	6.0E-04		1	1
MW-45	T	7/20/2012	cis-1,2-DICHLOROET	4.0E-04		1	1
MW-45	T	1/30/2013	cis-1,2-DICHLOROET	3.0E-04		1	1
MW-45	T	7/19/2013	cis-1,2-DICHLOROET	2.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-45 | **Time Period:** 5/9/2008 **to** 1/21/2015

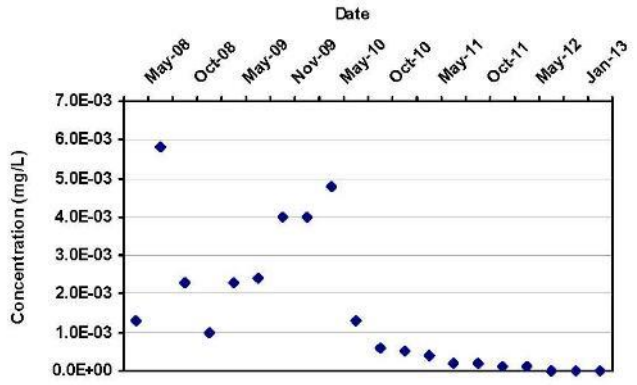
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: 1,2-DICHLOROETHANE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-130

Confidence in Trend:

100.0%

Coefficient of Variation:

1.15

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	5/13/2008	1,2-DICHLOROETHA	1.3E-03		1	1
MW-45	T	8/18/2008	1,2-DICHLOROETHA	5.8E-03		1	1
MW-45	T	10/22/2008	1,2-DICHLOROETHA	2.3E-03		1	1
MW-45	T	2/9/2009	1,2-DICHLOROETHA	1.0E-03		1	1
MW-45	T	5/11/2009	1,2-DICHLOROETHA	2.3E-03		1	1
MW-45	T	7/31/2009	1,2-DICHLOROETHA	2.4E-03		1	1
MW-45	T	11/17/2009	1,2-DICHLOROETHA	4.0E-03		1	1
MW-45	T	2/9/2010	1,2-DICHLOROETHA	4.0E-03		1	1
MW-45	T	5/19/2010	1,2-DICHLOROETHA	4.8E-03		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	8/5/2010	1,2-DICHLOROETHA	1.3E-03		1	1
MW-45	T	10/26/2010	1,2-DICHLOROETHA	6.0E-04		1	1
MW-45	T	2/23/2011	1,2-DICHLOROETHA	5.0E-04		1	1
MW-45	T	5/13/2011	1,2-DICHLOROETHA	4.0E-04		1	1
MW-45	T	8/10/2011	1,2-DICHLOROETHA	2.0E-04		1	1
MW-45	T	10/27/2011	1,2-DICHLOROETHA	2.0E-04		1	1
MW-45	T	2/14/2012	1,2-DICHLOROETHA	1.0E-04		1	1
MW-45	T	5/10/2012	1,2-DICHLOROETHA	1.0E-04		1	1
MW-45	T	7/20/2012	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-45	T	1/30/2013	1,2-DICHLOROETHA	5.0E-06	ND	1	0
MW-45	T	7/19/2013	1,2-DICHLOROETHA	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-45 | **Time Period:** 5/9/2008 **to** 1/21/2015

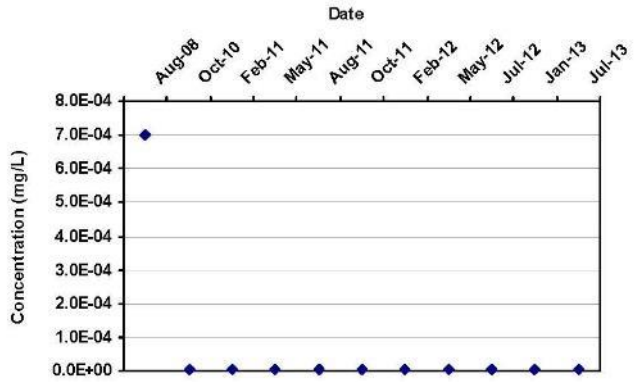
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: VINYL CHLORIDE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-10

Confidence in Trend:

75.3%

Coefficient of Variation:

3.07

Mann Kendall Concentration Trend: (See Note)

NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	8/18/2008	VINYL CHLORIDE	7.0E-04		1	1
MW-45	T	10/26/2010	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	2/23/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	5/13/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	8/10/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	10/27/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	2/14/2012	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	5/10/2012	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	7/20/2012	VINYL CHLORIDE	5.0E-06	ND	1	0

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-45	T	1/30/2013	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-45	T	7/19/2013	VINYL CHLORIDE	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

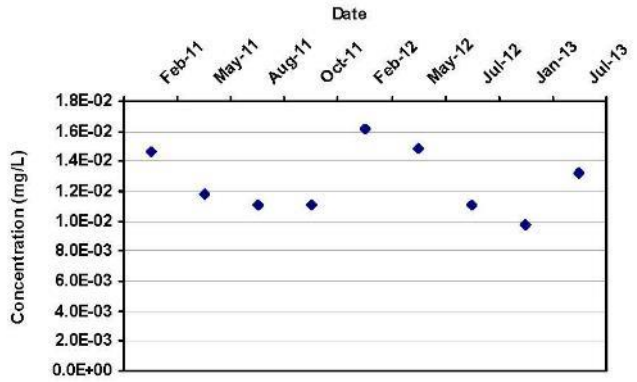
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: PT-3A
Well Type: S
COC: ARSENIC

Time Period: 5/9/2008 to 7/7/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:

-7

Confidence in Trend:

72.8%

Coefficient of Variation:

0.17

Mann Kendall Concentration Trend: (See Note)

S

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
PT-3A	S	2/23/2011	ARSENIC	1.5E-02		1	1
PT-3A	S	5/16/2011	ARSENIC	1.2E-02		1	1
PT-3A	S	8/11/2011	ARSENIC	1.1E-02		1	1
PT-3A	S	10/26/2011	ARSENIC	1.1E-02		1	1
PT-3A	S	2/14/2012	ARSENIC	1.6E-02		1	1
PT-3A	S	5/10/2012	ARSENIC	1.5E-02		1	1
PT-3A	S	7/23/2012	ARSENIC	1.1E-02		1	1
PT-3A	S	1/30/2013	ARSENIC	9.8E-03		1	1
PT-3A	S	7/19/2013	ARSENIC	1.3E-02		1	1

MAROS Version 3.0
Release 352, September 2012

Thursday, January 07, 2016
Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

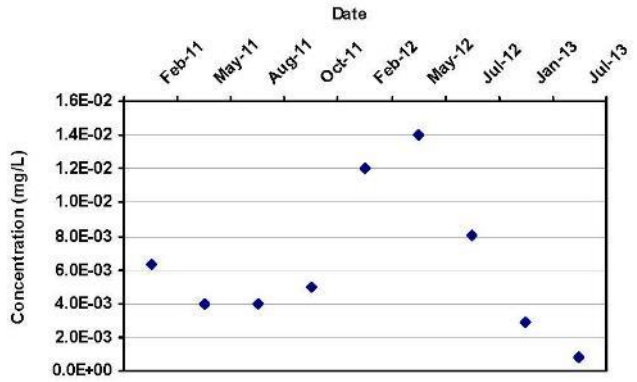
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: PT-3A
Well Type: S
COC: cis-1,2-DICHLOROETHYLENE

Time Period: 5/9/2008 to 1/21/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:

-5

Confidence in Trend:

65.7%

Coefficient of Variation:

0.68

Mann Kendall Concentration Trend: (See Note)

S

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
PT-3A	S	2/23/2011	cis-1,2-DICHLOROET	6.3E-03		1	1
PT-3A	S	5/16/2011	cis-1,2-DICHLOROET	4.0E-03		1	1
PT-3A	S	8/11/2011	cis-1,2-DICHLOROET	4.0E-03		1	1
PT-3A	S	10/26/2011	cis-1,2-DICHLOROET	5.0E-03		1	1
PT-3A	S	2/14/2012	cis-1,2-DICHLOROET	1.2E-02		1	1
PT-3A	S	5/10/2012	cis-1,2-DICHLOROET	1.4E-02		1	1
PT-3A	S	7/23/2012	cis-1,2-DICHLOROET	8.0E-03		1	1
PT-3A	S	1/30/2013	cis-1,2-DICHLOROET	2.9E-03		1	1
PT-3A	S	7/19/2013	cis-1,2-DICHLOROET	8.0E-04		1	1

MAROS Version 3.0
Release 352, September 2012

Wednesday, January 06, 2016
Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

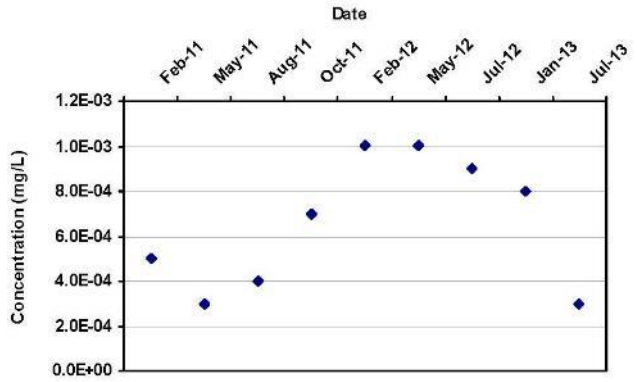
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: PT-3A
Well Type: S
COC: 1,2-DICHLOROETHANE

Time Period: 5/9/2008 to 1/21/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:
6

Confidence in Trend:
69.4%

Coefficient of Variation:
0.44

Mann Kendall Concentration Trend: (See Note)
NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
PT-3A	S	2/23/2011	1,2-DICHLOROETHA	5.0E-04		1	1
PT-3A	S	5/16/2011	1,2-DICHLOROETHA	3.0E-04		1	1
PT-3A	S	8/11/2011	1,2-DICHLOROETHA	4.0E-04		1	1
PT-3A	S	10/26/2011	1,2-DICHLOROETHA	7.0E-04		1	1
PT-3A	S	2/14/2012	1,2-DICHLOROETHA	1.0E-03		1	1
PT-3A	S	5/10/2012	1,2-DICHLOROETHA	1.0E-03		1	1
PT-3A	S	7/23/2012	1,2-DICHLOROETHA	9.0E-04		1	1
PT-3A	S	1/30/2013	1,2-DICHLOROETHA	8.0E-04		1	1
PT-3A	S	7/19/2013	1,2-DICHLOROETHA	3.0E-04		1	1

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-43 | **Time Period:** 5/9/2008 **to** 1/21/2015

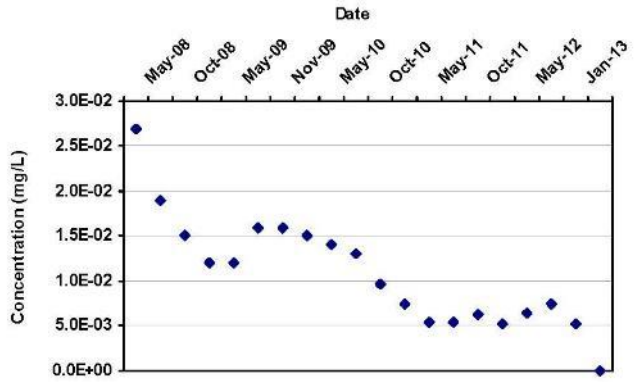
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: cis-1,2-DICHLOROETHYLENE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-135

Confidence in Trend:

100.0%

Coefficient of Variation:

0.57

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	5/9/2008	cis-1,2-DICHLOROET	2.7E-02		1	1
MW-43	T	8/18/2008	cis-1,2-DICHLOROET	1.9E-02		1	1
MW-43	T	10/24/2008	cis-1,2-DICHLOROET	1.5E-02		1	1
MW-43	T	2/11/2009	cis-1,2-DICHLOROET	1.2E-02		1	1
MW-43	T	5/11/2009	cis-1,2-DICHLOROET	1.2E-02		1	1
MW-43	T	8/3/2009	cis-1,2-DICHLOROET	1.6E-02		1	1
MW-43	T	11/19/2009	cis-1,2-DICHLOROET	1.6E-02		1	1
MW-43	T	2/22/2010	cis-1,2-DICHLOROET	1.5E-02		1	1
MW-43	T	5/20/2010	cis-1,2-DICHLOROET	1.4E-02		1	1

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	8/12/2010	cis-1,2-DICHLOROET	1.3E-02		1	1
MW-43	T	10/27/2010	cis-1,2-DICHLOROET	9.7E-03		1	1
MW-43	T	2/24/2011	cis-1,2-DICHLOROET	7.4E-03		1	1
MW-43	T	5/19/2011	cis-1,2-DICHLOROET	5.4E-03		1	1
MW-43	T	8/9/2011	cis-1,2-DICHLOROET	5.5E-03		1	1
MW-43	T	10/28/2011	cis-1,2-DICHLOROET	6.2E-03		1	1
MW-43	T	2/15/2012	cis-1,2-DICHLOROET	5.2E-03		1	1
MW-43	T	5/11/2012	cis-1,2-DICHLOROET	6.5E-03		1	1
MW-43	T	7/24/2012	cis-1,2-DICHLOROET	7.5E-03		1	1
MW-43	T	1/31/2013	cis-1,2-DICHLOROET	5.3E-03		1	1
MW-43	T	7/19/2013	cis-1,2-DICHLOROET	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-43 | **Time Period:** 5/9/2008 to 1/21/2015

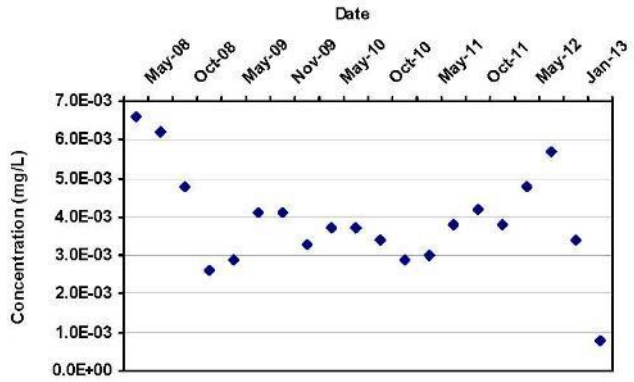
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: 1,1-DICHLOROETHANE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

-24

Confidence in Trend:

77.0%

Coefficient of Variation:

0.34

Mann Kendall Concentration Trend: (See Note)

S

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	5/9/2008	1,1-DICHLOROETHA	6.6E-03		1	1
MW-43	T	8/18/2008	1,1-DICHLOROETHA	6.2E-03		1	1
MW-43	T	10/24/2008	1,1-DICHLOROETHA	4.8E-03		1	1
MW-43	T	2/11/2009	1,1-DICHLOROETHA	2.6E-03		1	1
MW-43	T	5/11/2009	1,1-DICHLOROETHA	2.9E-03		1	1
MW-43	T	8/3/2009	1,1-DICHLOROETHA	4.1E-03		1	1
MW-43	T	11/19/2009	1,1-DICHLOROETHA	4.1E-03		1	1
MW-43	T	2/22/2010	1,1-DICHLOROETHA	3.3E-03		1	1
MW-43	T	5/20/2010	1,1-DICHLOROETHA	3.7E-03		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	8/12/2010	1,1-DICHLOROETHA	3.7E-03		1	1
MW-43	T	10/27/2010	1,1-DICHLOROETHA	3.4E-03		1	1
MW-43	T	2/24/2011	1,1-DICHLOROETHA	2.9E-03		1	1
MW-43	T	5/19/2011	1,1-DICHLOROETHA	3.0E-03		1	1
MW-43	T	8/9/2011	1,1-DICHLOROETHA	3.8E-03		1	1
MW-43	T	10/28/2011	1,1-DICHLOROETHA	4.2E-03		1	1
MW-43	T	2/15/2012	1,1-DICHLOROETHA	3.8E-03		1	1
MW-43	T	5/11/2012	1,1-DICHLOROETHA	4.8E-03		1	1
MW-43	T	7/24/2012	1,1-DICHLOROETHA	5.7E-03		1	1
MW-43	T	1/31/2013	1,1-DICHLOROETHA	3.4E-03		1	1
MW-43	T	7/19/2013	1,1-DICHLOROETHA	8.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-43 | **Time Period:** 5/9/2008 to 1/21/2015

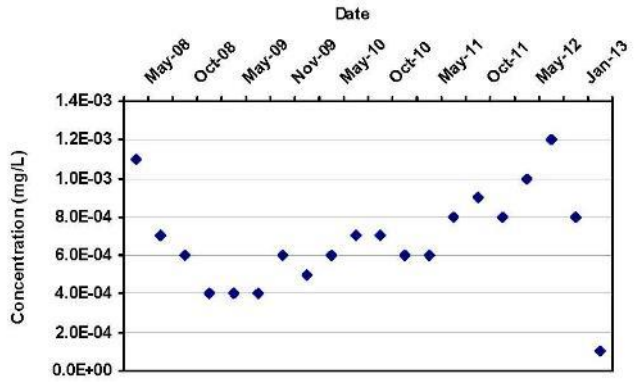
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: 1,2-DICHLOROETHANE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

55

Confidence in Trend:

96.0%

Coefficient of Variation:

0.38

Mann Kendall Concentration Trend: (See Note)

I

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	5/9/2008	1,2-DICHLOROETHA	1.1E-03		1	1
MW-43	T	8/18/2008	1,2-DICHLOROETHA	7.0E-04		1	1
MW-43	T	10/24/2008	1,2-DICHLOROETHA	6.0E-04		1	1
MW-43	T	2/11/2009	1,2-DICHLOROETHA	4.0E-04		1	1
MW-43	T	5/11/2009	1,2-DICHLOROETHA	4.0E-04		1	1
MW-43	T	8/3/2009	1,2-DICHLOROETHA	4.0E-04		1	1
MW-43	T	11/19/2009	1,2-DICHLOROETHA	6.0E-04		1	1
MW-43	T	2/22/2010	1,2-DICHLOROETHA	5.0E-04		1	1
MW-43	T	5/20/2010	1,2-DICHLOROETHA	6.0E-04		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	8/12/2010	1,2-DICHLOROETHA	7.0E-04		1	1
MW-43	T	10/27/2010	1,2-DICHLOROETHA	7.0E-04		1	1
MW-43	T	2/24/2011	1,2-DICHLOROETHA	6.0E-04		1	1
MW-43	T	5/19/2011	1,2-DICHLOROETHA	6.0E-04		1	1
MW-43	T	8/9/2011	1,2-DICHLOROETHA	8.0E-04		1	1
MW-43	T	10/28/2011	1,2-DICHLOROETHA	9.0E-04		1	1
MW-43	T	2/15/2012	1,2-DICHLOROETHA	8.0E-04		1	1
MW-43	T	5/11/2012	1,2-DICHLOROETHA	1.0E-03		1	1
MW-43	T	7/24/2012	1,2-DICHLOROETHA	1.2E-03		1	1
MW-43	T	1/31/2013	1,2-DICHLOROETHA	8.0E-04		1	1
MW-43	T	7/19/2013	1,2-DICHLOROETHA	1.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-43 | **Time Period:** 5/9/2008 to 1/21/2015

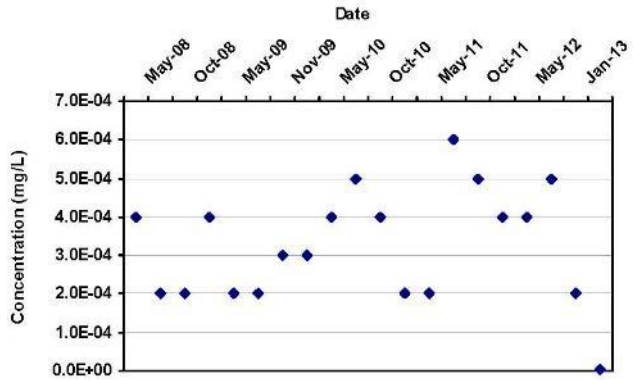
Well Type: T | **Consolidation Period:** No Time Consolidation

COC: VINYL CHLORIDE | **Duplicate Consolidation:** Median

Consolidation Type: Average

ND Values: 1/2 Detection Limit

J Flag Values : Actual Value



Mann Kendall S Statistic:

22

Confidence in Trend:

75.0%

Coefficient of Variation:

0.45

Mann Kendall Concentration Trend: (See Note)

NT

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	5/9/2008	VINYL CHLORIDE	4.0E-04		1	1
MW-43	T	8/18/2008	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	10/24/2008	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	2/11/2009	VINYL CHLORIDE	4.0E-04		1	1
MW-43	T	5/11/2009	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	8/3/2009	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	11/19/2009	VINYL CHLORIDE	3.0E-04		1	1
MW-43	T	2/22/2010	VINYL CHLORIDE	3.0E-04		1	1
MW-43	T	5/20/2010	VINYL CHLORIDE	4.0E-04		1	1

MAROS Version 3.0

Release 352, September 2012

Wednesday, January 06, 2016

Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-43	T	8/12/2010	VINYL CHLORIDE	5.0E-04		1	1
MW-43	T	10/27/2010	VINYL CHLORIDE	4.0E-04		1	1
MW-43	T	2/24/2011	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	5/19/2011	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	8/9/2011	VINYL CHLORIDE	6.0E-04		1	1
MW-43	T	10/28/2011	VINYL CHLORIDE	5.0E-04		1	1
MW-43	T	2/15/2012	VINYL CHLORIDE	4.0E-04		1	1
MW-43	T	5/11/2012	VINYL CHLORIDE	4.0E-04		1	1
MW-43	T	7/24/2012	VINYL CHLORIDE	5.0E-04		1	1
MW-43	T	1/31/2013	VINYL CHLORIDE	2.0E-04		1	1
MW-43	T	7/19/2013	VINYL CHLORIDE	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

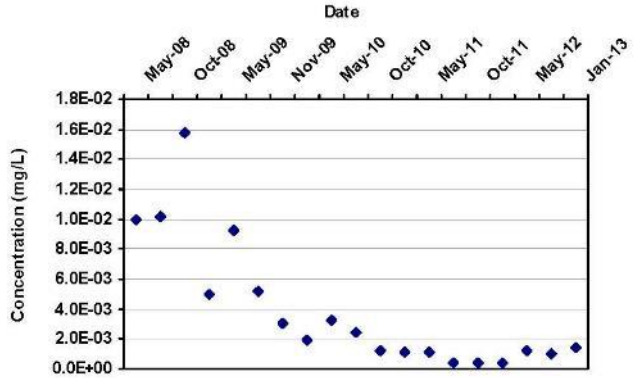
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-44S
Well Type: T
COC: ARSENIC

Time Period: 5/9/2008 **to** 7/7/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:

-118

Confidence in Trend:

100.0%

Coefficient of Variation:

1.11

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	5/13/2008	ARSENIC	1.0E-02		1	1
MW-44S	T	8/19/2008	ARSENIC	1.0E-02		1	1
MW-44S	T	10/27/2008	ARSENIC	1.6E-02		1	1
MW-44S	T	2/6/2009	ARSENIC	5.0E-03		1	1
MW-44S	T	5/8/2009	ARSENIC	9.3E-03		1	1
MW-44S	T	7/31/2009	ARSENIC	5.2E-03		1	1
MW-44S	T	11/16/2009	ARSENIC	3.1E-03		1	1
MW-44S	T	2/18/2010	ARSENIC	1.9E-03		1	1
MW-44S	T	5/18/2010	ARSENIC	3.3E-03		2	2

MAROS Version 3.0
Release 352, September 2012

Thursday, January 07, 2016
Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	8/10/2010	ARSENIC	2.4E-03		2	2
MW-44S	T	10/25/2010	ARSENIC	1.2E-03		1	1
MW-44S	T	2/23/2011	ARSENIC	1.1E-03		1	1
MW-44S	T	5/16/2011	ARSENIC	1.1E-03		1	1
MW-44S	T	8/11/2011	ARSENIC	4.5E-04	ND	1	0
MW-44S	T	10/26/2011	ARSENIC	4.5E-04	ND	1	0
MW-44S	T	2/14/2012	ARSENIC	4.5E-04	ND	1	0
MW-44S	T	5/10/2012	ARSENIC	1.2E-03		1	1
MW-44S	T	7/23/2012	ARSENIC	1.0E-03		1	1
MW-44S	T	1/30/2013	ARSENIC	1.4E-03		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

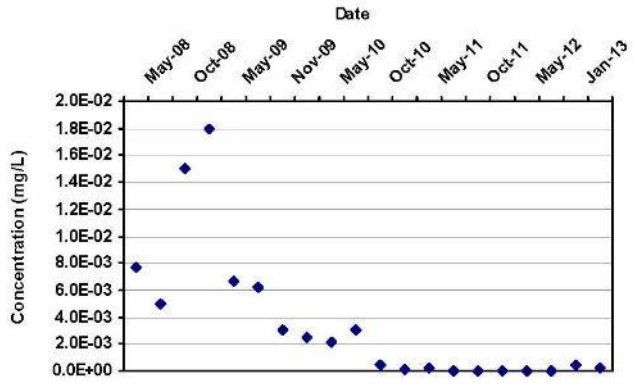
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-44S
Well Type: T
COC: cis-1,2-DICHLOROETHYLENE

Time Period: 5/9/2008 to 1/21/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:

-132

Confidence in Trend:

100.0%

Coefficient of Variation:

1.44

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	5/13/2008	cis-1,2-DICHLOROET	7.7E-03		1	1
MW-44S	T	8/19/2008	cis-1,2-DICHLOROET	5.0E-03		1	1
MW-44S	T	10/27/2008	cis-1,2-DICHLOROET	1.5E-02		1	1
MW-44S	T	2/6/2009	cis-1,2-DICHLOROET	1.8E-02		1	1
MW-44S	T	5/8/2009	cis-1,2-DICHLOROET	6.7E-03		1	1
MW-44S	T	7/31/2009	cis-1,2-DICHLOROET	6.2E-03		1	1
MW-44S	T	11/16/2009	cis-1,2-DICHLOROET	3.1E-03		1	1
MW-44S	T	2/18/2010	cis-1,2-DICHLOROET	2.5E-03		1	1
MW-44S	T	5/18/2010	cis-1,2-DICHLOROET	2.2E-03		1	1

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	8/10/2010	cis-1,2-DICHLOROET	3.1E-03		1	1
MW-44S	T	10/25/2010	cis-1,2-DICHLOROET	5.0E-04		1	1
MW-44S	T	2/23/2011	cis-1,2-DICHLOROET	1.0E-04		1	1
MW-44S	T	5/16/2011	cis-1,2-DICHLOROET	2.0E-04		1	1
MW-44S	T	8/11/2011	cis-1,2-DICHLOROET	5.0E-06	ND	1	0
MW-44S	T	10/26/2011	cis-1,2-DICHLOROET	5.0E-06	ND	1	0
MW-44S	T	2/14/2012	cis-1,2-DICHLOROET	5.0E-06	ND	1	0
MW-44S	T	5/10/2012	cis-1,2-DICHLOROET	5.0E-06	ND	1	0
MW-44S	T	7/23/2012	cis-1,2-DICHLOROET	5.0E-06	ND	1	0
MW-44S	T	1/30/2013	cis-1,2-DICHLOROET	4.0E-04		1	1
MW-44S	T	7/18/2013	cis-1,2-DICHLOROET	2.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

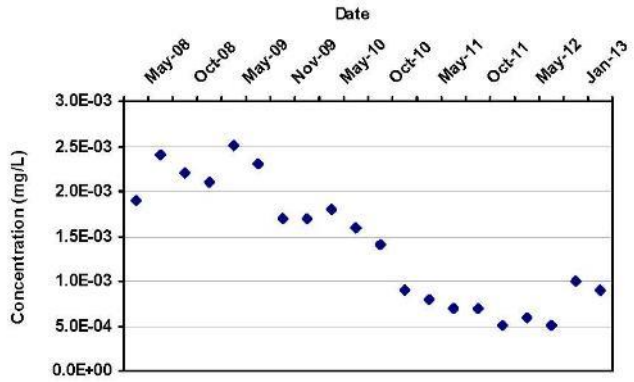
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-44S
Well Type: T
COC: 1,2-DICHLOROETHANE

Time Period: 5/9/2008 to 1/21/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:

-134

Confidence in Trend:

100.0%

Coefficient of Variation:

0.49

Mann Kendall Concentration Trend: (See Note)

D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	5/13/2008	1,2-DICHLOROETHA	1.9E-03		1	1
MW-44S	T	8/19/2008	1,2-DICHLOROETHA	2.4E-03		1	1
MW-44S	T	10/27/2008	1,2-DICHLOROETHA	2.2E-03		1	1
MW-44S	T	2/6/2009	1,2-DICHLOROETHA	2.1E-03		1	1
MW-44S	T	5/8/2009	1,2-DICHLOROETHA	2.5E-03		1	1
MW-44S	T	7/31/2009	1,2-DICHLOROETHA	2.3E-03		1	1
MW-44S	T	11/16/2009	1,2-DICHLOROETHA	1.7E-03		1	1
MW-44S	T	2/18/2010	1,2-DICHLOROETHA	1.7E-03		1	1
MW-44S	T	5/18/2010	1,2-DICHLOROETHA	1.8E-03		1	1

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	8/10/2010	1,2-DICHLOROETHA	1.6E-03		1	1
MW-44S	T	10/25/2010	1,2-DICHLOROETHA	1.4E-03		1	1
MW-44S	T	2/23/2011	1,2-DICHLOROETHA	9.0E-04		1	1
MW-44S	T	5/16/2011	1,2-DICHLOROETHA	8.0E-04		1	1
MW-44S	T	8/11/2011	1,2-DICHLOROETHA	7.0E-04		1	1
MW-44S	T	10/26/2011	1,2-DICHLOROETHA	7.0E-04		1	1
MW-44S	T	2/14/2012	1,2-DICHLOROETHA	5.0E-04		1	1
MW-44S	T	5/10/2012	1,2-DICHLOROETHA	6.0E-04		1	1
MW-44S	T	7/23/2012	1,2-DICHLOROETHA	5.0E-04		1	1
MW-44S	T	1/30/2013	1,2-DICHLOROETHA	1.0E-03		1	1
MW-44S	T	7/18/2013	1,2-DICHLOROETHA	9.0E-04		1	1

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

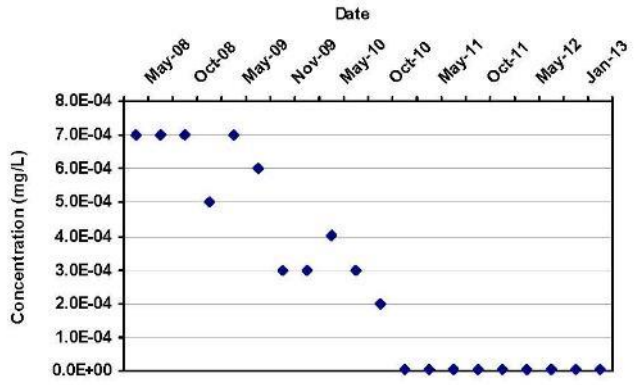
MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well: MW-44S
Well Type: T
COC: VINYL CHLORIDE

Time Period: 5/9/2008 **to** 1/21/2015
Consolidation Period: No Time Consolidation
Duplicate Consolidation: Median
Consolidation Type: Average
ND Values: 1/2 Detection Limit
J Flag Values : Actual Value



Mann Kendall S Statistic:
-137

Confidence in Trend:
100.0%

Coefficient of Variation:
1.05

Mann Kendall Concentration Trend: (See Note)
D

Data Table:

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	5/13/2008	VINYL CHLORIDE	7.0E-04		1	1
MW-44S	T	8/19/2008	VINYL CHLORIDE	7.0E-04		1	1
MW-44S	T	10/27/2008	VINYL CHLORIDE	7.0E-04		1	1
MW-44S	T	2/6/2009	VINYL CHLORIDE	5.0E-04		1	1
MW-44S	T	5/8/2009	VINYL CHLORIDE	7.0E-04		1	1
MW-44S	T	7/31/2009	VINYL CHLORIDE	6.0E-04		1	1
MW-44S	T	11/16/2009	VINYL CHLORIDE	3.0E-04		1	1
MW-44S	T	2/18/2010	VINYL CHLORIDE	3.0E-04		1	1
MW-44S	T	5/18/2010	VINYL CHLORIDE	4.0E-04		1	1

MAROS Version 3.0
Release 352, September 2012

Wednesday, January 06, 2016
Page 1 of 2

MAROS Mann-Kendall Statistics Summary

Project: Purity Oil Sales | User Name: Blair C Kinser

Location: Malaga | State: California

Well	Well Type	Effective Date	Constituent	Result (mg/L)	Flag	Number of Samples	Number of Detects
MW-44S	T	8/10/2010	VINYL CHLORIDE	3.0E-04		1	1
MW-44S	T	10/25/2010	VINYL CHLORIDE	2.0E-04		1	1
MW-44S	T	2/23/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	5/16/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	8/11/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	10/26/2011	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	2/14/2012	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	5/10/2012	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	7/23/2012	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	1/30/2013	VINYL CHLORIDE	5.0E-06	ND	1	0
MW-44S	T	7/18/2013	VINYL CHLORIDE	5.0E-06	ND	1	0

Note: Increasing (I); Probably Increasing (PI); Stable (S); Probably Decreasing (PD); Decreasing (D); No Trend (NT); Not Applicable (N/A) - Due to insufficient Data (< 4 sampling events); ND = Non-detect

Appendix C: ARAR Assessment

Section 121(d)(1)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires that remedial actions at CERCLA sites attain (or justify the waiver of) any federal or state environmental standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and appropriate requirements (ARARs). Federal ARARs may include requirements promulgated under any federal environmental laws. State ARARs may only include promulgated, enforceable environmental or facility siting laws of general application that are more stringent or broader in scope than federal requirements and that are identified by the state in a timely manner. ARARs are identified on a -site-specific- basis from information about the chemicals at the site, the remedial actions contemplated, the physical characteristics of the site, and other appropriate factors. ARARs include only substantive, not administrative, requirements and pertain only to on-site activities. There are three general categories of ARARs: chemical-specific, location-specific, and action-specific.

Chemical-specific ARARs identified in the selected remedy within the Record of Decision (ROD) and subsequent ROD Amendments for the groundwater at this Site and considered for this Five-Year Review (FYR) for continued groundwater treatment are shown in Table C-1. None of the site contaminants of concern (COCs) have cleanup goals that exceed the current Maximum Contaminant Level (MCL).

Table C-1: Summary of Groundwater ARAR Changes

Contaminant of Concern	1989 ROD cleanup goal (µg/L)	State MCL (µg/L)	Federal MCL (µg/L)	Is the cleanup goal above the current MCL?
1,1-DCA	5	5	5	No
1,1-DCE	6	6	7	No
1,2-DCA	0.5	0.5	5	No
Arsenic[1]	10	--	10	No
cis-1,2-DCE	6	6	70	No
trans-1,2-DCE	10	10	100	No
benzene	1	1	5	No
carbon tetrachloride	0.5	0.5	6	No
iron	300	--	300[2]	No
manganese	50	--	50[2]	No
trichloroethylene	5	5	5	No
vinyl chloride	0.5	0.5	3	No

[1]As included in the OU-1 ROD Amendment

[2] Federal secondary MCL

A chemical-specific ARAR for soils is presented in Table C-2. No current federal or state regulations exist for pH in soils for comparison of this ARAR.

Table C-2: Summary of Soil ARAR Changes

Contaminant of Concern	2006 ROD Amendment ARAR	Current Regulation	ARARs Changed?
pH	<5[1]	N/A	N/A

[1]Design required cleanup level for cap liner.

No federal and state laws and regulations other than the chemical-specific ARARs that have been promulgated or changed over the past five years were identified that would affect the protectiveness of the remedy at the Purity Oil Site.

The following ARARs were noted to have no amendments during the period of review and therefore did not impact the protectiveness of the remedy:

- Landfill Closure and Post-Closure Care (22 CCR 66264.310)
- Porter-Cologne Water Quality Act (Water Code Division 7 and Related Sections)
- Construction and Operation Requirements for Waste Management Units (CCR Title 23, Division 3, Sections 2540-2559, 2580-260)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. Subchapter 1 Section 9602 and 9621
- Resource Conservation and Recovery Act (RCRA) of 1976, amended by the Hazardous and Solid Waste amendments of 1984 (RCRA or HSWA). Title 42 Chapter 82
- Clean Water Act (CWA) (33 USC 1251-1376; 40 CFR 100-199)
- Permitted Hazardous Waste Facilities (22 CCR 66264.10, 15, 19, 25)
- Closure and Post-Closure (22 CCR 66261.110-120)
- California Water Code Section 13750-13755 (I) California Safe Drinking Water Act – California Health and Safety Code Section 4010-4037 and CCR Title 22, Section 64401

ARARs that have had amendments or additions are presented in Table C-.

Table C-3: Applicable or Relevant and Appropriate Requirements Evaluation

Original ARAR	Document	Original ARAR requirement	Revised Requirement	Revision Date (between Sept. 2011-present)	Effect on Protectiveness
Land Treatment Unsaturated Zone Monitoring and Groundwater Protection (22 CCR 66264.90-101)	1992 ROD	There are three types of groundwater monitoring for treatment and storage facilities required under RCRA: detection monitoring, compliance monitoring and corrective action monitoring. The groundwater monitoring program must be designed and operated to verify that hazardous constituents have not migrated beyond the outer containment layer.	Repeal of subsection (e) and new subsections (e)-(h) and amendment of subsection (b)(1) in section 66264.94	Amendment filed 2011	Reviewed amendments have no impact on protectiveness
			Amendment of subsection (b)(3), new subsections (b)(8) and (c)(3), amendment of subsections (d)(1) and (d)(4)-(5), new subsection (d)(7), amendment of subsections (e)(4), (e)(6), (e)(8)(E)3., (e)(8)(E)6., (e)(9)(E) and (e)(12)(B)-(e)(15) and amendment of note filed 2011 in section 66264.94	Amendment filed 4-16-2014; operative 7-1-2014 (Register 2014, No. 16)	
Hazardous Waste Control Act (HWCA) (Health and Safety Code Section 25100-25395)	1989/1992 ROD	HWCA provides the California state law for the management of hazardous waste including the state criteria for the identification of hazardous waste and standards for the design, operation, and closure of hazardous waste treatment, storage, and disposal facilities.	Amendment of subsections (b)(1) and (b)(2) section 25302	N/A	Reviewed amendments and new subsections have no impact on protectiveness
			Amendment in section 25304	Amendment filed 4-16-2014; operative 7-1-2014 (Register 2014, No. 16)	
			New subsections (a)(6) and (b)(6) and amendment of in section 25305	Note filed 7-12-2012; operative 8-11-2012 (Register 2012, No. 28)	

Original ARAR	Document	Original ARAR requirement	Revised Requirement	Revision Date (between Sept. 2011-present)	Effect on Protectiveness
Article 6. Water Quality Monitoring and Response Programs for Permitted Facilities (22 CCR 66264.90-101)	1992 ROD 2006 ROD Amendment	This article contains the requirements for the environmental monitoring of air, soil, and water for on-site facilities that treat, store, or dispose of hazardous waste.	Repeal of subsection (e) and new subsections (e)-(h) and in section 66264.90	Amendment of Note filed 4-12-2011; operative 5-12-2011 (Register 2011, No. 15)	Reviewed amendments have no impact on protectiveness
DTSC Land Use covenant CCR Title 22, Section 67391.1 (d)	2012 ROD Amendment	A land use covenant imposing appropriate limitations on land use shall be executed and recorded when: hazardous materials, hazardous wastes or constituents, or hazardous substances will remain at the property at levels which are not suitable for unrestricted use of the land.	Change without regulatory effect amending subsections (b) and (d). Pursuant to section 100, title 1, California Code of Regulations (Register 2013, No. 2)	Note filed 1-7-2013	Reviewed amendments have no impact on protectiveness

Appendix D: Institutional Control Assessment

No institutional control assessment was conducted for this FYR.

Appendix E: Human Health and the Environment Risk Assessment

E.1. Human Health Risk Assessment Review

Human health risk assessments were completed for the Site as part of the 1989 Record of Decision (ROD), 1992 ROD, and 2006 ROD Amendment. The risk assessments were reviewed to identify any changes in exposure or toxicity that would impact protectiveness. Risk exposures identified in the 1989 ROD include: drinking and direct contact of contaminated groundwater, direct contact with contaminated site soils, direct contact with contaminated surface water in the canal and sediments of the canal, and inhalation of site dusts by near-site residents or workers. Risk exposures identified in the 1992 ROD included a more detailed risk assessment of soils, buried waste, and canal sediments. The risk assessment summarized in the 2006 ROD Amendment presented risks from exposure to contaminants on the surrounding properties under the then current and potential future land use scenarios. Exposures presented in the 2006 ROD Amendment included: incidental ingestion, dermal contact, and inhalation of particulate and volatile chemicals released from soil and ambient air.

No new exposure pathways have been identified during the review period of this Five-Year Review (FYR). No methodology of assessing risks have been identified that would affect the protectiveness of the remedy.

E.1.1. Toxicity Values

EPA's Integrated Risk Information System (IRIS) has a program to update toxicity values used by the agency in risk assessment when newer scientific information becomes available. In the past five years, there have been a number of changes to the toxicity values for many contaminants of concern (COCs) at the Site. EPA has updated the toxicity assessment for TCE since the last five year review, reclassifying TCE as a human carcinogen and increased the non-cancer potency factor nearly threefold due to identified concern with fetal cardiac malformation.

To evaluate the protectiveness of the cleanup standards for this FYR, those standards were compared to EPA's current Regional Screening Levels (RSLs). The RSLs for cancer are chemical-specific concentrations for individual contaminants that correspond to an excess cancer risk level of $1x10^{-6}$ (or a Hazard Quotient (HQ) of 1 for non-carcinogens), and they have been developed for a variety of exposures scenarios (e.g., commercial/industrial). RSLs are not de facto cleanup standards for a Superfund site, but they do provide a good indication of whether actions may be needed to address potential human health exposures. The EPA cancer risk range is between $1x10^{-6}$ and $1x10^{-4}$. RSL values that fall within this range were determined to be acceptable from a risk standpoint. The non-cancer RSLs correspond to a hazard index of 1. Table E-1, and Table E-2, present comparisons of the RSL to the site cleanup levels.

Any concentration below the cancer RSL indicates that cancer risk is low, while concentrations significantly above the cancer RSL may indicate an increase in cancer risk. The groundwater cleanup levels at the Purity Oil Site are within the protective cancer risk range and are below the non-cancer RSLs

except for trichloroethene. Trichloroethene has a cleanup level above the Tap Water RSL for non-cancer hazard but has been noted for having concentrations below cleanup levels (Appendix B). However, because there is currently no exposure pathway for this constituent, the cleanup levels as seen in Table E-1 for the Purity Oil Site are protective.

The toxicity assessment for industrial soil indicated that only a few COCs had cleanup levels that were above the cancer or non-cancer RSL values. The COCs noted to have no cleanup levels while cancer RSL values do exist were 1,2,4-trichlorobenzene, ethylbenzene, nickel, and heptachlor epoxide; each have a protective cancer risk range of 110-11,000, 25-2,500, 69,000-6,900,000, and 0.63-63 mg/kg respectively. Arsenic also does not have a non-cancer cleanup level while a non-cancer RSL does exist. In addition, the following COCs had non-cancer cleanup levels above RSL non-cancer values: anthracene, cobalt, cyanide, mercury, methylene chloride, pyrene, thallium, and trichloroethene. Although these COCs have cleanup levels above the noted RSL values the cleanup levels are protective since exposures do not exist and are eliminated due to the excavation of contaminated soils as well as the construction and maintenance of the on-site cap.

E.1.2 Vapor Intrusion

EPA has developed a spreadsheet tool, the Vapor Intrusion Screening Level (VISL) Calculator, that identifies chemicals considered to be sufficiently volatile and sufficiently toxic through the inhalation pathway; and provides screening levels to assess whether chemicals found in soil gas or ground water can pose a significant risk through vapor intrusion; and, if so, whether a site-specific vapor intrusion investigation is warranted.

At the Purity Oil site, the most recent groundwater data indicate that concentrations of volatile COCs in groundwater are below the VISLs for groundwater concentrations for an occupational exposure scenario. The most recent soil gas data indicate that concentrations of volatile COCs in soil gas exceed the VISLs for soil gas concentrations for an occupational exposure scenario in soil vapor monitoring points located in the middle of the capped area of the Site (VM-1, SV-1, SV-3, and SV-6). These soil vapor monitoring points were sampled following the December 18, 2015 shut down of the SVE system for the rebound study. Historically, these vapor monitoring points have had the highest reported concentrations of TCE. The results show that concentrations of TCE at 29 feet bgs ranged from 300 ppbV to 1200 ppbV. However, there are no buildings on-site or within 100 feet of the property boundary. On-site construction of buildings is not a reasonably anticipated future use due to the presence of the cap. Adjacent properties are zoned for industrial use. Therefore, there is currently no risk of vapor intrusion from groundwater or soil gas at the Site.

In addition, operation of the SVE system has prevented soil vapor from migrating to adjacent properties. Currently, the operation of the SVE system has been suspended for the duration of the rebound study. Based on the results of the rebound study, EPA will determine if SVE system operation will resume.

The OU-2 ROD Amendment requires additional soil and soil gas sampling on adjacent properties for the purposes of determining the potential for vapor intrusion effects from residual VOCs in the subsurface. This sampling will be performed upon completion of the SVE system operation. Based on the results of the sampling, EPA will re-evaluate the vapor intrusion pathway.

E.2. Ecological Review

No ecological risk assessment was summarized in the 1989 or 1992 RODs because the Site and the surrounding areas did and do not provide habitat for or sustain any rare or endangered species of plant or animal. No signs of any significant wildlife or vegetation on the Site itself exist. The Site does not pose a risk to critical habitats or animal and plant species because there are no complete exposure pathways to these receptors as stated in the 2006 ROD Amendment.

Gophers were identified as a possible ecological exposure pathway; however, the gophers as identified in Appendix B Section B.3 are assumed to burrow no deeper than 4 to 18 inches. Given this depth, it is assumed that the gophers that were located on-site were not exposed to any contaminated soil. Since the gophers were not an exposure pathway to other animals and have been removed they were not considered a receptor and possible exposure pathway to predators. No other new ecological exposure pathways have been identified during this FYR period.

Table E-1: Comparison of 2016 Tap Water RSLs to ROD Groundwater Cleanup Standards

Contaminant of Concern	2016 Tap Water RSL for Cancer Risk (µg/L)	Protective Cancer Risk Range (µg/L)	2016 Tap Water RSL for Non-Cancer Hazard (µg/L)	Cleanup Standard (µg/L)	Is the Cleanup Standard still Protective?
Benzene	0.15[a]	0.15 - 15	5.7	1	Yes
Carbon Tetrachloride	0.11	0.11 - 11	36[a]	0.5	Yes
1,1-Dichloroethane	2.7	2.7 - 270	1200[a]	5	Yes
1,2-Dichloroethane	0.17	0.17 - 17	13	0.5	Yes
1,1-Dichloroethene	--	--	280	6	Yes
cis-1,2-Dichloroethene	--	--	36	6	Yes
trans-1,2-Dichloroethene	--	--	360	10	Yes
Trichloroethene	0.49	0.49 - 49	2.8	5	Yes[1]
Vinyl Chloride	0.019	0.019 - 1.9	44	0.5	Yes
Iron	--	--	14,000	300	Yes
Manganese	--	--	430	50	Yes

[a] California DTSC Human Health Risk Assessment Note 3 Jan 2016, Cal modified RSLs
[1]Though the non-cancer PRG/cleanup level is higher than the non-cancer 2016 RSL value for the constituent, no exposure pathway exists. Therefore, the cleanup level is protective.

Table E-2: Comparison of May 2016 Industrial Soil RSLs to ROD Cleanup Standards

Contaminant of Concern	2016 Industrial Soil RSL for Cancer (mg/kg)	Protective Cancer Risk Range (mg/kg)	2016 Industrial Soil RSL for Non-Cancer Hazard (mg/kg)	Cleanup Level (mg/kg)		Is the Cleanup Standard still Protective?
				Industrial PRG		
				Cancer	Non-cancer	
1,1,1-trichloroethane	--	--	36,000	--	6,900	Yes
1,1,2,2-tetrachloroethane	2.7	2.7 - 270	6.3	0.93	23,000	Yes
1,2,4-trichlorobenzene	110	110 - 11,000	260	--	220	Yes[1]
1,2-dichlorobenzene	--	--	9,300	--	4,100	Yes
1,2-dichloroethene-*cis*	--	--	2,300	--	150	Yes
1,4-dichlorobenzene	11	11 - 1,100	25,000	7.9	10,000	Yes
2-butanone	--	--	190,000	--	110,000	Yes
2-methylnaphthalene	--	--	3,000	4.2	190	Yes
4,4'-DDD	9.6	9.6 - 960	--	10	--	Yes
4,4'-DDE	9.3	9.3 - 930	--	7	--	Yes
4,4'-DDT	8.5	8.5 - 850	520	7	430	Yes
4-Methyl-2-pentanone	--	--	140,000	--	47,000	Yes
Acetone	--	--	670,000	--	54,000	Yes
Aldrin	0.18	0.18 - 18	35	0.1	18	Yes
Alpha-BHC	0.36	0.36 - 36	6,600	0.36	400	Yes
Alpha-Chlordane	7.7	7.7 - 770	450	6.5	400	Yes
Aluminum	--	--	1,100,000	--	920,000	Yes
Anthracene	--	--	230,000	--	240,000	Yes[1]
Antimony	--	--	470	--	410	Yes
Aroclor 1016	27	27 - 2,700	51	21	37	Yes
Aroclor 1242	0.95	0.95 - 95	--	0.74	11	Yes
Aroclor 1254	0.97	0.97 - 97	15	0.74	11	Yes
Aroclor 1260	0.99	0.99 - 99	--	0.74	11	Yes
Arsenic	3	3 - 300	480	0.25	--	Yes
Barium	--	--	220,000	--	6,700	Yes
Benzene	5.1	5.1 - 510	420	1.4	120	Yes
Benzo(A)anthracene	2.9	2.9 - 290	--	2.1	--	Yes
Benzo(a)pyrene	0.29	0.29 - 29	--	0.21	--	Yes
Benzo(b)fluoranthene	2.9	2.9 - 290	--	2.1	--	Yes
Benzo(g,h,i)perylene	--	--	--	--	29,000	Yes

Contaminant of Concern	2016 Industrial Soil RSL for Cancer (mg/kg)	Protective Cancer Risk Range (mg/kg)	2016 Industrial Soil RSL for Non-Cancer Hazard (mg/kg)	Cleanup Level (mg/kg)		Is the Cleanup Standard still Protective?
				Industrial PRG		
				Cancer	Non-cancer	
Benzo(k)fluoranthene	29	29 – 2,900	--	1.3	--	Yes
Beryllium	6,900	6,900 - 690,00	2,300	2,200	1,900	Yes
Beta-BHC	1.3	1.3 - 130	--	1.3	160	Yes
Bromomethane	--	--	30	--	13	Yes
Cadmium	9,300	9,300 - 930,000	980	3,000	450	Yes
Carbon disulfide	--	--	3,500	--	1,300	Yes
Chlorobenzene	--	--	1,300	--	530	Yes
Chromium, Total	--	--	--	--	150,000	Yes
Chrysene	290	290 - 29,000	--	13	--	Yes
cis-1,2-Dichloroethene	--	--	2,300	--	150	Yes
Cobalt	1,900	1,900 - 190,000	350	1,900	13,000	Yes[1]
Copper	--	--	47,000	--	41,000	Yes
Cyanide	--	--	150	--	240,000	Yes[1]
Dibenz(a,h)anthracene	0.29	0.29 - 29	--	0.21	--	Yes
Dibenzofuran	--	--	1,000	21	37	Yes
Dieldrin	0.14	0.14 - 14	41	0.74	11	Yes
Endosulfan	--	--	7,000	0.74	3,700	Yes
Endrin	--	--	250	0.74	180	Yes
Ethylbenzene	25	25 - 2,500	20,000	--	7,400	Yes[1]
Fluoranthene	--	--	30,000	--	22,000	Yes
Fluorene	--	--	30,000	1.4	26,000	Yes
Gamma-BHC (Lindane)	2.5	2.5 - 250	300	2.1	240	Yes
Gamma-Chlordane	7.5	7.5 - 750	420	0.21	400	Yes
Heptachlor	0.63	0.63 - 63	580	2.1	310	Yes
Heptachlor epoxide	0.33	0.33 - 33	15	--	8	Yes[1]
Indeno(1,2,-3-cd)pyrene	2.9	2.9 - 290	--	1.3	--	Yes
Iron	--	--	820,000	--	300,000	Yes
Lead	--	--	800	--	800	Yes
m -Xylene	--	--	2,400	--	900	Yes
p-xylene	--	--	2,400		2,400	Yes
Manganese	--	--	26,000	--	19,000	Yes
Mercury	--	--	46	--	310	Yes[1]

Contaminant of Concern	2016 Industrial Soil RSL for Cancer (mg/kg)	Protective Cancer Risk Range (mg/kg)	2016 Industrial Soil RSL for Non-Cancer Hazard (mg/kg)	Cleanup Level (mg/kg)		Is the Cleanup Standard still Protective?
				Industrial PRG		
				Cancer	Non-cancer	
Methoxychlor	--	--	4,100	--	3,000	Yes
Methylene chloride	1,000	1,000 - 100,000	3,200	21	9,300	Yes[1]
Molybdenum	--	--	5,800	--	5,100	Yes
Naphthalene	17	17 - 1,700	590	4.2	190	Yes
Nickel	69,000	69,000 - 6,900,000	22,000	--	20,000	Yes[1]
o-Xylene	--	--	2,800	--	900	Yes
Phenanthrene	--	--	--	--	24,000	Yes
Pyrene	--	--	23,000	--	29,000	Yes[1]
Selenium	--	--	5,800	--	5,100	Yes
Silver	--	--	5,800	--	5,100	Yes
Tetrachloroethene	100	100 - 10,000	390	1.3	130	Yes
Thallium	--	--	12	--	67	Yes[1]
Toluene	--	--	47,000	--	2,200	Yes
TPH (Aromatic High)	--	--	33,000	--	10,000	Yes
Trichloroethene	6	6 - 600	19	0.11	110	Yes[1]
Vanadium	--	--	5,800	--	1,000	Yes
Xylenes	--	--	2,500	--	900	Yes
Zinc	--	--	350,000	--	310,000	Yes

[1]Though the non-cancer PRG/cleanup level is higher than the non-cancer 2016 RSL value for the constituent, no exposure pathway exists. Therefore, the cleanup level is protective.

Appendix F: Press Notice

don't move too quickly. Timing is everything. Don't appear to be too anxious to get the sale (money). Proper set up will breed a long-term relationship (more money) instead of just a sale.

2. Arrange a three-way call, then a three-way meeting. Setting the stage for the first meeting/communication can make it or break it. All three people together will set the perfect stage. Your customer will sing your praises and help make the sale in front of the referral.

3. Connect socially. LinkedIn, and the entire suite of social media. Subscribe to whatever — their blog or ezine. And keep in mind when they see you connect, they will do the same. Rule one: Be at least one notch higher in social profile than children's schools, hometown. Having their personal information is an advantage. Having web presence is an advantage. Not having personal information is a fatal mistake.

5. You don't have to sell at the first meeting if your customer is with you. In fact, the less selling you do, the more credible you will appear. You only have to establish rapport, gain confidence, and arrange a second, private meeting where you can get down to business.

6. Try to get the prospect to prepare information for your private meeting. If you can get the prospect to gather and/or compile information, you have an interested prospect who will be willing to talk and listen.

7. Don't send too much information in the mail or email. The mail and the referral. This rule is the most important of all. It's a breeding ground for your relationship AND your reputation. What kind of reputation have you got?

How valuable are real referrals? One third-party introduction and endorsement is worth a hundred presentations, if you know what you're doing.

Jeffrey Gitomer is the author of twelve best-selling books including The Sales Bible, The Little Red Book of Selling, and The Little Gold Book of Yes! Attitude. His real-world ideas and content are also available as online courses at www.GitomerLearningAcademy.com. For information about training and seminars visit www.Gitomer.com or www.Gitomer-CertifiedAdvisors.com, or email Jeffrey personally at salesman@gitomer.com.

Rodney's sudden passing in March 2015.

"I got emotional thinking that Rodney should be up there," Pryce said. "He took great pride in customer service. I've worked in customer service forever and thought I knew a lot, but when I came to Madera Pharmacy, I learned what it is all about."

The Good Neighbor Pharmacy motto is "Locally owned. Locally operated. Locally loved." This, Pryce said, is how Rodney Melikian ran his pharmacy — he loved his customers.

"Locally loved means a great deal," Pryce said. "It is what sets a good business apart from the rest. It's that you feel you are making a difference in people's lives."

Melikian said her father also showed his commitment to customers by being innovative and keeping up with the latest technology and equipment to best serve both customers in the store and those who have their prescriptions delivered.

"We are more than just a retail pharmacy; we cater to the residential area as well," Melikian said. "We deliver medications to residents in Madera and those in Fresno, Chowchilla and other areas. We service many of the senior living facilities like Cottonwood Court and Cedarbrook, where we deliver medic[illegible] employ[illegible] automa[illegible]

It is a big operation that dad built."

After Rodney's passing, Melikian said she, her mother and her brother knew they had to keep the pharmacy going. Although both she and her brother have jobs in other industries, taking on ownership of the pharmacy is something they knew they wanted to do to keep Madera Medical locally owned and to continue their father's legacy.

"I saw how many lives he had touched through this pharmacy and I always knew that this was his baby," Melikian said.

To be nominated for such a prestigious award is an honor to Rodney's memory, Melikian said. She only wishes her father were here to celebrate the accomplishment.

"It truly means a lot to me that my father's pharmacy has been nominated," Melikian said. "He did this for so long and we're just carrying on his legacy and doing this for him. It feels almost bittersweet because he is not here. I'm truly touched that we're a finalist."

The winner of Good Neighbor Pharmacy of the Year will be determined by votes. Those who would like to vote for Madera Medical Pharmacy can go online at http://www.mygnp.com/pharmacy-of-the-year. The last day to vote is July 24. The winner will be announced on [illegible]

[illegible]eporter can be reached at:
[illegible]ie@thebusinessjournal.com

U.S. EPA CONDUCTING FOURTH REVIEW OF CLEANUP AT THE PURITY OIL SALES, INC. SUPERFUND SITE

The U.S. Environmental Protection Agency (EPA) is conducting a fourth Five-Year Review (FYR) of the cleanup remedies at the Purity Oil Sales, Inc. Superfund Site (Site) in Fresno, CA. This review will evaluate the effectiveness of the soil and groundwater cleanup remedies at the Site.

If a cleanup takes more than five years to complete or hazardous wastes remain on the Site, Superfund law requires a review every five years. The purpose of this fourth FYR is to determine whether the remedies continue to be protective. The third FYR, conducted in 2011, found the cleanup remedies to be protective. EPA invites the community to learn more about this process. If you have information to contribute, please call Patricia Bowlin, Remedial Project Manager at (415) 972-3177 or email her at bowlin.patricia@epa.gov.

EPA maintains repositories that contain the Site's Administrative Records and other relevant information at the Fresno County Central Library, 2420 Mariposa Street, Fresno, CA and the EPA Regional Records Center in San Francisco, CA. The final Fourth FYR report will be available to the public after September 30, 2016 at the repositories above and on EPA's web page: http://www.epa.gov/superfund/purityoil

8/5/2016 - Fresno Business Journal

Appendix G: Site Inspection Checklist

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Purity Oil Sales	**Date of inspection:** 1/25/16
Location: 3281 South Maple Avenue, Fresno, CA	**EPA ID:** CAD 980736151
Agency, office, or company leading the five-year review: EPA Region 9	**Weather/temperature** Overcast/46F Morning Partly Sunny/53F Noon

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☐ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☒ Other: *e.g. Groundwater monitoring*

  Soil Vapor Extraction
- ☒ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☒ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

■ O&M manual	■ Readily available	■ Up to date	☐ N/A
■ As-built drawings	■ Readily available	■ Up to date	☐ N/A
■ Maintenance logs	■ Readily available	■ Up to date	☐ N/A

Remarks

2. **Site-Specific Health and Safety Plan** ■ Readily available ■ Up to date ☐ N/A
■ Contingency plan/emergency response plan ■ Readily available ■ Up to date ☐ N/A
Remarks

3.	**O&M and OSHA Training Records**	■ Readily available	☐ Up to date	☐ N/A
	Remarks O&M and OSHA Training Records are kept at office 20 minutes away.			
4.	**Permits and Service Agreements**			
	■ Air discharge permit	■ Readily available	☐ Up to date	☐ N/A
	■ Effluent discharge	■ Readily available	☐ Up to date	☐ N/A
	■ Waste disposal, POTW	■ Readily available	■ Up to date	■ N/A
	☐ Other permits_____	☐ Readily available	☐ Up to date	■ N/A
	Remarks Updates of Air discharge permit and effluent discharge are needed on site. The site O&M manager is planning to update all records noted not to be updated.			
5.	**Gas Generation Records**	☐ Readily available	■ Up to date	■ N/A
	Remarks			
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	■ N/A
	Remarks			
7.	**Groundwater Monitoring Records**	■ Readily available	☐ Up to date	☐ N/A
	Remarks			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☐ N/A
	Remarks			
9.	**Discharge Compliance Records**			
	☐ Air	■ Readily available	☐ Up to date	■ N/A
	☐ Water (effluent)	■ Readily available	■ Up to date	☐ N/A
	Remarks Water discharge reports are required quarterly.			
10.	**Daily Access/Security Logs**	■ Readily available	■ Up to date	■ N/A
	Remarks			

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
☐ PRP in-house ■ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☐ Other Santec - maintains cap, storm water system, and fence. Leibos - operates and maintains the SVE system.

2. **O&M Cost Records**

■ Readily available ■ Up to date ☐ Funding mechanism/agreement in place
Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From 2015 (Date)	To 2016 (Date)	$200,000 (Total cost)	☐ Breakdown attached
From _____ (Date)	To _____ (Date)	_____ (Total cost)	☐ Breakdown attached
From _____ (Date)	To _____ (Date)	_____ (Total cost)	☐ Breakdown attached
From _____ (Date)	To _____ (Date)	_____ (Total cost)	☐ Breakdown attached
From 2011 (Date)	To 2012 (Date)	$400,000 (Total cost)	☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons:

None noted. Cost have declined with reduction in sampling.

V. ACCESS AND INSTITUTIONAL CONTROLS ■ Applicable ■ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured ☐ N/A

Remarks In a few spots the fence was noted to be damaged. Although damage is minimal in noted areas on site location map. Photos enclosed.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks Signs were noted throughout the perimeter of the site. Security measure include fencing with barbed wire fencing.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☐ No ■ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ■ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____ _____ _____ _____

Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ■ N/A

Reports are verified by the lead agency ☐ Yes ☐ No ■ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ■ N/A

Violations have been reported ☐ Yes ☐ No ■ N/A

Other problems or suggestions: ☐ Report attached

Currently there is a larger IC in place for groundwater use restrictions in the area in place by Malage Water District and Fresno County. The site is owned by the County who needs to place land use restrictions on the site.

2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ■ N/A

Remarks

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ■ No vandalism evident

Remarks Just fence damage as noted above.

2. **Land use changes on site** ☐ N/A

Remarks None planned in the future

3. **Land use changes off site** ☐ N/A

Remarks None planned in the future.

VI. GENERAL SITE CONDITIONS

A. Roads ■ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ■ Roads adequate ☐ N/A

Remarks Gravel road ontop of cap is in good shape. May need to expand gravel road to the west side near wells as ruts were noted from the most recent sampling event.

B. Other Site Conditions

Remarks

None

VII. LANDFILL COVERS ■ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ■ Settlement not evident
   Areal extent_____ Depth_____
   Remarks

2. **Cracks** ☐ Location shown on site map ■ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks

3. **Erosion** ☐ Location shown on site map ■ Erosion not evident
   Areal extent_____ Depth_____
   Remarks

4. **Holes** ☐ Location shown on site map ■ Holes not evident
   Areal extent_____ Depth_____
   Remarks

5. **Vegetative Cover** ☐ Grass ■ Cover properly established
   ☐ No signs of stress ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks

6. **Alternative Cover (armored rock, concrete, etc.)** ■ N/A
   Remarks

7. **Bulges** ☐ Location shown on site map ■ Bulges not evident
   Areal extent_____ Height_____
   Remarks

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident

☐ Wet areas	☐ Location shown on site map	Areal extent_____
■ Ponding	☐ Location shown on site map	Areal extent_____
☐ Seeps	☐ Location shown on site map	Areal extent_____
☐ Soft subgrade	☐ Location shown on site map	Areal extent_____

Remarks Ponding seen at evapotranspiration pond as expected after rainfall.

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ■ No evidence of slope instability
Areal extent_____
Remarks

B. Benches ☐ N/A ☐ Applicable

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ■ N/A or okay
Remarks

2. **Bench Breached** ☐ Location shown on site map ■ N/A or okay
Remarks

3. **Bench Overtopped** ☐ Location shown on site map ■ N/A or okay
Remarks

C. Letdown Channels ☐ Applicable ☐ N/A

(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ■ No evidence of settlement
Areal extent_____ Depth_____
Remarks

2. **Material Degradation** ☐ Location shown on site map ■ No evidence of degradation
Material type_____ Areal extent_____
Remarks

3. **Erosion** ☐ Location shown on site map ■ No evidence of erosion
Areal extent_____ Depth_____
Remarks

4. **Undercutting** ☐ Location shown on site map ■ No evidence of undercutting
Areal extent_____ Depth_____
Remarks

5. **Obstructions** Type_____ ■ No obstructions ☐ Location shown on site map
Areal extent_____ Size_____
Remarks

6. **Excessive Vegetative Growth** Type_____
■ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks

D. Cover Penetrations ■ Applicable ☐ N/A

1. **Gas Vents** ■ N/A ☐ Active ☐ Passive ☐ Properly secured/locked ☐ Functioning
☐ Routinely sampled ☐ Good condition ☐ Evidence of leakage at penetration
Remarks

2. **Gas Monitoring Probes**
■ Properly secured/locked ■ Functioning ■ Routinely sampled ■ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

3. **Monitoring Wells** (within surface area of landfill)
■ Properly secured/locked ■ Functioning ■ Routinely sampled ■ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ■ N/A
Remarks

5. **Settlement Monuments** ■ Located ■ Routinely surveyed ☐ N/A
Remarks

E. Gas Collection and Treatment ■ Applicable ☐ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ■ Good condition ☐ Needs Maintenance
   Remarks Vapors pushed through Granular Activated Carbon.

2. **Gas Collection Wells, Manifolds and Piping**
   ■ Good condition ☐ Needs Maintenance
   Remarks

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ■ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks

F. Cover Drainage Layer ■ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ■ Functioning ☐ N/A
   Remarks

2. **Outlet Rock Inspected** ■ Functioning ☐ N/A
   Remarks

G. Detention/Sedimentation Ponds ■ Applicable ☐ N/A

1. **Siltation** ■ N/A ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks

2. **Erosion** Areal extent_____ Depth_____ ■ Erosion not evident
   Remarks

3. **Outlet Works** ☐ Functioning ■ N/A
   Remarks

4. **Dam** ☐ Functioning ■ N/A
   Remarks

H. Retaining Walls ☐ Applicable ☒ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks

I. Perimeter Ditches/Off-Site Discharge ☒ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☒ Siltation not evident
   Areal extent_____ Depth_____
   Remarks

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☒ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks Vegetation is found within the ditch to slow down flow.

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
   Areal extent_____ Depth_____
   Remarks

4. **Discharge Structure** ☐ Functioning ☒ N/A
   Remarks

VIII. VERTICAL BARRIER WALLS ☒ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored ☐ Evidence of breaching
   Frequency_____ Head differential_____
   Remarks

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable ☒ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☒ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☐ Good condition ☐ All required wells properly operating ☐ Needs Maintenance ☒ N/A
   Remarks Not used since 2008.

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition ☐ Needs Maintenance
Remarks N/A

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks N/A

B. Surface Water Collection Structures, Pumps, and Pipelines ☒ Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
☒ Good condition ☐ Needs Maintenance
Remarks

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☒ Good condition ☐ Needs Maintenance
Remarks

3. **Spare Parts and Equipment**
☒ Readily available ☒ Good condition ☐ Requires upgrade ☐ Needs to be provided
Remarks

C. Treatment System ☒ Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☒ Carbon adsorbers
☐ Filters_____
☐ Additive (*e.g.*, chelation agent, flocculent)_____
☐ Others_____
☒ Good condition ☐ Needs Maintenance
☒ Sampling ports properly marked and functional
☒ Sampling/maintenance log displayed and up to date
☒ Equipment properly identified
☐ Quantity of groundwater treated annually_____
☐ Quantity of surface water treated annually_____
Remarks SVE system

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☐ Good condition ☐ Needs Maintenance
Remarks

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ■ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
Remarks

4. **Discharge Structure and Appurtenances**
☐ N/A ■ Good condition ☐ Needs Maintenance
Remarks

5. **Treatment Building(s)**
☐ N/A ■ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks

6. **Monitoring Wells** (pump and treatment remedy)
■ Properly secured/locked ■ Functioning ■ Routinely sampled ■ Good condition
■ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

D. Monitoring Data

1. Monitoring Data
■ Is routinely submitted on time ■ Is of acceptable quality

2. Monitoring data suggests:
■ Groundwater plume is effectively contained ■ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
■ Properly secured/locked ■ Functioning ■ Routinely sampled ■ Good condition
■ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The remedy is operating as designed.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

O&M procedures are being conducted to maintain the remedy so that it may continue to operate as needed. No significant issues with O&M were noted during the site visit.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

Degradation of vegetation from drought may occur but will recover as seen in this site visit. May need to drill additional wells due to continued groundwater level decline.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

SVE rebound study may end SVE operations and reduction in sampling will reduce cost significantly in the future.

Appendix H: Site Inspection Trip Report and Photos

Purity Oil Sales, Fresno, Ca

1. INTRODUCTION

a. Date of Visit: 1/25/2016

b. Location: 3281 South Maple Avenue

c. Purpose: A site visit was conducted to visually inspect and document the conditions of the remedy, the Site, and the surrounding area for inclusion into the Five-Year Review Report.

d. Participants: *List all attendees*

Blair Kinser	USACE, Environmental Engineer	206-764-6875
Patricia Bowlin	EPA Region 9, Remedial Project Manager	415-972-3177
Nathan Blomgren	Chevron, Project Manager	925-408-4889
William Slowik	Leidos, Project Manager	559-638-7655
Patrick Wooliever	TetraTech, Engineer	510-302-6240
Ralph Carson	Stantec, Senior Geologist	559-271-2650

2. SUMMARY

Prior to beginning the site visit walk Mr. Slowik provided a site safety briefing. The briefing lasted approximately 10 minutes and included precautions regarding local traffic, slip, trips, and falls, and awareness of head injuries. Mr. Carson then handed out the site visit check-in list which all the participants signed.

The walk around began at the SVE treatment plant. The plant looked in good condition and well kempt. No debris within the foot print of the plant was noticed. The treatment system was not running during the site visit and is planned not to run for the next 5 months to test for any rebound of soil gases on the Site. The only issue noted in regards to the SVE treatment system was minor rusting noted along the 4”-8” pipes of the system.

Once all the components of the SVE system were presented by Mr. Slowik the participants then walked on top of the cap. Monitoring wells and SVE wells were noted along the cap; all were noted to be in good condition. The cap was in good condition. No erosion or settlement was noted. Drainage ditches were in good condition with no erosion noted and designed vegetation was in place within the drainage ditches. No outlets or inlets were obstructed. Some fencing along the perimeter of the Site was noted on top of the cap and further investigated along the edge of the perimeter. The damage included a fence panel no longer attached to the fence post, 2 location where the fence running along the metal recycler (Bruno’s) had been

lifted up, and slight damage to the barbed wire along the top of the fence along the East boundary of the Site.

The southeast evapotranspiration basin did have some water retained within it after rainfall from the past 5-7 days. No rainfall or puddles were noted in the drainage ditches; therefore the stormwater system is operating as intended.

No other significant physical issues were identified during the site walk.

3. DISCUSSION

Currently the SVE system is not operating and a rebound work plan will be sent to Patricia Bowlin. The plan will describe how the soil vapor will be monitored during the time that SVE is not operating. If significant increases are detected SVE operation will continue. However, if no significant rebound occurs SVE operation will be halted until further need of remedial action is required. Results of the study may also result in focused SVE in location were significant rebound occurred. The purpose of this study is to optimize the remedy by increasing efficiency and decreasing cost.

Currently all the shallow wells on or near the Site are dry. This has resulted in less monitoring and sampling and decreased cost. Furthermore, an ESD for the groundwater remedy may be written to reevaluate the remedial goals of iron and manganese in the groundwater. The result of the ESD may include cleanup levels that are guided by regional screen levels.

If the system is planned to operate once more it is recommended that the pipes be refurbished and painted at the treatment plant.

Currently on-site institutional controls are in limbo since the county owns the property. Nathan of Chevron will be in contact with Chevron lawyers and the County of Fresno who owns the Site to determine whether the County will place land use covenants on the Site or if they would be willing to sell the land to Chevron who then can request the land use covenants be placed on the Site. Currently no changes to the land use of the Site or the surrounding properties have been proposed or are planned to be changed in the near future.

No further items of discussion were relevant to this FYR site visit.

4. ACTIONS

The USACE will incorporate information obtained from the site visit into the Five Year Review report.

Blair Kinser

Environmental Engineer

Seattle USACE EN-TS-ET

Site Visit Photos

Figure H-1 Tanks located on-site. 8" piping noted to have minor rusting.

Figure H-2 Photo of the SVE system.

Figure H-3 On-site pumps and electric motors are in good condition.

Figure H-4 SVE blowers, separators, and other components are in good condition.

Figure H-5 SVE intake pipes and valve.

Figure H-6 Photo at the top of the cap. SVE wells and monitoring wells appeared to be in good condition.

Figure H-7 Top of cap. No significant erosion or settlement was noted.

Figure H-8 Northern slope of cap. No erosion or settlement noted. Similar conditions were noted for all other slopes.

Figure H-9 Fence line and ditch along the southeastern corner of the Site.

Figure H-10 Fence line and drainage ditch along the western edge of the Site.

Figure H-11 Drainage ditch and cap slope from northwestern prospective. No erosion or sitting water noted.

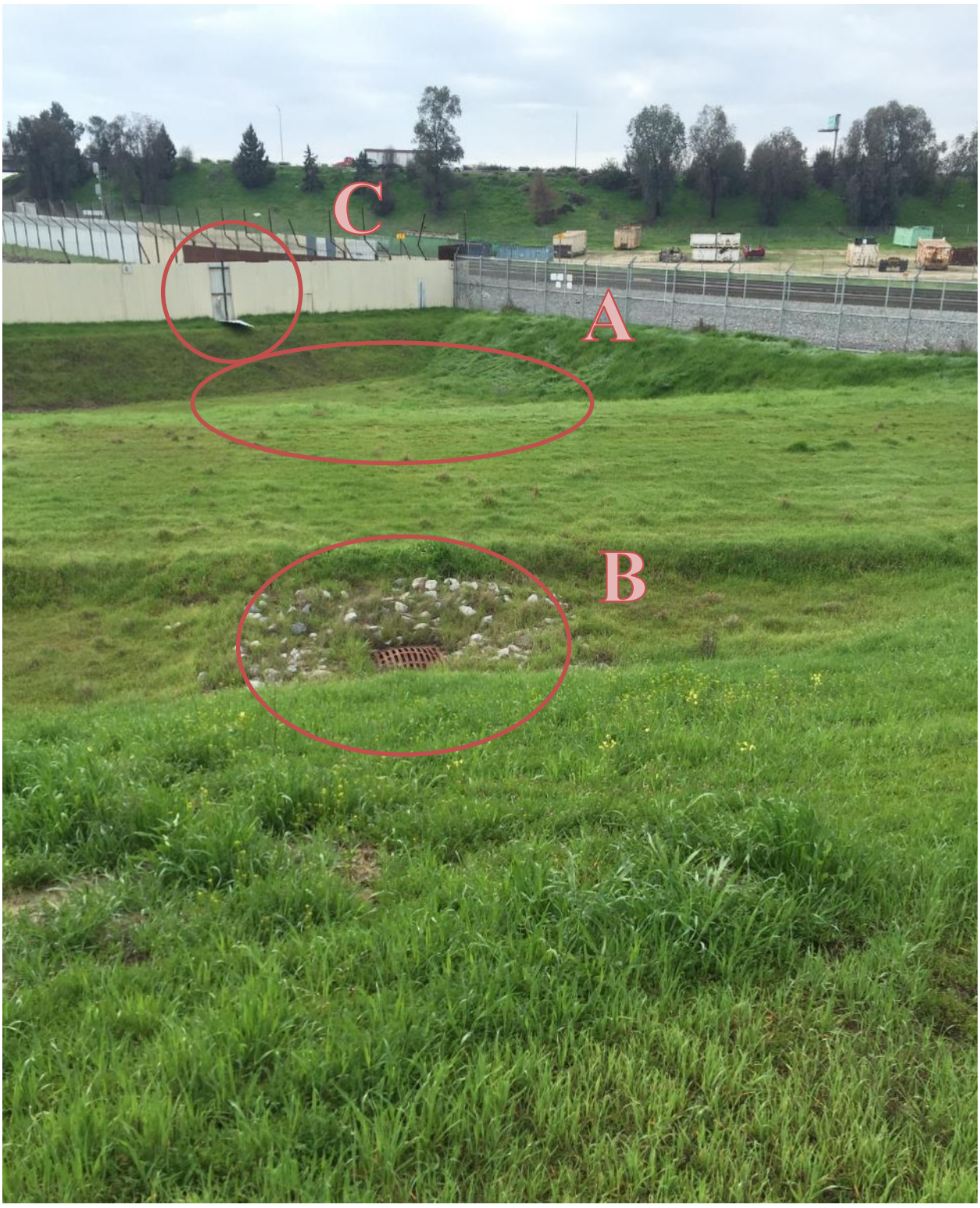


Figure H-12 Southwest infiltration basin was empty of water in background of photo (A). No objects were blocking the inlet (B). The south fence line was noted to have a panel loose from the fence posts (C).

Figure H-13 Noticed damage of the barbed wire along the eastern fence line of the Site.

Figure H-14 Fence damage along the property lines between Bruno's recycling and Purity Oil.

Figure H-15 Fence damage along the property lines between Bruno's recycling and Purity Oil.

Figure H-16 Photo of the Evapotranspiration basin located at the southeast corner of the Site. At the time of the site visit it held some water from the most recent rainfall events.

Figure H-17 Drainage ditches were clear of sitting water. No erosion was noted along the slopes of the cap. Vegetation on cap was in good condition.

Figure H-18 Drainage ditch is free of sitting water. Western slope of cap is free of any erosion

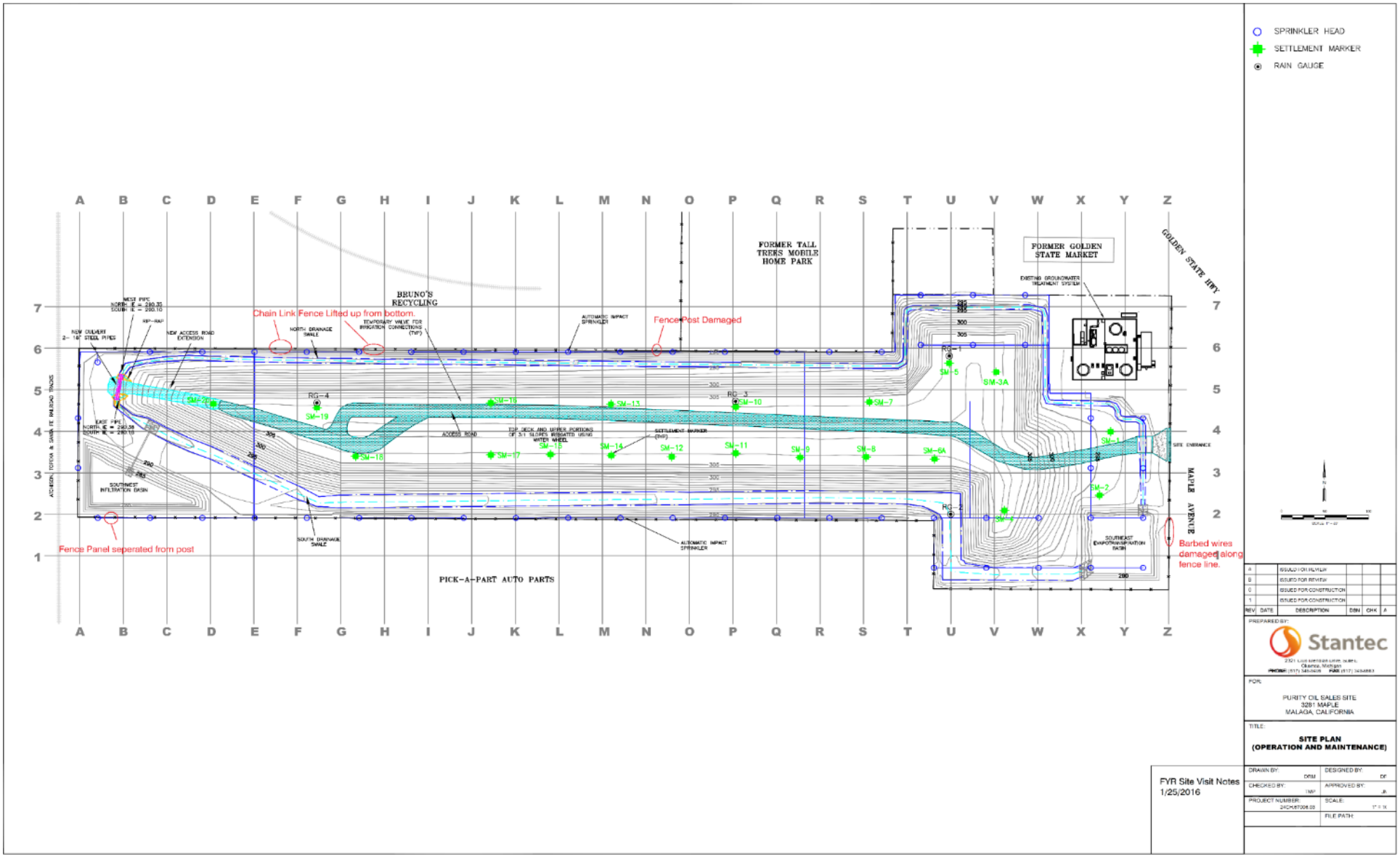


Figure H-19 Map of location where fencing was noted to be damaged.