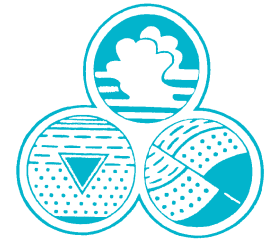


*Advanced*  
**GeoEnvironmental, Inc.**



19 April 2010  
AGE-NC Project No. 08-1640

Mr. Robert Strong  
500 Bollinger Canyon Way #A4  
San Ramon, 94582

**RECEIVED**

10:44 am, Apr 21, 2010

Alameda County  
Environmental Health

**Subject: Annual Ground Water Monitoring Report - December 2009**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

Dear Mr. Strong:

At your request, *Advanced GeoEnvironmental, Inc.* has prepared the enclosed *Annual Ground Water Monitoring Report - 2009* for 224 Rickenbacker Circle, Livermore, California. The scope of work included the monitoring and sampling of three ground water monitoring wells and preparation of this report. A copy of this report will be transmitted to Mr. Jerry Wickham of the Alameda County Environmental Health Services (ACEHS).

The opportunity to provide this service is greatly appreciated. If you have any questions or require further information, please contact our office at (209) 467-1006.

Sincerely,

***Advanced GeoEnvironmental, Inc.***

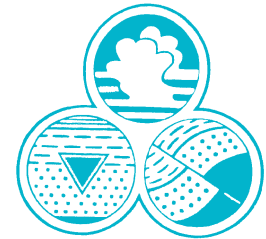


Arthur E. Deicke Jr.  
Project Scientist

Enclosure

cc: Mr. Jerry Wickham, ACEHS

*Advanced*  
**GeoEnvironmental, Inc.**



19 April 2010  
AGE-NC Project No. 08-1640

Mr. Jerry Wickham  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway Suite 250  
Alameda, California 94502-6577

**Subject: Annual Ground Water Monitoring Report - December 2009  
METRO VALLEY CLEANERS  
224 Rickenbacker Circle, Livermore, California**

Dear Mr. Wickham:

At the request of Mr. Robert Strong, *Advanced* GeoEnvironmental, Inc. has prepared the enclosed *Annual Ground Water Monitoring Report - 2009* for 224 Rickenbacker Circle, Livermore, California. The scope of work included the monitoring and sampling of three ground water monitoring wells and preparation of this report.

If you have any questions or require further information, please contact our office at (209) 467-1006.

Sincerely,

***Advanced* GeoEnvironmental, Inc.**

A handwritten signature in black ink, appearing to read "Arthur E. Deicke Jr.", is written over a horizontal line.

Arthur E. Deicke Jr.  
Project Scientist

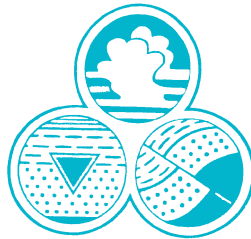
**Annual Ground Water Monitoring Report - December 2009**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

19 April 2010  
AGE-NC Project No. 08-1640

*PREPARED FOR:*

Mr. Robert Strong  
METRO VALLEY CLEANERS

*PREPARED BY:*



***Advanced GeoEnvironmental, Inc.***

381 Thor Place, Brea, California 92821 • Phone (714) 529-0200 • Fax (714) 529-0203

837 Shaw Road, Stockton, California 95215 • Phone (209) 467-1006 • Fax (209) 467-1118

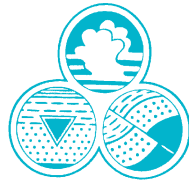
122 Calistoga Road, Santa Rosa #325, California 95409 • Phone (707) 570-1418 • Fax (707) 570-1461

395 Del Monte Center, #111, Monterey, California 93940 • Phone (800) 511-9300 • Fax (831) 394-5979

7115 North Division Street, Suite B 130 Spokane, Washington 99208 • Phone (800) 511-9300 • Fax (509) 228-7046

**Annual Ground Water Monitoring Report - December 2009**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

19 April 2010  
AGE-NC Project No. 08-1640



**Advanced GeoEnvironmental, Inc.**  
**837 Shaw Road, Stockton, California**

**PREPARED BY:**

A handwritten signature in black ink that reads "Luis Gardea".

Luis A. Gardea  
Staff Engineer

**PROJECT MANAGER:**

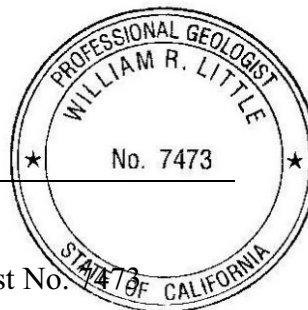
A handwritten signature in black ink that reads "Arthur E. Deicke Jr.".

Arthur E. Deicke Jr.  
Project Scientist

**REVIEWED BY:**

A handwritten signature in black ink that reads "William R. Little".

William R. Little  
Senior Project Geologist  
California Professional Geologist No.



**Annual Ground Water Monitoring Report - December 2009**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

**TABLE OF CONTENTS**

<u>SECTION</u>	<u>PAGE</u>
1.0. INTRODUCTION .....	1
2.0. PROCEDURES. ....	1
3.0. FINDINGS. ....	1
4.0. CONCLUSIONS. ....	2
5.0. RECOMMENDATIONS.....	2
6.0. LIMITATIONS. ....	2

**FIGURES**

- Figure 1 - *Location Map*
- Figure 2 - *Site Plan*
- Figure 3 - *Ground Water Elevation*
- Figure 4 - *Dissolved PCE*

**TABLES**

- Table 1 - *Well Construction Details*
- Table 2 - *Ground Water Elevation*
- Table 3 - *Analytical Results of Ground Water Samples*

**APPENDICES**

- Appendix A - *Site Background Information*
- Appendix B - *Monitoring and Sampling Procedures*
- Appendix C - *Field Data and Logs*
- Appendix D - *Laboratory Report - Analytical Results*

**Annual Ground Water Monitoring Report - December 2009**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

**1.0. INTRODUCTION**

At the request of Mr. Robert Strong, *Advanced GeoEnvironmental, Inc.* (AGE) has prepared the this *Annual Ground Water Monitoring Report -December 2009* for 224 Rickenbacker Circle, Livermore, California. The scope of work included monitoring and sampling of three ground water monitoring wells and preparation of this report. The location of the site is illustrated in Figure 1. A plot plan of the site is illustrated in Figure 2. Background information is presented in Appendix A. Well construction details are included as Table 1.

**2.0. PROCEDURES**

On 17 December 2009, the annual ground water monitoring event was conducted utilizing wells MW-1 through MW-3. Monitoring was performed in accordance with AGE's standard monitoring and sampling procedures, provided in Appendix B. Field data and logs are provided in Appendix C. No exceptions to AGE's standard procedures were noted.

**3.0. FINDINGS**

Ground water elevation, flow direction and gradient were determined from field data on 17 December 2009. Contaminant impact to ground water was quantified from laboratory analytical data.

At the time of the December 2009 sampling event, depths to ground water ranged from 27.03 feet (MW-1) to 27.54 feet (MW-2) below the top of the casing (btoc). Ground water elevations averaged approximately 382.59 feet above mean sea level (MSL), an increase of approximately 0.83 feet since the December 2008 monitoring event (Table 2).

Ground water flow was inferred to be flowing toward the west under an average hydraulic gradient of approximately 0.006 foot/foot (ft/ft).

Tetrachloroethene (PCE) was reported in ground water samples collected from wells MW-1 and MW-2 at concentrations of 3.4 micrograms per liter ( $\mu\text{g/l}$ ) and 4.9  $\mu\text{g/l}$ , respectively.

No other analytes were reported in the ground water samples analyzed on 17 December 2009. Analytical results of the ground water samples collected on 17 December 2009 are summarized in Table 3. The laboratory reports (CTEL Project Nos. CT214-0912176), Quality Assurance/Quality Control report and chain-of-custody form are included in Appendix D. Laboratory electronic deliverable format (EDF) files and depth-to-water measurements were uploaded to the State

GeoTracker database under confirmation numbers 8144552946 and 7409135222, respectively.

#### **4.0. CONCLUSIONS**

Based upon the results of the annual ground water monitoring event, AGE concludes:

- The PCE contaminants around both MW-1 and MW-2 are below California Department of Public Health Services Maximum Contaminant Levels. MW-1 shows a slight increase while MW-2 shows a slight decrease in PCE contaminant levels.
- MW-3 PCE contaminant levels have remained at non-detect the past three monitoring events.

#### **5.0. RECOMMENDATIONS**

Based on the findings of the environmental activities performed to date at the site, AGE recommends:

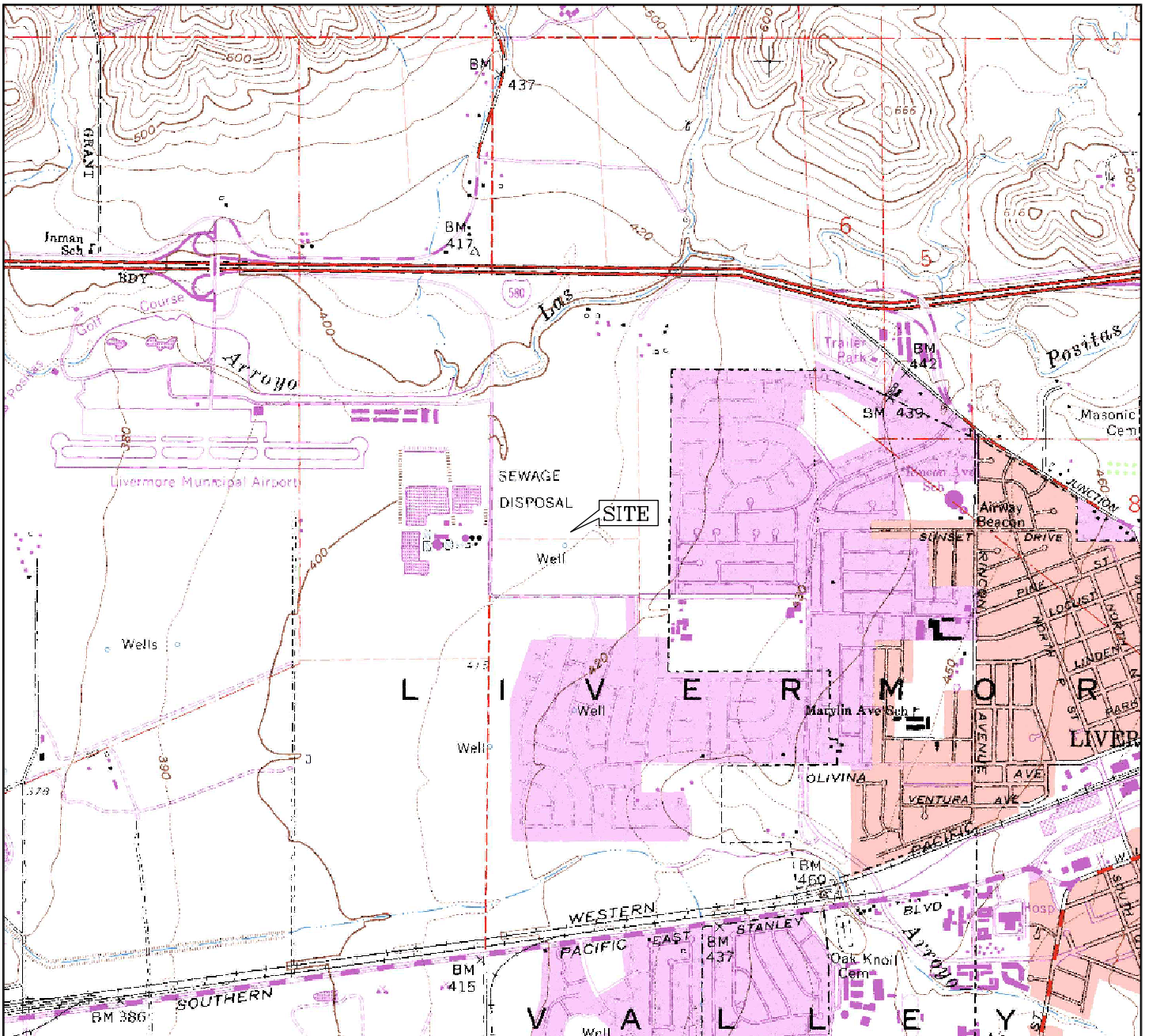
- Continued annual ground water monitoring at the site; the next annual monitoring event has not been scheduled.
- Preparation of the Remediation Start-Up Report as directed by the ACEHS letter dated 29 October 2009. The Soil Vapor Extraction (SVE) remediation system began operation on 22 February 2010.

#### **6.0. LIMITATIONS**

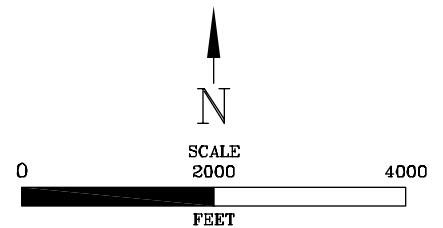
Our professional services were performed using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar localities. Findings were based upon analytical results provided by an independent laboratory. Evaluation of the geologic/hydrogeologic conditions at the site for the purpose of this investigation was made from a limited number of available data points (ground water samples) and subsurface conditions may vary away from these data points. No other warranty, expressed or implied, is made as to the professional interpretations, opinions, and recommendations contained in this report.

# **FIGURES**





LIVERMORE QUADRANGLE, CALIFORNIA  
 7.5 MINUTE SERIES (U.S. GEOLOGICAL SURVEY)



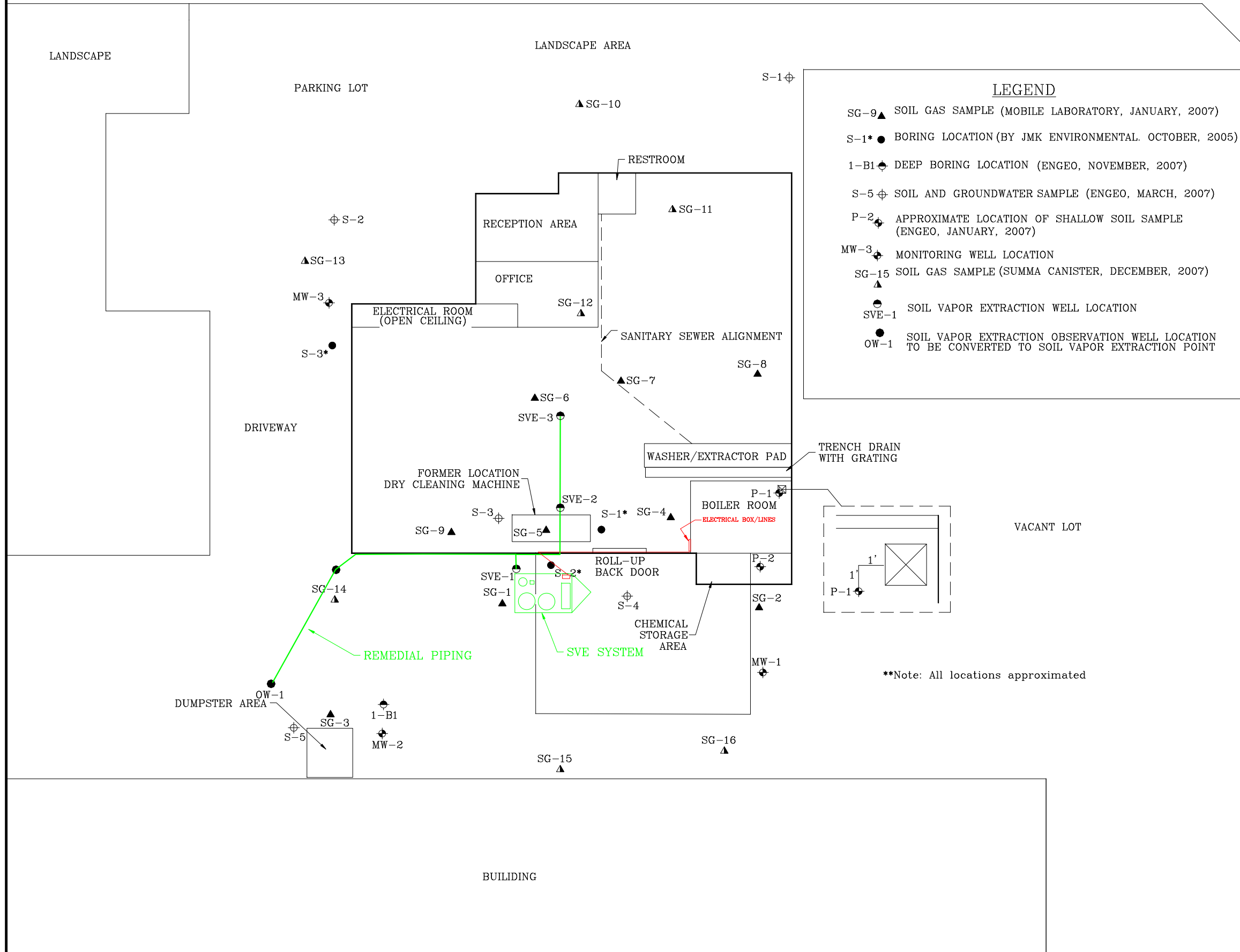
LOCATION MAP  
 METRO VALLEY CLEANERS  
 224 RICKENBACKER CIRCLE  
 LIVERMORE, CALIFORNIA



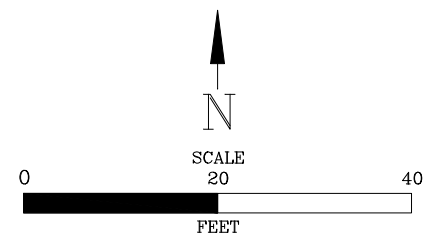
**Advanced**  
**GeoEnvironmental, Inc.**  
*of Northern California*

PROJECT NO. AGE-NC-08-1640	FILE: LOCATION	FIGURE:
DATE: 03 OCTOBER, 2008	DRAWN BY: MAC	1

# RICKENBACKER PLACE

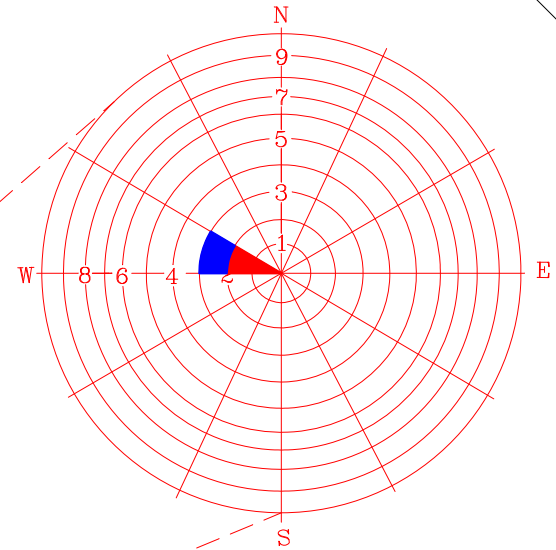
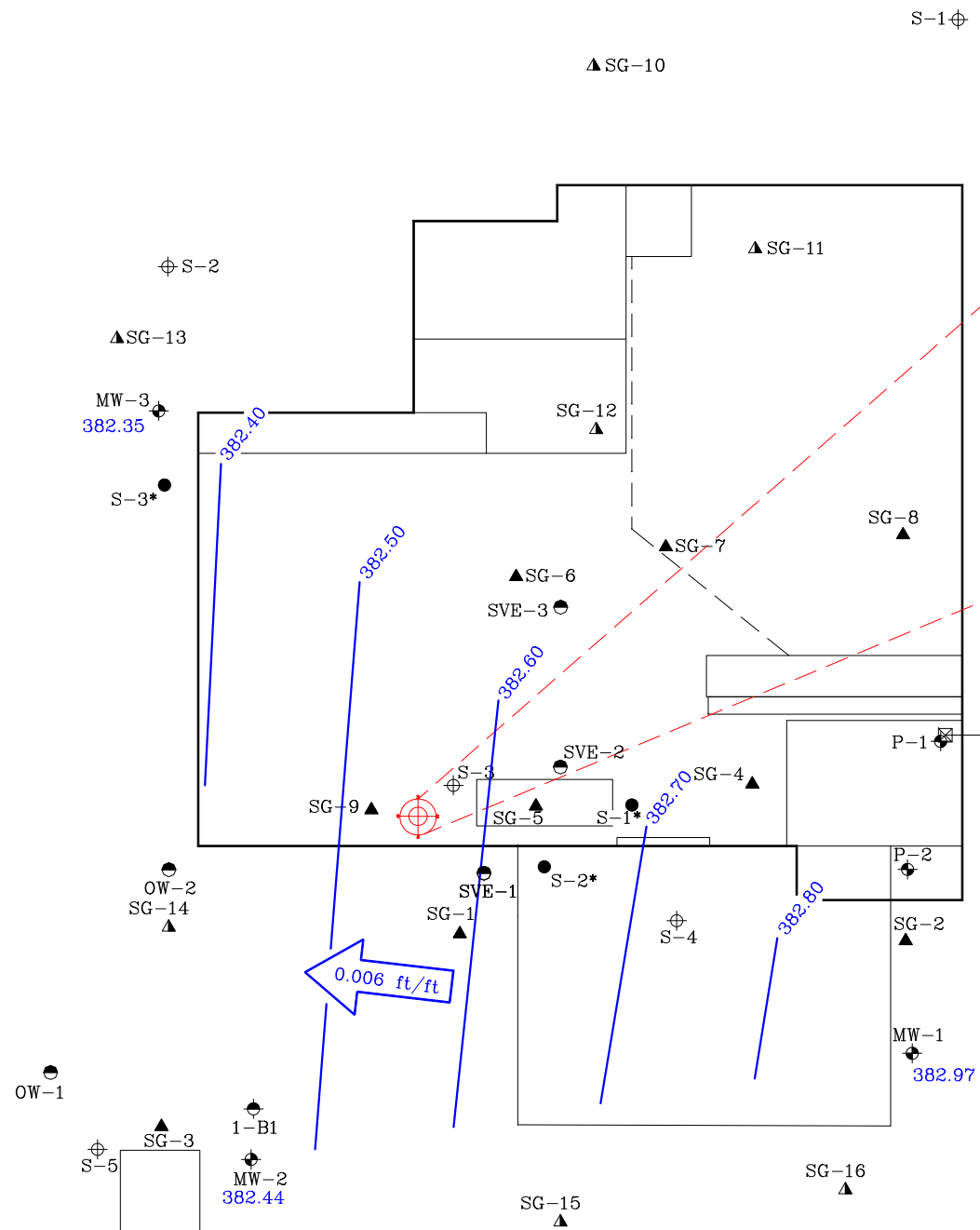


RICKENBACKER CIRCLE



# RICKENBACKER PLACE

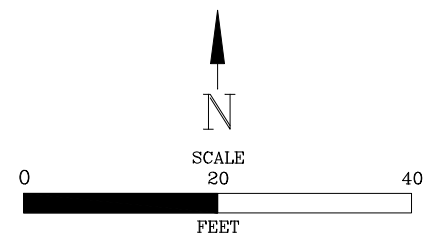
17 DECEMBER 2009



### LEGEND

- MW-3 16.76 MONITORING WELL LOCATION WITH REPORT GROUND WATER ELEVATION
- RECORDED GROUND WATER FLOW DIRECTIONS
- (16.76) NOT INCLUDED IN CONTOUR LINE
- ? QUIERIED WHERE UNCERTAIN
- NM NOT MONITORED
- 0.003 INFERRED GROUND WATER FLOW DIRECTION AND GRADIENT
- 17.00 ESTIMATED GROUND WATER ELEVATION CONTOUR LINE
- SG-9 ▲ SOIL GAS SAMPLE
- S-1\* ● BORING LOCATION
- 1-B1 DEEP BORING LOCATION
- S-5 SOIL AND GROUNDWATER
- P-2 APPROXIMATE LOCATION OF SHALLOW SOIL SAMPLE
- SG-15 ▲ SOIL GAS SAMPLE
- SVE-1 ● SOIL VAPOR EXTRACTION WELL LOCATION

RICKENBACKER CIRCLE



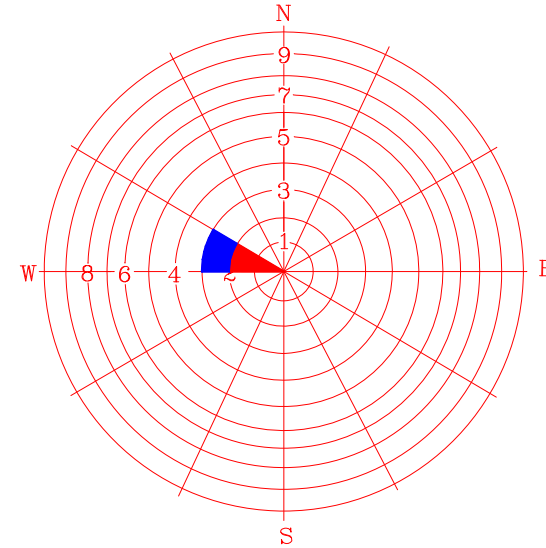
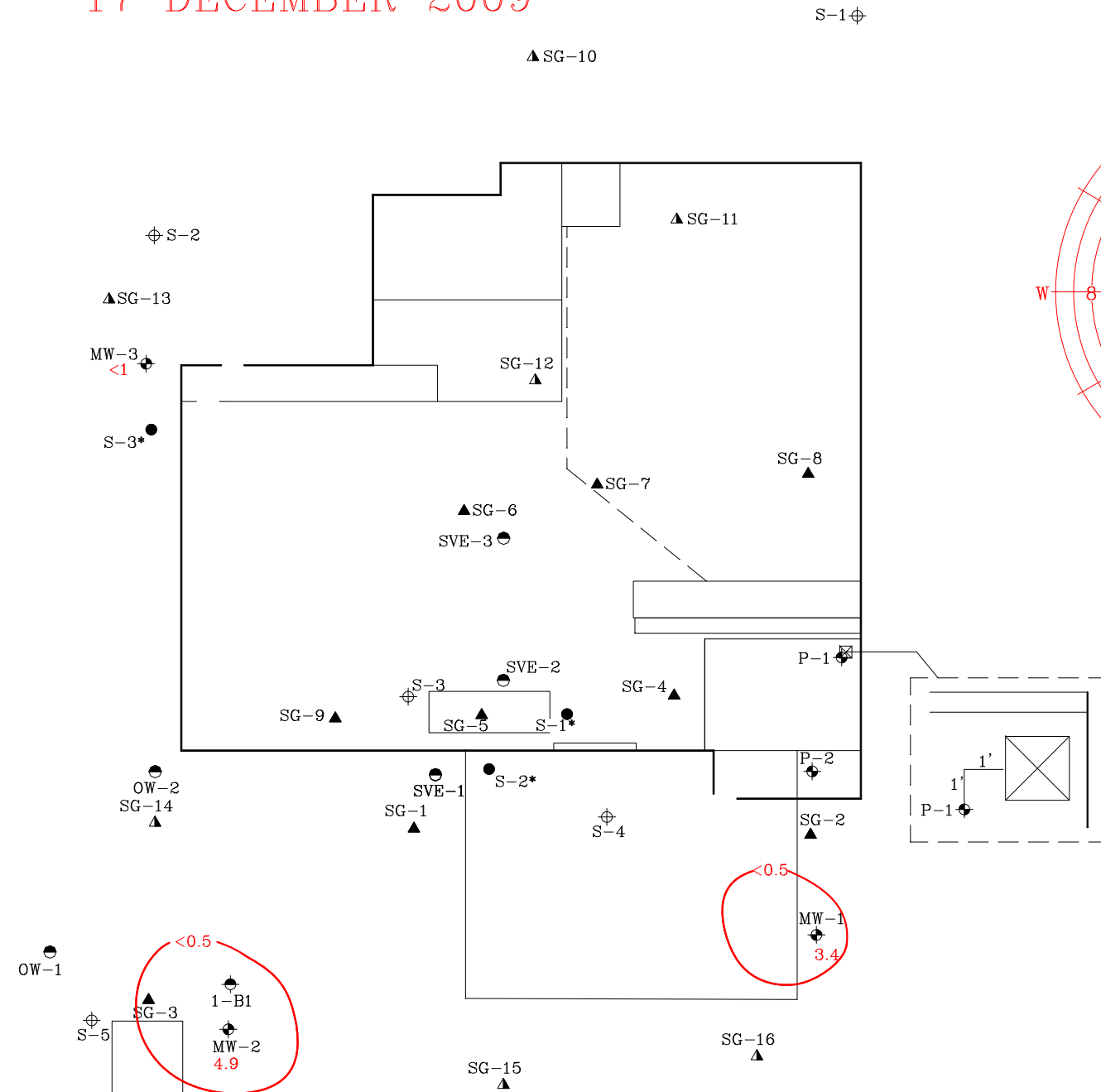
**Advanced  
GeoEnvironmental, Inc.**

GROUND WATER ELEVATION  
METRO VALLEY CLEANERS  
224 RICKENBACKER CIRCLE  
LIVERMORE, CALIFORNIA

PROJECT NO. ACE-NC-08-1640	FILE: METRO2
DATE: 05 JANUARY 2009	DRAWN BY: MAC
FIGURE: 3	

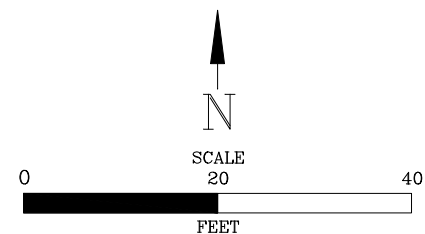
# RICKENBACKER PLACE

17 DECEMBER 2009



### LEGEND

- MW-3  $\blacklozenge$  16.76 MONITORING WELL DESIGNATION  
CONTAMINANT RESULT
- GROUND WATER FLOW DIRECTION  
ROSE DIAGRAM
- ? QUIERIED WHERE UNCERTAIN
- SG-9  $\blacktriangle$  SOIL GAS SAMPLE
- S-1\*  $\bullet$  BORING LOCATION
- 1-B1  $\blacklozenge$  DEEP BORING LOCATION
- S-5  $\oplus$  SOIL AND GROUNDWATER
- P-2  $\blacklozenge$  APPROXIMATE LOCATION OF  
SHALLOW SOIL SAMPLE
- SG-15  $\blacktriangle$  SOIL GAS SAMPLE
- SVE-1  $\bullet$  SOIL VAPOR EXTRACTION WELL LOCATION
- INFERRED EXTENT OF PCE IN GROUND  
WATER IN UG/L



**Advanced  
GeoEnvironmental, Inc.**

DISSOLVED PCE  
METRO VALLEY CLEANERS  
224 RICKENBACKER CIRCLE  
LIVERMORE, CALIFORNIA

PROJECT NO. ACE-NC-08-1640	FILE: METRO2
DATE: 05 JANUARY 2010	DRAWN BY: MAC
FIGURE 4	

# **TABLES**

**TABLE 1**  
**WELL CONSTRUCTION DETAILS**  
 Metro Valley Cleaners  
 224 Rickenbacker Circle  
 Livermore, CA

Well ID	Installation Date	Borehole Diameter (inches)	Total Depth (ft bsg)	Casing Diameter (inches)	Casing Material	Slot Size (inches)	Casing Elevation (ft MSL) <sup>1</sup>	Screen Interval (ft btoc)	Filterpack Interval (ft btoc)	Bentonite Interval (ft btoc)	Grout Interval (ft btoc)
<b>Ground Water Monitoring Wells</b>											
MW-1	12-18-2007	8	35	2	PVC	0.010	410.00	10 to 35	13 to 35	12 to 13	1 to 12
MW-2	12-18-2007	8	35	2	PVC	0.010	409.98	10 to 35	39 to 65	12 to 13	1 to 12
MW-3	12-18-2007	8	35	2	PVC	0.010	409.48	10 to 35	43 to 65	12 to 13	1 to 12
<b>Remediation Wells</b>											
SVE-1	01-08-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3
OW-1	01-08-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3
OW-2	01-08-2009	8	20	2	PVC	0.030	ns	5 to 15	4 to 20	3 to 4	1 to 3

*Notes:*

- ft bsg: feet below surface grade
- PVC: polyvinylchloride
- ft MSL: feet mean sea level
- ft btoc: below top of well casing
- ns: not surveyed
- note 1: Survey data not available

**TABLE 2**  
**GROUND WATER ELEVATION DATA**  
Metro Valley Cleaners  
224 Rickenbacker Circle  
Livermore, CA

Well ID	Screened Interval	Well Casing Elevation	Date	Depth to Ground Water	Ground Water Elevation	Ground Water Flow and Gradient	
	(feet bsg)	(ft MSL) <sup>1</sup>		(ft btoc)	(ft MSL)	Quarter/Year	Direction/ Gradient
MW-1	13-35	410.00	01/28/08	25.25	384.75	1st/2008	NW / 0.00627 ft/ft
			12/18/08	27.90	382.10	4th/2008	W / 0.007 ft/ft
			12/17/09	27.03	382.97	4th/2009	W / 0.006 ft/ft
MW-2	13-35	409.98	01/28/08	25.23	384.75		
			12/18/08	28.38	381.60		
			12/17/09	27.54	382.44		
MW-3	13-35	409.48	01/28/08	25.25	384.23		
			12/18/08	27.91	381.57		
			12/17/09	27.13	382.35		

Notes:

ft bsg: feet below surface grade  
ft MSL: feet mean sea level  
ft btoc: feet below top of well casing  
note 1: survey data not available  
ft/ft: foot per foot

**TABLE 3**  
**GROUND WATER ANALYTICAL DATA**  
 Metro Valley Cleaners  
 224 Rickenbacker Circle  
 Livermore, California  
 (ug/l)

Sample ID	Screen Interval (feet bsg)	Date	EPA Method 8260B					
			PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC
Maximum Contaminant Levels*			5	5	6	10	6	0.5
MW-1	10 to 35	01-28-2008	<b>0.80</b>	<0.5	<0.5	<0.5	<0.5	<0.5
		12-18-2008	<1	<1	<1	<1	<1	<0.5
		12/17/2009	<b>3.4</b>	<1	<1	<1	<1	<0.5
MW-2	10 to 35	01-28-2008	<b>0.95</b>	<0.5	<0.5	<0.5	<0.5	<0.5
		12-18-2008	<b>7.1</b>	<1	<1	<1	<1	<0.5
		12/17/2009	<b>4.9</b>	<1	<1	<1	<1	<0.5
MW-3	10 to 35	01-28-2008	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		12-18-2008	<1	<1	<1	<1	<1	<0.5
		12/17/2009	<1	<1	<1	<1	<1	<0.5
S-1	22 - 26	03-02-2007	<1	<1	<1	<1	<1	<1
S-2	22 - 26	03-02-2007	<b>1.8</b>	<1	<1	<1	<1	<0.5
S-3	24 - 28	03-02-2007	<b>27</b>	<b>2.2</b>	<0.05	<0.05	<b>1.6</b>	<0.05
S-4	26 - 30	03-02-2007	<b>16</b>	<0.05	<0.05	<0.05	<0.05	<0.05
S-5	23 - 27	03-02-2007	<b>36</b>	<b>2.0</b>	<0.05	<0.05	<b>0.054</b>	<0.05
1-B1/DB-1-35	35 - 39	11-28-2007	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1-B1/DB-1-70	70 - 74	11-28-2007	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1-B1/DB-1-95	95 - 99	11-28-2007	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

*Notes:*

ug/l: micrograms per liter  
 bsg: below surface grade  
 <: non-detect above laboratory reporting limit  
 DB: deep boring  
 PCE: Tetrachloroethene  
 TCE: Trichloroethene  
 1,1-DCE: 1,1- Dichloroethene  
 Trans 1,2-DCE: Trans 1,2-Dichloroethene  
 Cis 1,2-DCE: Cis 1,2-Dichloroethene  
 VC: Vinyl Chloride

\* Maximum Contaminant Levels available at: <http://www.cdph.ca.gov/certlic/drinkingwater/Documents/DWdocuments/EPAandCDPH-11-28-2008.pdf>



# **APPENDIX A**

**Background Information**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

The site was formerly used as a dry cleaning facility utilizing a solvent-based dry cleaning machine.

Reportedly, the tetrachloroethene (PCE)-based dry cleaning machine was upgraded in the early 1990s to an Exxon DF2000, which is a clean solvent machine, and then later to silicon-based dry cleaning technology. All dry cleaning equipment was reportedly removed from the site in 2005.

#### REGIONAL GEOLOGIC/HYDROGEOLOGIC CONDITIONS

In general, alternating layers of clay and silt were noted during the advancement of the pilot borings. Distinct layers of sand and gravel were also noted; sand layers encountered were poorly-graded containing some gravel pieces while gravel layers were noted as angular gravel containing some sands and silt.

#### PREVIOUS SITE ASSESSMENT

In October 2005, JMK Environmental Solutions advanced three soil borings for the collection of soil samples at the site. Soil samples were collected from borings S-1 and S-2 at five-foot intervals from 5 feet to 15 feet below surface grade (bsg) and in ten-foot intervals between 15 feet and 35 feet bsg.

In January 2007, ENGEO Inc. advanced nine soil borings (SG-1 to SG-9) to five feet bsg for the collection of soil-gas samples and two soil borings (P-1 and P-2) to one and five feet bsg for the collection of soil samples. Soil-gas samples were collected in syringes and analyzed by a mobile laboratory in accordance with EPA Method 8260M. PCE and related PCE-daughter products were reported in the soil-gas samples. PCE was also reported in soil sample P-1@5 at five feet bsg.

In March 2007, ENGEO, Inc. advanced five soil borings (S-1 through S-5) for the collection of soil and ground water. Soil samples were collected at various depths ranging from 2 feet to 30 feet bsg. In general, ground water samples were collected from the first water bearing unit at depths ranging from approximately 21 feet to 26 feet bsg. PCE was reported in soil samples collected from S-3, which is located near the former dry cleaning unit. PCE was reported in each grab water samples collected from boring S-2 through S-5.

In November 2007, ENGEO, Inc. advanced one boring (1-B1) near the current trash holding area to define the vertical extent of soil and ground water. Soil samples were collected at ten-foot

intervals from 10 feet to 90 feet bsg; grab ground water samples were collected at depths of approximately 35, 70 and 95 feet bsg. PCE was reported in soil samples from collected from 10, 20 and 50 feet bsg. No target chemicals were reported in grab ground water samples.

In December 2007, ENGEO, Inc. performed a soil-gas survey and advanced seven soil borings (SG-10 through SG-16) to five feet bsg and collected eight soil-gas samples in Summa canisters and analyzed by EPA Method TO-15. Results from the survey indicated that all locations were either non-detect or below environmental screening levels for target chemicals.

In December 2007, ENGEO, Inc. installed three ground water monitoring wells (MW-1 through MW-3). Soil samples were collected from MW-1 at 5.5 feet and 10 feet bsg; one soil sample was collected during the advancement of MW-2 and MW-3 at depths of 25.5 feet and 26 feet, respectively. PCE was reported in both soil samples collected during the installation of well MW-1.

ENGEO, Inc. performed one ground water monitoring event at the site in January 2008 utilizing wells MW-1 through MW-3. PCE was reported in monitoring wells MW-1 and MW-2 at concentrations below Maximum Contaminate Level (MCL) of 5 ug/l. Historical analytical soil, ground water, soil-gas and other data is included in Tables 2 through 4 and 7.

On 08 January 2009 *Advanced GeoEnvironmental, Inc.* (AGE) advanced one SVE well (SVE-1) and two SVE observation wells (OW-1 and OW-2) at the site. Three pilot soil borings were advanced at the site to depths of approximately 20 feet bsg. SVE well SVE-1 was advanced south of the former dry-cleaning machine location and adjacent to soil vapor monitoring point SG-5. SVE observation well OW-1 was located approximately 39 feet to the southwest of well SVE-1 and north of the location of borings SG-3 and S-5. SVE observation well OW-2 was located approximately 21 feet west of well SVE-1. PCE was reported in samples collected at 5, 10 and 15 feet bsg in pilot boring SVE-1. PCE was reported in the sample collected at 5 feet bsg in pilot boring OW-1. PCE was reported in samples collected at 5 and 10 feet bsg in pilot boring.

On 19 and 20 January 2009 AGE performed vapor extraction tests at the site. Field work was performed as detailed in the AGE-prepared *Soil Vapor Extraction Pilot Test Work Plan* dated 02 October 2008 and as modified and approved by Alameda County Environmental Health Services (ACEHS) in their letter dated 07 November 2008 and consisted of a 24-hour variable speed pilot test utilizing SVE well SVE-1, screened from 5 feet to 20 feet bsg, to evaluate the use of the technology to effectively remove chlorinated solvents from the impacted soil. PCE was reported in each of the four soil vapor samples collected from SVE well SVE-1. Trichloroethene (TCE) was reported in soil vapor sample.

Based on the results of vapor extraction pilot tests performed at the site on, AGE had recommended installation of a soil vapor extraction (SVE) system utilizing existing shallow-screened vapor well SVE-1. AGE also recommended converting pilot test observation wells OW-1 and OW-2, which are constructed identical to SVE-1, to soil vapor extraction wells. Additionally AGE recommended the installation of two additional SVE wells near and north of the former drying cleaning system.

On 10 April 2009, Alameda County Environmental Health Services (ACEHS) concurred with AGE's above stated recommendations and directed that an interim remediation work plan be submitted to the ACEHS by 15 June 2009 (Appendix A). Due to budget and scheduling constraints AGE requested two separate extensions for the submittal of the interim soil remediation work plan, which were approved by ACEHS in email correspondence dated 09 June and 11 August 2009.

# **APPENDIX B**

**Monitoring and Sampling Procedures**  
**METRO VALLEY CLEANERS**  
**224 Rickenbacker Circle, Livermore, California**

#### STATIC WATER LEVEL MEASUREMENTS

Before sampling and during groundwater monitoring, static water levels are measured using an electric water level indicator. Water level data is recorded to the nearest 0.01-foot from a reference point marked on the top of the PVC well casing.

#### WELL EVACUATION

Subsequent to measurement of depth to water and prior to sampling, each well is purged to ensure samples are representative of the formation, rather than standing water in the well casing. Wells are purged using a Waterra inertial pump and dedicated 5/8-inch plastic tubing or a disposable polyethylene bailer.

Wells are purged until a minimum of three casing-water volumes are removed from the well and/or the field-measured ground water parameters (pH, temperature, and conductivity) are stabilized. However, if a well is purged dry prior to evacuating three casing volumes, a sample is collected following 80 percent recovery of ground water within the well, or after a minimum of one hour, but within eight hours, of well evacuation.

Field data and logs are provided in Appendix C.

#### SAMPLE WITHDRAWAL

Water samples are collected from each monitoring well using either an inertia pump with dedicated plastic/Teflon tubing or a disposable polyethylene bailer. Bailers are disposed of after a single use (sample) and require no decontaminating; plastic tubing used with the inertia pump is either dedicated to each well point or changed at each sampling event, thereby minimizing cross contamination due to sampling devices. Samples are drawn and collected in such a manner that agitation and exposure of the groundwater to the atmosphere is minimal.

#### SAMPLE HANDLING

Ground water samples are collected into laboratory-supplied 40-ml volatile organic analysis (VOA) vials without preservative and, if appropriate, one-liter amber glass containers without a preservative; the samples are collected with no visible air bubbles present in the vials after filling and capping. Following collection, samples are appropriately labeled, placed on ice, and kept in a cooler until delivered to Cal Tech Environmental Laboratories (CTEL), a State of California Department of

Public Health-certified analytical laboratory, for analysis. The samples are analyzed for:

- Volatile organic compounds, including tetrachloroethene (PCE) and trichloroethene (TCE), in accordance with EPA Method 8260.

#### EQUIPMENT DECONTAMINATION AND WASTE MANAGEMENT

Any non-disposable equipment used for sample collection is thoroughly rinsed with clean water after being washed with a solution of Alconox. Purge water generated during sampling activities was contained on-site in an appropriately labeled 55-gallon drum.

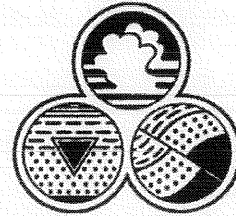
# **APPENDIX C**



Advanced

GeoEnvironmental, Inc.

837 Shaw Road, Stockton, CA 95205 • (209) 467-1006 • Fax (209) 467-1118



### Ground Water Depth & Dissolved Oxygen Field Log

Project: Metro Valley Cleaners

Date: 12-17-09

Field Personnel: MB

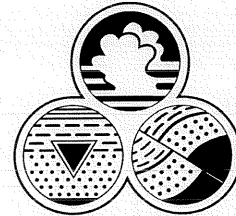
Page: 1 of 1

Well I.D.	Time	Casing Elevation	Depth To Water	Ground Water Elevation	Actual Depth (ft)	Screened Depth	Dissolved Oxygen		
							mg/l	%	°C
MW-1	1205	410.00	27.03	382.97	34.70				
MW-2	1200	409.98	27.54	382.44	34.55				
MW-3	1155	409.48	27.13	382.35	34.80				

Advanced

GeoEnvironmental, Inc.

837 Shaw Road, Stockton, CA 95205 • (209) 467-1006 • Fax (209) 467-1118



Monitoring Well Field Log

Well Data

Project Name: METRO VALLEY CLEANERS	Project No.: AGE-NC-	Date: 12/17/09
Pre-Purge DTW: 27.03 Time: 1205	Well I.D.: MW-1	
Post-Purge DTW: 27.03 Time: 1255		
Total Depth of Well: 34.70	Well Volume: 1.22	Casing Diameter: 0.5" 2" 4" 6" Gal./Ft.: 0.01074 0.16 0.65 1.47
Sampler(s): <del>MB</del> MB	Sample Containers: 3 VOAS	
Sample I.D.: MW-1 /121709	Analysis: Full 8260	

Stabilization Data

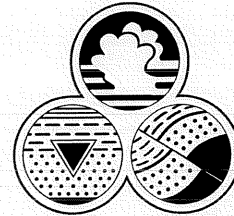
Time	Volume (gallons)	pH	Temp.	Cond $\mu$ S/cm	Color/ Turbidity	Notes
1248	0	7.25	19.3	829	clear	
1250	1.25	7.27	19.2	828	cloudy	
1252	2.50	7.26	19.2	831	u	
1254	3.75	7.27	19.3	832	u	

Purge Method:	DISPOSABLE BAILER		
Sample Method:	DISPOSABLE BAILER	Well Integrity:	
Sample Time:	1256	Dissolved O <sub>2</sub> :	C
Water analyzer: oakton		%	mg/L

Advanced

GeoEnvironmental, Inc.

837 Shaw Road, Stockton, CA 95205 • (209) 467-1006 • Fax (209) 467-1118



Monitoring Well Field Log

Well Data

Project Name: METRO VALLEY CLEANERS	Project No.: AGE-NC-	Date: 12/17/09
Pre-Purge DTW: 27.54      Time: 1200	Well I.D.: MW- 2	
Post-Purge DTW: 27.54      Time: 1239		
Total Depth of Well: 34.55	Well Volume: 1.12	Casing Diameter: 0.5" (2") 4" 6" Gal./Ft.: 0.01074 (0.16) 0.65 1.47
Sampler(s): <del>KL</del> MB	Sample Containers: 3 VOAS	
Sample I.D.: MW- 2 /121709	Analysis: Full 8260	

Stabilization Data

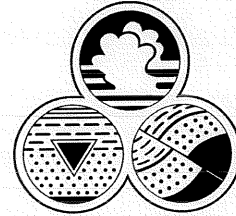
Time	Volume (gallons)	pH	Temp.	Cond $\mu$ S/cm	Color/ Turbidity	Notes
1232	0	7.25	19.5	812	clear	
1234	1.25	7.25	19.3	815	cloudy	
1236	2.50	7.25	19.3	818	u	
1238	3.50	7.25	19.3	818	u	

Purge Method:	DISPOSABLE BAILER		
Sample Method:	DISPOSABLE BAILER	Well Integrity:	
Sample Time:	1240	Dissolved O <sub>2</sub> :	C
Water analyzer: oakton		%	mg/L

Advanced

GeoEnvironmental, Inc.

837 Shaw Road, Stockton, CA 95205 • (209) 467-1006 • Fax (209) 467-1118



Monitoring Well Field Log

Well Data

Project Name: METRO VALLEY CLEANERS		Project No.: AGE-NC-	Date: 12/17/09
Pre-Purge DTW: 27.13	Time: 1155	Well I.D.: MW- 3	
Post-Purge DTW: 27.15	Time: 1221		
Total Depth of Well: 34.80	Well Volume: 1.22	Casing Diameter: 0.5" 2" 4" 6"	Gal./Ft.: 0.01074 0.16 0.65 1.47
Sampler(s): <del>SL</del> MB		Sample Containers: 3 VOAS	
Sample I.D.: MW- 3 /121709		Analysis: Full 8260	

Stabilization Data

Time	Volume (gallons)	pH	Temp.	Cond $\mu$ S/cm	Color/Turbidity	Notes
1214	0	7.17	19.1	790	clear	
1216	1.25	7.25	19.3	776	cloudy	
1218	2.50	7.26	19.3	778	v	
1220	3.75	7.25	19.2	782	u	

Purge Method:	DISPOSABLE BAILER		
Sample Method:	DISPOSABLE BAILER	Well Integrity:	
Sample Time:	1222	Dissolved O <sub>2</sub> :	C
Water analyzer: oakton		%	mg/L

# **APPENDIX D**

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## ANALYTICAL RESULTS\*

**CTEL Project No:** CT214-0912176  
**Client Name:** Advanced Geo Environmental, Inc.  
 837 Shaw Road  
 Stockton, CA 95215  
**Attention:** Mr. Art Deicke

**Phone:**(209) 467-1006  
**Fax:** (209) 467-1118

**Project ID:** Global ID: T06019748481  
**Project Name:** Metro Valley Cleaners

**Date Sampled:** 12/17/09 @ 12:56 p.m.  
**Date Received:** 12/18/09 @ 09:00 am  
**Date Analyzed:** 12/18/09

**Matrix:** Water

<b>Laboratory ID:</b>	0912-176-1	0912-176-2	0912-176-3	<b>Method</b>	<b>Units:</b>	<b>Detection Limit</b>
<b>Client Sample ID:</b>	MW1	MW2	MW3			
<b>Dilution</b>	1	1	1			
Dichlorodifluoromethane	ND	ND	ND	EPA 8260B	ug/L	1
Chloromethane	ND	ND	ND	EPA 8260B	ug/L	1
Vinyl Chloride	ND	ND	ND	EPA 8260B	ug/L	0.5
Bromomethane	ND	ND	ND	EPA 8260B	ug/L	1
Chloroethane	ND	ND	ND	EPA 8260B	ug/L	1
Trichlorofluoromethane	ND	ND	ND	EPA 8260B	ug/L	1
Iodomethane	ND	ND	ND	EPA 8260B	ug/L	1
Acetone	ND	ND	ND	EPA 8260B	ug/L	10
1,1-Dichloroethene	ND	ND	ND	EPA 8260B	ug/L	1
t-Butyl Alcohol (TBA)	ND	ND	ND	EPA 8260B	ug/L	25
Methylene Chloride	ND	ND	ND	EPA 8260B	ug/L	10
Freon 113	ND	ND	ND	EPA 8260B	ug/L	5
Carbon disulfide	ND	ND	ND	EPA 8260B	ug/L	1
trans,1,2-Dichloroethene	ND	ND	ND	EPA 8260B	ug/L	1
Methyl-tert-butyl-ether(MtBE)	ND	ND	ND	EPA 8260B	ug/L	5
1,1-Dichloroethane	ND	ND	ND	EPA 8260B	ug/L	1
Vinyl acetate	ND	ND	ND	EPA 8260B	ug/L	50
Diisopropyl Ether (DIPE)	ND	ND	ND	EPA 8260B	ug/L	1
Methyl Ethyl Ketone	ND	ND	ND	EPA 8260B	ug/L	10
cis,1,2-Dichloroethene	ND	ND	ND	EPA 8260B	ug/L	1
Bromochloromethane	ND	ND	ND	EPA 8260B	ug/L	1
Chloroform	ND	ND	ND	EPA 8260B	ug/L	1
2,2-Dichloropropane	ND	ND	ND	EPA 8260B	ug/L	1
Ethyl-t-butyl ether (ETBE)	ND	ND	ND	EPA 8260B	ug/L	1
1,1,1-Trichloroethane	ND	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloroethane	ND	ND	ND	EPA 8260B	ug/L	0.5
1,1-Dichloropropene	ND	ND	ND	EPA 8260B	ug/L	1
Carbon Tetrachloride	ND	ND	ND	EPA 8260B	ug/L	0.5
Benzene	ND	ND	ND	EPA 8260B	ug/L	0.5
t-Amyl Methyl Ether (TAME)	ND	ND	ND	EPA 8260B	ug/L	1
1,2-Dichloropropane	ND	ND	ND	EPA 8260B	ug/L	1
Trichloroethene	ND	ND	ND	EPA 8260B	ug/L	1
Dibromomethane	ND	ND	ND	EPA 8260B	ug/L	1
Bromodichloromethane	ND	ND	ND	EPA 8260B	ug/L	1
2-Chloroethylvinylether	ND	ND	ND	EPA 8260B	ug/L	5
cis,1,3-Dichloropropene	ND	ND	ND	EPA 8260B	ug/L	1
4-Methyl-2-pentanone(MI)	ND	ND	ND	EPA 8260B	ug/L	10
trans,1,3-Dichloropropene	ND	ND	ND	EPA 8260B	ug/L	1
Toluene	ND	ND	ND	EPA 8260B	ug/L	0.5
1,1,2-Trichloroethane	ND	ND	ND	EPA 8260B	ug/L	1

(Continued)

TOTALLY DEDICATED TO CUSTOMER SATISFACTION

CTEL Project No: CT214-0912176

Project ID: Global ID: T06019748481  
Project Name: Metro Valley Cleaners

Laboratory ID	0912-176-1	0912-176-2	0912-176-3	Method	Units	Detection Limit
Client Sample ID	MW1	MW2	MW3			
1,2-Dibromoethane(EDB)	ND	ND	ND	EPA 8260B	ug/L	0.5
1,3-Dichloropropane	ND	ND	ND	EPA 8260B	ug/L	1
Dibromochloromethane	ND	ND	ND	EPA 8260B	ug/L	1
2-Hexanone	ND	ND	ND	EPA 8260B	ug/L	10
Tetrachloroethene	3.4	4.9	ND	EPA 8260B	ug/L	1
Chlorobenzene	ND	ND	ND	EPA 8260B	ug/L	1
1,1,1,2-Tetrachloroethane	ND	ND	ND	EPA 8260B	ug/L	1
Ethylbenzene	ND	ND	ND	EPA 8260B	ug/L	0.5
m,p-Xylene	ND	ND	ND	EPA 8260B	ug/L	0.6
Bromoform	ND	ND	ND	EPA 8260B	ug/L	1
Styrene	ND	ND	ND	EPA 8260B	ug/L	1
o-Xylene	ND	ND	ND	EPA 8260B	ug/L	0.6
1,1,2,2-Tetrachloroethane	ND	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichloropropane	ND	ND	ND	EPA 8260B	ug/L	1
Isopropylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
Bromobenzene	ND	ND	ND	EPA 8260B	ug/L	1
2-Chlorotoluene	ND	ND	ND	EPA 8260B	ug/L	1
n-Propylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
4-Chlorotoluene	ND	ND	ND	EPA 8260B	ug/L	1
1,3,5-Trimethylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
tert-Butylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trimethylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
sec-Butylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
1,3-Dichlorobenzene	ND	ND	ND	EPA 8260B	ug/L	1
1,4-Dichlorobenzene	ND	ND	ND	EPA 8260B	ug/L	1
p-Isopropyltoluene	ND	ND	ND	EPA 8260B	ug/L	1
1,2-Dichlorobenzene	ND	ND	ND	EPA 8260B	ug/L	1
n-Butylbenzene	ND	ND	ND	EPA 8260B	ug/L	1
1,2 Dibromo-3-Chloropropane	ND	ND	ND	EPA 8260B	ug/L	1
1,2,4-Trichlorobenzene	ND	ND	ND	EPA 8260B	ug/L	1
Naphthalene	ND	ND	ND	EPA 8260B	ug/L	1
1,2,3-Trichlorobenzene	ND	ND	ND	EPA 8260B	ug/L	1
Hexachlorobutadiene	ND	ND	ND	EPA 8260B	ug/L	1

ND = Not Detected at the indicated Detection Limit

SURROGATE SPIKE	% SURROGATE RECOVERY			Control Limit
Dibromofluoromethane	107	107	105	70-130
1,2 Dichloromethaned4	113	115	105	70-130
Toluene-d8	96	92	93	70-130
Bromofluorobenzene	92	95	97	70-130

  
Greg Tejrnan  
Laboratory Director

\*The results are base upon the sample received.

Cal Tech Environmental Laboratories, Inc. ELAP ID #: 2424

# CAL TECH Environmental Laboratories



6814 Rosecrans Avenue. Paramount, CA 90723-3146  
 Telephone: (562) 272-2700 Fax: (562) 272-2789

## QA/QC Report

Method: 8260B / TO15

Matrix: Water / Air

Date Analyzed: 12/18/2009

Date Extracted: 12/18/2009

Perimeters	Conc. ug/L		Spike Added	Recovery %		Control Rec.	Limits RPD	RPD
	MS	MSD		MS	MSD			
1,1-Dichloroethane	44	43	50	88	86	70-130	20	2
Benzene	52	50	50	104	100	70-130	20	4
Trichloroethene	55	55	50	110	110	70-130	20	0
Toluene	56	57	50	112	114	70-130	20	2
Chlorobenzene	47	48	50	94	96	70-130	20	2
m,p-Xylenes	93	97	100	93	97	70-130	20	4

MS: Matrix Spike

MSD: Matrix Spike Duplicate

RPD: Relative Percent Difference of MS and MSD

Perimeters	Method Blank	Units	Det. Limit
1,1-Dichloroethene	ND	ug/L	1
Benzene	ND	ug/L	0.5
Trichloroethene	ND	ug/L	0.5
Toluene	ND	ug/L	0.5
Chlorobenzene	ND	ug/L	0.5
m,p-Xylenes	ND	ug/L	0.6
MTBE	ND	ug/L	1
TBA	ND	ug/L	10
DIPE	ND	ug/L	1
ETBE	ND	ug/L	1
TAME	ND	ug/L	1
1,2-Dichloroethane	ND	ug/L	0.5
EDB	ND	ug/L	0.5
Ethylbenzene	ND	ug/L	0.5
o-Xylene	ND	ug/L	0.6
TCE	ND	ug/L	1
PCE	ND	ug/L	1





# Advanced GeoEnvironmental, Inc.

www.advgeoenv.com

## CHAIN OF CUSTODY RECORD

- 837 Shaw Road, Stockton, California 95215 • Phone (209) 467-1006 • Fax (209) 467-1118
- 381 Thor Place, Brea, California 92821 • Phone (714) 529-0200 • Fax (714) 529-0203
- 2318 Fourth Street, Santa Rosa, California 95404 • Phone (707) 570-1418 • Fax (707) 570-1461
- 395 Del Monte Center, #111, Monterey, California 93940 • Phone (800) 511-9300 • Fax (831) 394-5979
- 

12-176

Date: 12-17-09 Page 1 of 1

### Analysis Required

Project Name: Metro Valley cleaners

Project Manager: Art Reicke

Client: \_\_\_\_\_

Sampler (initials & signature): Max Bkl

Invoice to:  AGE  Client

Lab Project No.: \_\_\_\_\_

Sample ID/Location/Description	Date	Time	Matrix	Number	Notes
MW-1/121709	121709	1230	W	3	
MW-2/121709	↓	1240	↓	↓	
MW-3/121709	↓	1222	↓	↓	

Full 8260 Scan

Relinquished by: [Signature]

Date: 121709

Time: 1030

Laboratory: CAL TECH

Courier: ontrac

Received by: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Received by: [Signature]

Date: 12/18/09

Time: 0900

Requested Turn Around Time (circle): 24 hours 48 hours 72 hours 5 days (standard) Other: \_\_\_\_\_

Matrix Codes: A = Air W = Water S = Solid

Special Instructions to lab: \_\_\_\_\_

I hereby authorize the performance of the above indicated work.  
[Signature]

Geotracker EDF to:  geotracker@advgeoenv.com

Global ID: \_\_\_\_\_