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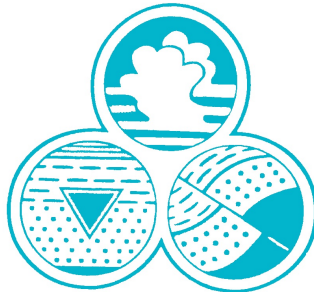
By Alameda County Environmental Health at 2:46 pm, Oct 03, 2014

**Soil Vapor Investigation Report
METRO VALLEY CLEANERS
224 Rickenbacker Circle, Livermore, California**

18 August 2014
AGE Project No. 08-1640

PREPARED FOR:
Mr. Robert Strong
METRO VALLEY CLEANERS

PREPARED BY:



Advanced GeoEnvironmental, Inc.

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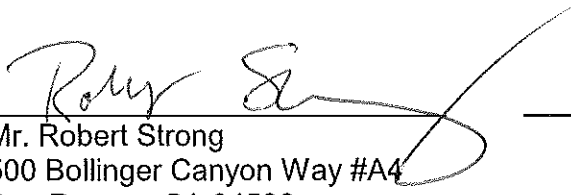
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PERJURY STATEMENT

Subject: Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, California
Soil-Vapor Investigation Report - dated 18 August 2014

"I declare under penalty of perjury, that the information and/or recommendations in the attached document or report is true or correct to the best of my knowledge."



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

Sep 29 2014
Date

Soil Vapor Investigation Report
METRO VALLEY CLEANERS
224 Rickenbacker Circle, Livermore, California

18 August 2014
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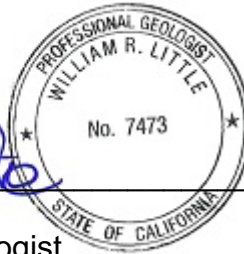
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Daniel J. Villanueva
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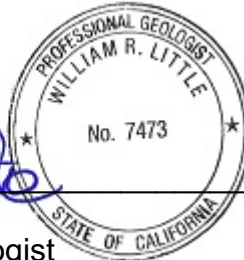
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Senior Project Geologist
California Professional Geologist No. 7473



REVIEWED BY:

William R. Little
Senior Project Geologist
California Professional Geologist No. 7473



Soil-Vapor Investigation Report
METRO VALLEY CLEANERS
224 Rickenbacker Circle, Livermore, California

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Soil-Vapor Investigation Report
METRO VALLEY CLEANERS
224 Rickenbacker Circle, Livermore, California

1.0. INTRODUCTION

At the request of Mr. Bob Strong, *Advanced GeoEnvironmental, Inc. (AGE)* has prepared this, *Soil-Vapor Investigation Report*, for the property located at 224 Rickenbacker Circle, Livermore, California (site). The scope of work included the installation and sampling of four (4) soil-vapor wells to evaluate chlorinated hydrocarbon impact to shallow soil-vapor.

The work was performed as directed by the Alameda County Environmental Health Department (ACEHD) by letter dated 09 June 2014 (Appendix A). Additionally, field work was performed utilizing guidance provided in the California Environmental Protection Agency (EPA) Department of Toxic Substances Control Los Angeles Regional Water Quality Control Board, San Francisco Regional Water Quality Control Board, *Advisory Active Soil Gas Investigations*, dated April 2012.

The location of the site and surrounding area are illustrated in Figure 1; structures, former dry cleaning machine, chemical storage area locations, soil boring and monitoring well locations are illustrated in Figure 2.

2.0. PROCEDURES

Soil boring advancement, well installation and vapor sampling procedures were outlined in the AGE-prepared, *Soil-Vapor Investigation Work Plan*, dated 28 May 2014. Applicable and required well installation/boring permits are included in Appendix B.

2.1. SOIL-VAPOR WELL INSTALLATION

On 03 July 2014, AGE advanced four (4) soil borings utilizing a 4-inch diameter hand auger to total depths of 5 feet below surface grade (bsg). Upon reaching the total depth each boring was converted into a semi-permanent, soil-vapor well (VP-1 through VP-4) using a six-inch long vapor probe and 1/4-inch diameter Teflon tubing. The probe tip and tubing were lowered to the total depth and filter pack material consisting of #2/12 sand was used to fill the void space between the tip and the borehole to approximately one-foot above the vapor probe. Following filter placement, approximately one foot of dry granular bentonite was placed above the filter pack. The remainder of the void space between the tubing and the open borehole was filled with bentonite that was hydrated at the surface. A drivable well vault was installed within concrete over each soil-vapor sampling point.

2.2. SOIL-VAPOR SAMPLE COLLECTION AND ANALYSIS

On 08 July 2014, soil-vapor samples were collected from wells VP-1 through VP-4. Above ground, the surface around the soil-vapor tubing was sealed with bentonite to prevent ambient air intrusion. To ensure that a reliable soil-vapor sample was collected with no ambient air breakthrough, AGE applied an appropriate amount (approximately 6 to 8 ounces) of isopropyl alcohol (IPA) as a tracer to adequately wet cotton balls; the wetted cotton balls were then placed next to the sampling tubing and then covered with a plastic shroud. Prior to sample collection each well was purged for a total of three purge volumes. One purge volume was determined by calculating the sum of the internal volume of the tubing, the vapor point and the volume of the boring trace (Appendix C).

Following purging, the end of the Teflon tubing, from the soil-vapor probe, was attached to a dedicated sampling inlet manifold using a compression fitting. The sampling inlet manifold was constructed of vapor-tight stainless steel: a particulate filter (5 micron), a calibrated flow restrictor (less than 200 milliliters per minute), a tee fitting, two vacuum gauges and connections for both purge and sampling canisters. A one-liter sample canister was attached at the tee of the sampling manifold assembly. Before attaching the manifold to the tubing, a 10 minute shut-in test was conducted on the manifold assembly to ensure no leaks were occurring in the sampling train.

Following the shut-in test, the sample canister valve was then opened and the initial vacuum was recorded. A sample was collected until the vacuum on the second gauge (located after the flow restriction) was below 5-inches of mercury (Hg). The sampling canister was then closed and the sampling port on the canister was capped with a brass end cap.

All vapor samples were labeled with sample ID, project name, date, time and samplers' initials. The sample was logged on a chain-of-custody form, and placed into a dry container. Subsequently, all the collected soil-vapor samples were delivered to McCampbell Analytical Inc. (MAI), a CDPH-certified analytical laboratory, for analysis of the following chemical constituents:

- Volatile organic compound (VOC) full scan by EPA method TO-15; and
- IPA (tracer) in accordance with EPA Method TO-15.

2.3. EQUIPMENT DECONTAMINATION

Prior to use, all subsurface tools for sample collection were thoroughly rinsed with clean tap water after being washed with a solution of Alconox.

3.0. FINDINGS

The residual soil-vapor contamination at the site was inferred based on laboratory analysis of soil-vapor samples. A total of four soil-vapor samples were collected from site vapor wells on 08 July 2014 and analyzed for the constituents listed in section 2.2. The following is a summary of results:

- Acetone was detected in the samples collected from wells VP-3 and VP-4 at concentrations of 110 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and $270 \mu\text{g}/\text{m}^3$, respectively;
- Acrolein was detected in the samples collected from wells VP-1 and VP-3 at concentrations of $41 \mu\text{g}/\text{m}^3$ and $12 \mu\text{g}/\text{m}^3$, respectively
- Benzene was detected in all four soil-vapor samples at a maximum concentration of $240 \mu\text{g}/\text{m}^3$ (VP-1);
- Toluene ethylbenzene and xylenes were detected in all four vapor samples at maximum concentrations of $880 \mu\text{g}/\text{m}^3$ toluene, $190 \mu\text{g}/\text{m}^3$ ethylbenzene and $940 \mu\text{g}/\text{m}^3$ total xylenes (VP-1);
- Carbon disulfide was detected in all four vapor samples at a maximum concentration of $220 \mu\text{g}/\text{m}^3$ (VP-1);
- Chloroform was detected in VP-1 at a concentration of $100 \mu\text{g}/\text{m}^3$;
- Chloromethane was detected VP-1, VP-3 and VP-4 at a maximum concentration of $24 \mu\text{g}/\text{m}^3$;
- Cyclohexane was detected in all four vapor samples at a maximum concentration of $99 \mu\text{g}/\text{m}^3$ (VP-1);
- Dichlorodifluoromethane was detected in all four vapor samples at a maximum concentration of $180 \mu\text{g}/\text{m}^3$ (VP-1);
- 1,1-dichloroethene was detected in all four vapor samples at a maximum concentration of $2,200 \mu\text{g}/\text{m}^3$ (VP-1);
- Cis-1,2-dichloroethene was detected in all four vapor samples at a maximum concentration of $330,000 \mu\text{g}/\text{m}^3$ (VP-1);
- Trans-1,2-dichloroethene was detected in all four vapor samples at a maximum concentration $250,000 \mu\text{g}/\text{m}^3$ (VP-1);
- 1,2-dichloropropane was detected in VP-1 and VP-4 at concentrations of $70 \mu\text{g}/\text{m}^3$ and $11 \mu\text{g}/\text{m}^3$;
- Trans-1,3-dichloropropane was detected in VP-4 at a concentration of $9.1 \mu\text{g}/\text{m}^3$;

- Ethanol was detected in the vapor sample collected from VP-4 at a concentration of $170 \mu\text{g}/\text{m}^3$;
- Ethyl tertiary butyl ether (ETBE) was detected in the vapor samples collected from VP-1 and VP-3 at concentration of $140 \mu\text{g}/\text{m}^3$ and $2.3 \mu\text{g}/\text{m}^3$;
- 4-ethyltoluene was detected in all four vapor samples at a maximum concentration of $65 \mu\text{g}/\text{m}^3$ (VP-1);
- Heptane was detected in all four vapor samples at a maximum concentration of $140 \mu\text{g}/\text{m}^3$ (VP-4);
- Hexane was detected in vapor samples VP-1, VP-3 and VP-4 at a maximum concentration of $130 \mu\text{g}/\text{m}^3$ (VP-1 and VP-4);
- 2-Hexanone was detected in vapor samples VP-3 and VP-4 at concentrations of $2.3 \mu\text{g}/\text{m}^3$ and $6.6 \mu\text{g}/\text{m}^3$;
- 4-Methyl-2-pentanone (MIBK) was detected in vapor sample VP-4 at a concentration of $5.7 \mu\text{g}/\text{m}^3$;
- Methylene chloride was detected in vapor sample VP-2 at a concentration of $3.2 \mu\text{g}/\text{m}^3$;
- Methyl methacrylate was detected in vapor sample VP-4 at concentration of $2.6 \mu\text{g}/\text{m}^3$;
- Styrene was detected in all four vapor samples at a maximum concentration of $8.7 \mu\text{g}/\text{m}^3$;
- Tetrachloroethene (PCE) was detected in all four vapor samples at a maximum concentration of $130,000 \mu\text{g}/\text{m}^3$ (VP-1);
- Tetrahydrofuran was detected in the vapor sample collected from VP-3 at a concentration of $14 \mu\text{g}/\text{m}^3$;
- Trichloroethene (TCE) was detected in all four vapor samples at a maximum concentration of $160,000 \mu\text{g}/\text{m}^3$ (VP-1);
- Trichlorofluoromethane was detected in all four vapor samples at a maximum concentration of $61 \mu\text{g}/\text{m}^3$ (VP-1);
- 1,2,4-trimethylbenzene was detected in all four vapor samples at a maximum concentration of $150 \mu\text{g}/\text{m}^3$ (VP-1);
- 1,3,5-trimethylbenzene was detected in all four vapor samples at a maximum concentration of $56 \mu\text{g}/\text{m}^3$ (VP1);
- Vinyl chloride was detected in VP-1, VP-3 and VP-4 at a maximum concentration of $1,000 \mu\text{g}/\text{m}^3$ (VP-1 and VP-4); and

No other analytes were reported in the analyzed soil-vapor samples. Selected analytical results of soil-vapor samples are summarized in Table 1. Laboratory report (MAI Work Order No. 1407290), QA/QC reports and chain of custody forms are included in Appendix D. The laboratory EDF file was QA/QC checked and uploaded to the state GeoTracker database under confirmation number 3995841324.

4.0. CONCLUSIONS

Based upon the findings of this investigation, AGE concludes the following:

- Petroleum hydrocarbon constituents BTEX were detected in all four of the soil-vapor samples collected during the July 2014 investigation. All constituents were below San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for a commercial setting (Table 1);
- Chlorinated hydrocarbon constituents PCE and TCE were detected at elevated concentrations above ESLs in all vapor samples collected during the July 2014 investigation (Table 1 and Figure 3);
- A total of twenty-three other constituents were detected at low concentrations in selected samples during the July 2014 investigation (Appendix D);
- Tracer gas IPA was not detected in any of the samples collected during the investigation. Based on the general absence of tracer gas in the soil-vapor samples, it appears that vapor samples collected adequately represent subsurface conditions at the site (Table 1);
- Although concentrations in the area of the former dry cleaning unit (near VP-1) are significantly lower than concentrations originally reported in the sample collected at SG-5 (pre-remediation), chlorinated hydrocarbon constituents were reported at elevated levels in samples collected at the southern edge of the building (Table 1 and Figure 3);
- Based on chlorinated hydrocarbon impact reported in soil-vapor samples collected during the July 2014 investigation, and a comparison of historical shallow soil data, a significant adsorbed mass appears to be located at the southern edge of the property in soils at five feet bsg (Figure 4). Previously utilized/installed soil vapor extraction (SVE) wells were screened from five to twenty feet bsg which targeted the lower vadose zone above the groundwater table. Furthermore, remediation did not capture all of the shallow soil-vapor impact encountered during historical investigation at five feet bsg, which appears to be the source for the elevated vapor concentrations encountered during the July 2014 investigation.

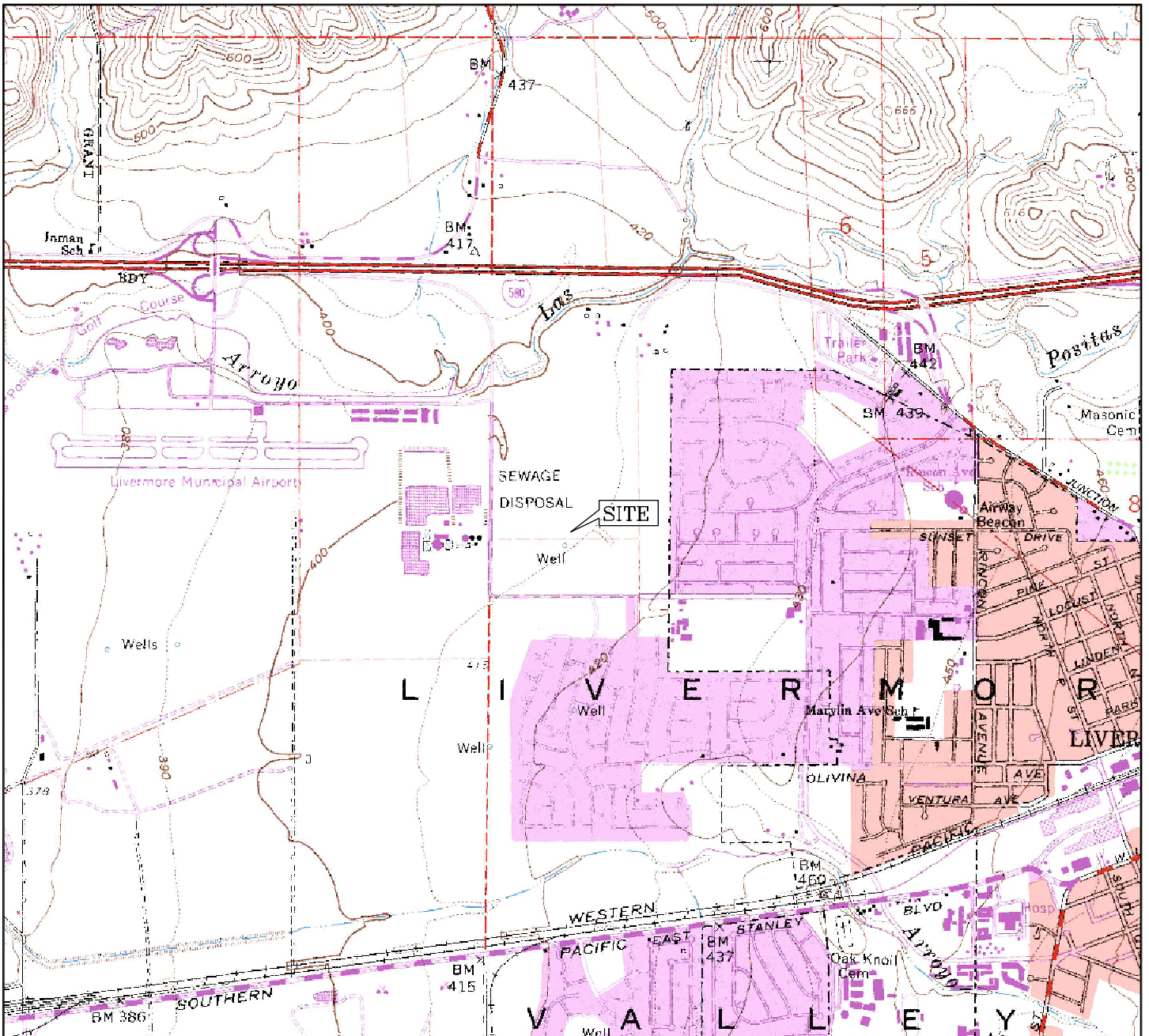
5.0. RECOMMENDATIONS

Based on the results of this and historical investigations, AGE recommends preparation of a human health risk assessment of the residual soil-vapor contamination and the residual remaining chlorinated hydrocarbon impact in shallow soils at the site.

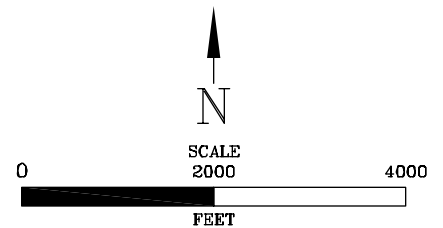
6.0. LIMITATIONS

Our professional services were performed using the degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar localities. The findings were based mainly upon analytical results provided by an independent laboratory. Evaluations of the geologic/ hydrogeologic conditions at the site for the purpose of this investigation are made from a limited number of available data points (i.e. soil-vapor samples) and subsurface conditions may vary away from these data points. No other warranty, expressed or implied, is made as to the professional recommendations contained in this report.

FIGURES



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



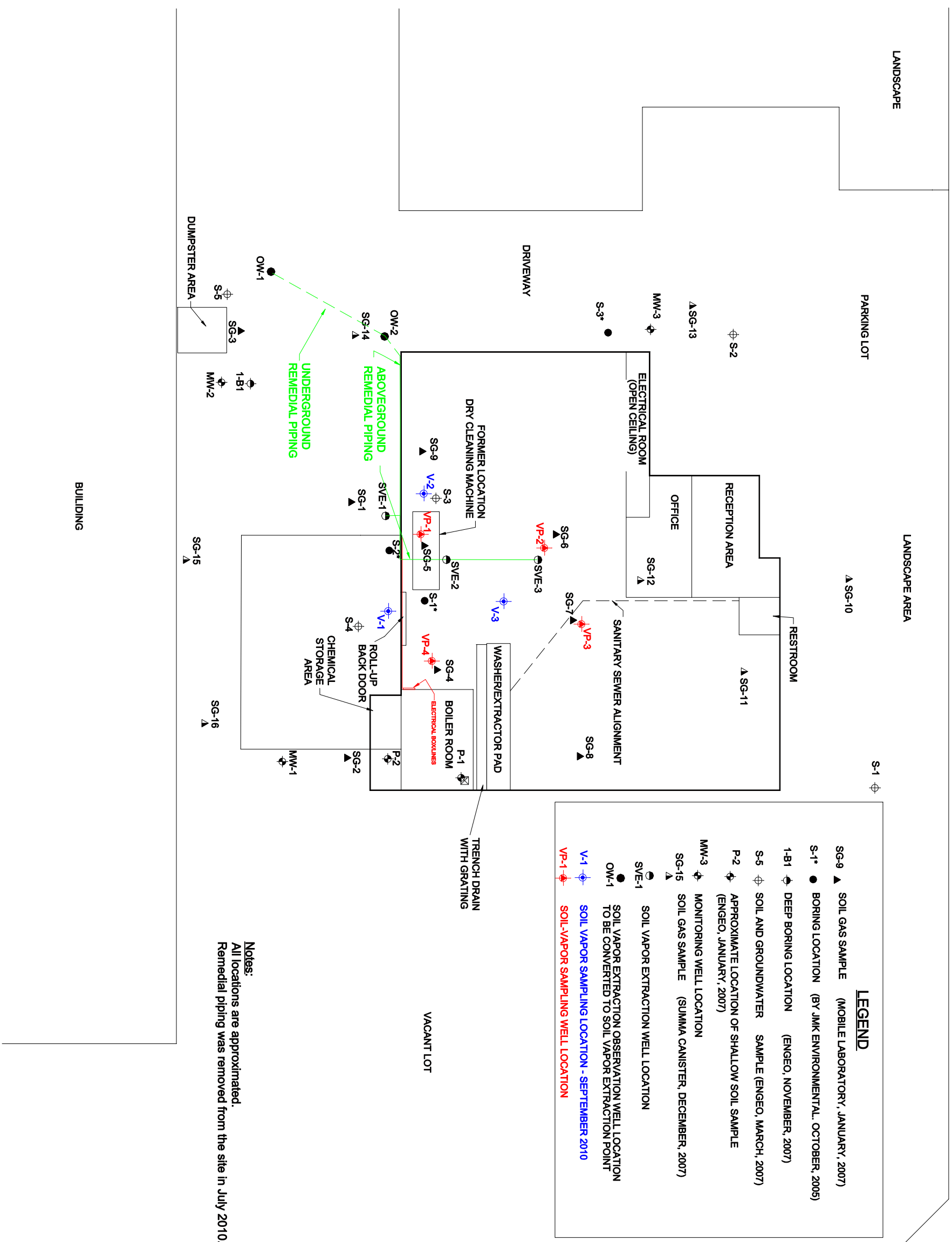
LOCATION MAP
 METRO VALLEY CLEANERS
 224 RICKENBACKER CIRCLE
 LIVERMORE, CALIFORNIA



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



LEGEND

- SG-9 ▲ SOIL GAS SAMPLE (MOBILE LABORATORY, JANUARY, 2007)
- S-1* ● BORING LOCATION (BY JMK ENVIRONMENTAL, OCTOBER, 2005)
- 1-B1 ◆ DEEP BORING LOCATION (ENGEQ, NOVEMBER, 2007)
- S-5 ◆ SOIL AND GROUNDWATER SAMPLE (ENGEQ, MARCH, 2007)
- P-2 ◆ APPROXIMATE LOCATION OF SHALLOW SOIL SAMPLE (ENGEQ, JANUARY, 2007)
- MMW-3 ◆ MONITORING WELL LOCATION
- SG-15 ▲ SOIL GAS SAMPLE (SUMMA CANISTER, DECEMBER, 2007)
- SVE-1 ◆ SOIL VAPOR EXTRACTION WELL LOCATION
- OW-1 ● SOIL VAPOR EXTRACTION OBSERVATION WELL LOCATION TO BE CONVERTED TO SOIL VAPOR EXTRACTION POINT
- V-1 ◆ SOIL VAPOR SAMPLING LOCATION - SEPTEMBER 2010
- VP-4 ◆ SOIL-VAPOR SAMPLING WELL LOCATION

Notes:
 All locations are approximated.
 Remedial piping was removed from the site in July 2010.

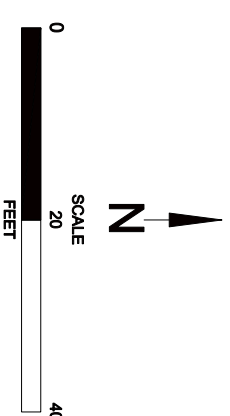
RICKENBACKER CIRCLE

SITE PLAN
 METRO VALLEY CLEANERS
 224 RICKENBACKER CIRCLE
 LIVERMORE, CALIFORNIA

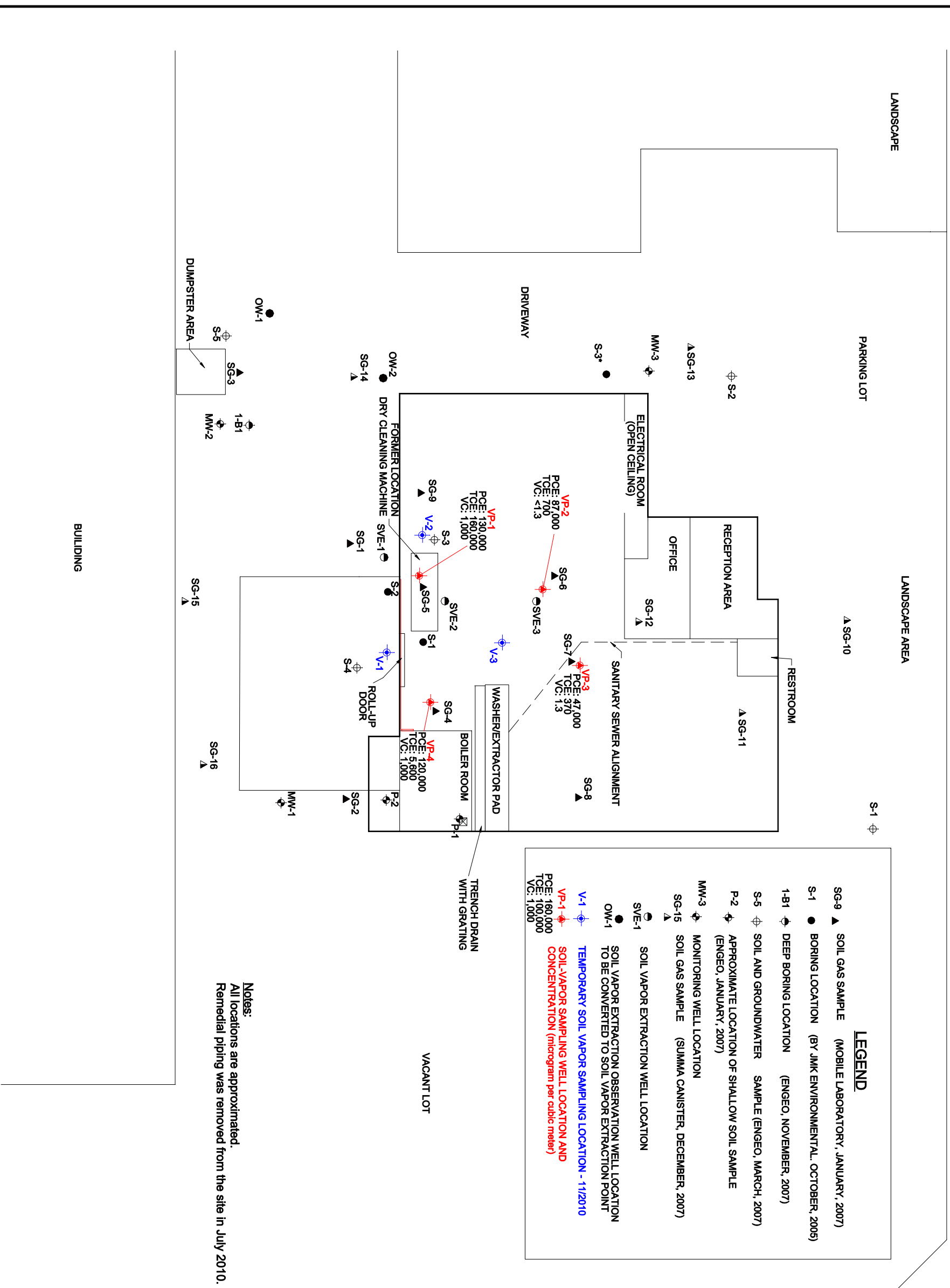


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PROJECT NO. AGE 08-1640	FILE: SP2014	FIGURE: 2
DATE: JULY 2014	DRAWN BY: MAC	



RICKENBACKER PLACE

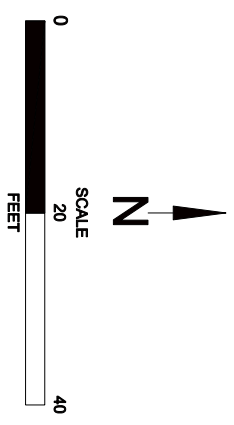


LEGEND

- ▲ SG-9 SOIL GAS SAMPLE (MOBILE LABORATORY, JANUARY, 2007)
- S-1 BORING LOCATION (BY JMK ENVIRONMENTAL, OCTOBER, 2005)
- ◆ 1-B1 DEEP BORING LOCATION (ENGEQ, NOVEMBER, 2007)
- ⊕ S-5 SOIL AND GROUNDWATER SAMPLE (ENGEQ, MARCH, 2007)
- ⊕ P-2 APPROXIMATE LOCATION OF SHALLOW SOIL SAMPLE (ENGEQ, JANUARY, 2007)
- ⊕ MMW-3 MONITORING WELL LOCATION
- ▲ SG-15 SOIL GAS SAMPLE (SUMMA CANISTER, DECEMBER, 2007)
- ⊕ SVE-1 SOIL VAPOR EXTRACTION WELL LOCATION
- OW-1 SOIL VAPOR EXTRACTION OBSERVATION WELL LOCATION TO BE CONVERTED TO SOIL VAPOR EXTRACTION POINT
- ⊕ V-1 TEMPORARY SOIL VAPOR SAMPLING LOCATION - 11/2010
- ⊕ VP-1 SOIL-VAPOR SAMPLING WELL LOCATION AND CONCENTRATION (microgram per cubic meter)

Notes:
 All locations are approximated.
 Remedial piping was removed from the site in July 2010.

RICKENBACKER CIRCLE

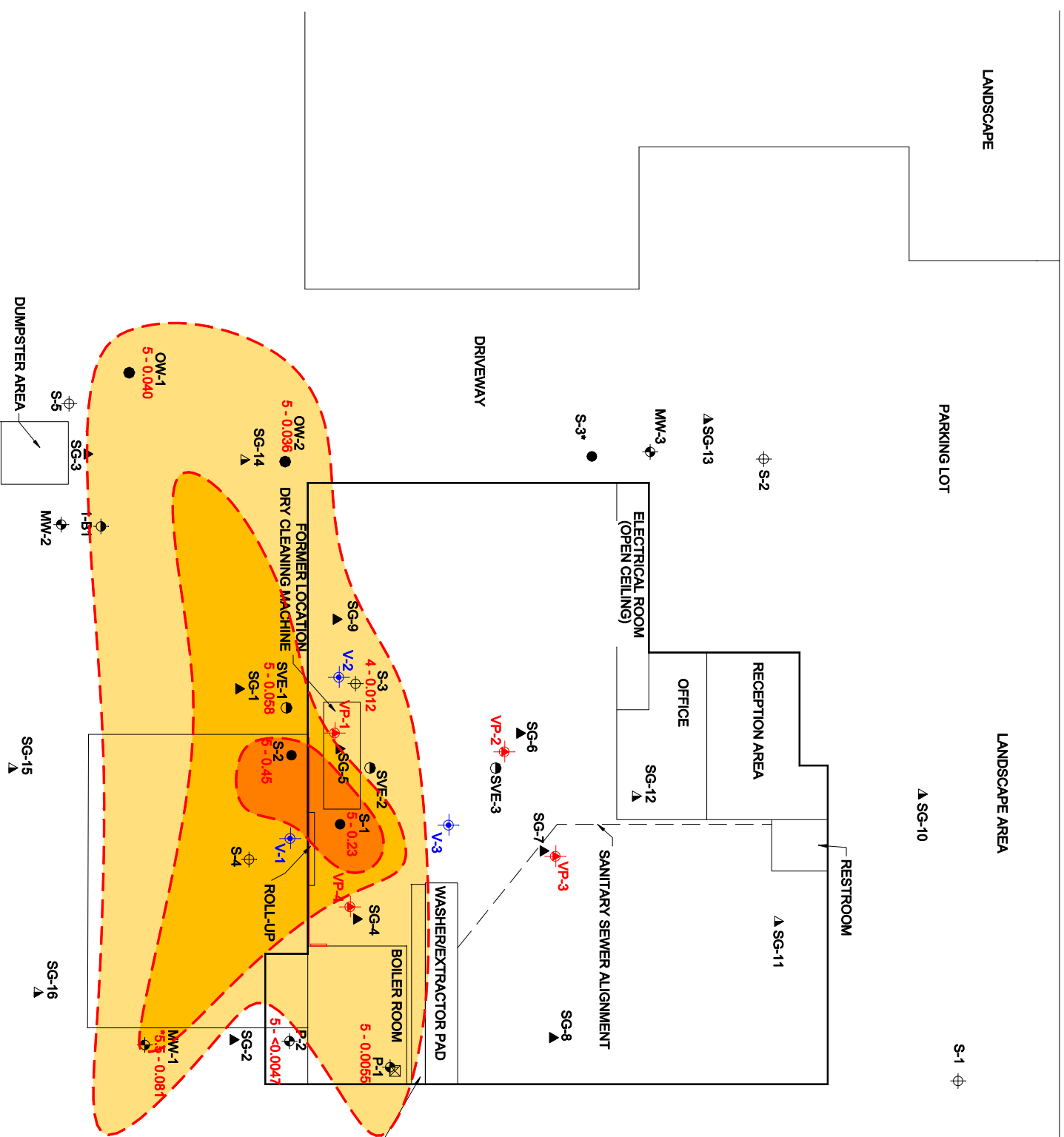


LATERAL DISTRIBUTION OF HYDROCARBONS IN SOIL-VAPOR
 METRO VALLEY CLEANERS
 224 RICKENBACKER CIRCLE
 LIVERMORE, CALIFORNIA

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PROJECT NO. AGE 08-1640	FILE: SP2014	FIGURE: 3
DATE: JULY 2014	DRAWN BY: MAC	

RICKENBACKER PLACE



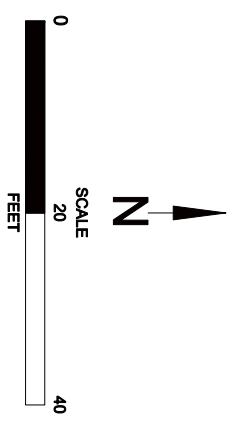
LEGEND

- SG-9 ▲ SOIL GAS SAMPLE (MOBILE LABORATORY, JANUARY, 2007)
- S-1 ● BORING LOCATION, SAMPLE DEPTH AND PCE CONCENTRATION (mg/kg)
5 - 0.01
- 1-B1 ● DEEP BORING LOCATION
- S-5 ⊕ SOIL AND GROUNDWATER SAMPLE LOCATION, DEPTH AND PCE CONCENTRATION (mg/kg)
5 - 0.01
- P-2 ⊕ APPROXIMATE LOCATION OF SHALLOW SOIL SAMPLE, DEPTH AND PCE CONCENTRATION (mg/kg)
5 - 0.01
- MW-3 ⊕ MONITORING WELL LOCATION, SAMPLE DEPTH AND PCE CONCENTRATION (mg/kg)
5 - 0.01
- SG-15 ▲ SOIL GAS SAMPLE (SUMMA CANISTER, DECEMBER, 2007)
- SVE-1 ● SOIL VAPOR EXTRACTION WELL LOCATION
- OW-1 ● SOIL VAPOR EXTRACTION OBSERVATION WELL LOCATION CONVERTED TO SOIL VAPOR EXTRACTION POINT
- V-1 ● SOIL VAPOR SAMPLING LOCATION - SEPTEMBER 2010
- VP-1 ● SOIL VAPOR SAMPLING WELL LOCATION
- ESTIMATED LATERAL EXTENT OF ADSORBED PCE IMPACT
- ESTIMATED AREA OF PCE IMPACT GREATER THAN 0.10 mg/kg
- ESTIMATED AREA OF PCE IMPACT GREATER THAN 0.050 mg/kg
- ESTIMATED AREA OF PCE IMPACT GREATER THAN 0.010 mg/kg


Notes:
mg/kg: milligrams per kilogram
PCE: Tetrachloroethene

Notes:
All locations are approximated.
Remedial piping was removed from the site in July 2010.

RICKENBACKER CIRCLE



LATERAL EXTENT OF ADSORBED PCE 4 TO 5 FEET BSG
METRO VALLEY CLEANERS
224 RICKENBACKER CIRCLE
LIVERMORE, CALIFORNIA

 Advanced GeoEnvironmental, Inc. www.advgeoenv.com		FIGURE: 4
PROJECT NO. AGE 08-1640	FILE: SP2014	DRAWN BY: MAC
DATE: JULY 2014		

TABLES

TABLE 1
SOIL-VAPOR ANALYTICAL DATA
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, CA
($\mu\text{g}/\text{m}^3$)

Sample ID	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	Benzene	Toluene	Ethylbenzene	Total Xylenes	Tracer Compound
EPA METHOD 8260 / Mobile Laboratory / Syringe Sampling ¹												
SG-1	01/22/07	16,000	150	<100	<100	<100	<100	<100	<100	<100	<100	<100
SG-2	01/22/07	15,000	480	<100	<100	<100	<100	<100	320	<100	120	<100
SG-3	01/22/07	38,000	18,000	<100	<100	17,000	<100	<100	220	<100	<100	<100
SG-4	01/22/07	11,000	1,200	<100	<100	450	<100	<100	210	<100	<100	<100
SG-5	01/22/07	860,000	4,600,000	4,700	140,000	780,000	1,800	<100	<100	<100	<100	<100
SG-6	01/22/07	25,000	1,300	<100	<100	<100	<100	<100	250	<100	<100	<100
SG-7	01/22/07	5,700	3,000	<100	<100	470	<100	<100	550	120	450	<100
SG-8	01/22/07	4,300	310	<100	<100	<100	<100	<100	270	<100	100	<100
SG-9	01/22/07	4,100	3,100	<100	500	1,700	<100	<100	270	<100	130	<100
EPA METHOD TO-15 / Summa Cannisters ²												
SG-10	12/17/07	<2.1	<0.86	<1.3	<0.90	<0.90	<0.40	2.8	31	<0.51	48	<2.7
SG-11	12/17/07	64	<0.83	<1.3	<0.88	<0.88	<0.39	3.5	25	<0.48	49	<2.6
SG-12	12/17/07	10	<0.82	<1.2	<0.86	<0.86	<0.39	2.5	16	<0.48	31.4	<2.6
SG-12 ³	12/17/07	8.7	<0.78	<1.2	<0.82	<0.82	<0.37	2.2	14	<0.46	26.3	<2.6
SG-13	12/17/07	<1.3	<0.55	<0.79	<0.55	<0.55	<0.25	3.1	48	<0.31	43.2	<1.6
SG-14	12/17/07	<2.0	<0.87	<1.2	<0.87	<0.87	<0.39	<1.4	3.3	1.7	8.0	<2.6
SG-15	12/17/07	<1.9	<0.77	<1.2	<0.81	<0.81	<0.37	4.0	68	<0.46	50	<2.4
SG-16	12/17/07	15	22	<1.2	8.2	7.9	<0.37	6.6	30	8.2	59	
V-1A	09/02/10	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0	<2.5	<2.5	<2.5	<2.5	<2.5
V-2A	09/02/10	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0	<2.5	<2.5	<2.5	<2.5	<2.5
V-3A	09/02/10	<2.5	<2.5	<2.5	<2.5	<2.5	<1.0	<2.5	<2.5	<2.5	<2.5	<2.5
VP-1	07/08/14	130,000	160,000	2,200	250,000	330,000	1,000	240	880	190	940	<200
VP-2	07/08/14	87,000	700	5.8	300	500	<1.3	41	240	48	230	<50
VP-3	07/08/14	47,000	370	5.1	120	220	1.3	6.6	250	58	260	<50
VP-4	07/08/14	120,000	5,600	380	9.1	13,000	1,000	120	460	97	440	<50
ESL:		2,100	3,000	880,000	2,600,000	-	160	420	1,300,00	580,000	440,000	-
CHHSL:		180	528	--	31,900	1,590	13.3	36.2	135,000	--	315,000	--

Notes:
 $\mu\text{g}/\text{m}^3$ micrograms per cubic meter
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
<: Indicates constituents were not detected at a concentration greater than the laboratory reporting limit shown.
Note 1: Tracer compound: 1,1-difluoroethane
Note 2: Tracer compound: isopropanol
Note 3: duplicate sample
ESL: San Francisco Bay Regional Water Quality Control Board California Environmental Protection Agency Environmental Screening Level (soil gas) for commercial/industrial land use.
-: indicates there is no ESL for the listed constituent
CHHSL: California Human Health Screening Levels (soil gas) for commercial/industrial land use.
--: indicates there is no CHHSL for the listed constituent.

TABLE 2
SOIL ANALYTICAL DATA - EPA METHODS 8260B / 8015B
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, CA
(mg/kg)

Sample ID	Depth (ft bsg)	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	TPH-g	TPH-d	TPH-mo
S-1-5*	5	10/25/05	0.23	<0.012	<0.012	<0.012	<0.012	<0.012	-	-	-
S-1-10*	10	10/25/05	0.032	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-1-15*	15	10/25/05	0.031	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-1-25*	25	10/25/05	0.057	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-1-35*	35	10/25/05	0.029	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-5*	5	10/25/05	0.45	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-10*	10	10/25/05	0.059	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-15*	15	10/25/05	0.036	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-25*	25	10/25/05	0.048	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-2-35*	35	10/25/05	0.023	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-3-25*	25	10/25/05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
S-3-35*	35	10/25/05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
P-1@1	1	01/22/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.24	2.6	<48
P-1@5	5	01/22/07	0.0055	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	190	1,000
P-2@1	1	01/22/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.24	2.9	<49
P-2@5	5	01/22/07	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.25	<0.99	<50
S-1@24#	24	03/02/07	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045	<0.24	<0.96	<48
S-2@26#	26	03/02/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.22	11	<48
S-3@2#	2	03/01/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	0.33	4.5	<47
S-3@4#	4	03/01/07	0.012	0.013	<0.0049	0.014	0.061	<0.0049	<0.23	1.0	<46
S-3@8#	8	03/01/07	0.079	0.0066	<0.0048	<0.0048	<0.0048	<0.0048	<0.24	<0.96	<48
S-3@10#	10	03/01/07	0.023	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.23	13	<47
S-3@27#	27	03/01/07	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.22	<0.99	<49
S-4@25#	25	03/01/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<0.98	<49
S-5@30#	30	03/01/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.22	1.0	<46
1-B1/S-10	10	11/27/07	0.079	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<1.0	<50
1-B1/S-20	20	11/27/07	0.017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.24	17	<50
1-B1/S-30	30	11/27/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.24	<0.99	<50
1-B1/S-40	40	11/27/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.25	<0.99	<49
1-B1/S-50	50	11/27/07	0.014	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	1.1	<49
1-B1/S-60	60	11/27/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.23	<0.99	<50
1-B1/S-70	70	11/27/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.24	<0.98	<49
1-B1/S-80	80	11/27/07	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<1.0	<50
1-B1/S-90	90	11/27/07	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.24	<0.99	<50
MWB1	5.5	12/18/07	0.081	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.23	<1.0	<50
MWB1	10.5	12/18/07	0.068	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.23	<1.0	<50
MWB2	25.5	12/18/07	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.24	<1.0	<50

TABLE 2
SOIL ANALYTICAL DATA - EPA METHODS 8260B / 8015B
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, CA
(mg/kg)

Sample ID	Depth (ft bsg)	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	TPH-g	TPH-d	TPH-mo
MW-3	26	12/19/07	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.23	2.2	<49
SVE-1-5	5	01/08/09	0.058	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
SVE-1-10	10	01/08/09	0.011	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
SVE-1-15	15	01/08/09	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
OW-1-5	5	01/08/09	0.040	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
OW-2-5	5	01/08/09	0.036	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
OW-2-10	10	01/08/09	0.026	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	-
SVE-2-20	20	12/07/09	0.010	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
SVE-3-10	10	12/07/09	0.0094	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
SVE-3-20	20	12/07/09	0.0082	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
<i>ESLs (Shallow Soil):</i>			<i>0.7</i>	<i>0.46</i>	<i>1.0</i>	<i>0.67</i>	<i>0.19</i>	<i>0.047</i>	<i>83</i>	<i>83</i>	<i>2,500</i>
<i>ESLs (Deep Soil):</i>			<i>0.7</i>	<i>0.46</i>	<i>1.0</i>	<i>0.67</i>	<i>0.19</i>	<i>0.085</i>	<i>83</i>	<i>83</i>	<i>5,000</i>

Notes:

- mg/kg: milligrams per kilogram
- ft bsg: feet below surface grade
- <: Indicates constituents were not detected at a concentration greater than the reporting limit shown.
- 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
- *: borings advanced by JML Environmental Solutions in 2005
- #: borings advanced by ENGEO in 2007
- : not analyzed
- ESL: San Francisco Bay Regional Water Quality Control Board California Environmental Protection Agency Environmental Screening Level (soil) for commercial/industrial land use.

- Shallow soil: soil samples collected at maximum depths of 3 meters below surface grade
- Deep Soil: soil samples collected at depths greater than 3 meters below surface grade

APPENDIX A



ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 9, 2014

Mr. Lawrence Hancock
Country Club Cleaners
500 Bollinger Canyon Way #A4
San Ramon, CA 94582
(Sent via E-mail to: larry@blueskycleanersca.com)

Mr. Mark Ratto
Peter J. Ratto Trust
670 W. Fruit Cive Forest Road
Jacksonville, FL 32259

Mr. Robert Strong
Country Club Cleaners
500 Bollinger Canyon Way #A4
San Ramon, CA 94582
(Sent via E-mail to: bob@blueskycleanersca.com)

Subject: Conditional Work Plan Approval for SLIC Case RO0002913 and GeoTracker Global ID T06019748481, Perciva/Metro Valley Cleaners, 224 Rickenbacker Circle, Livermore, CA 94550

Dear Mr. Hancock, Mr. Strong, and Mr. Ratto:

County Environmental Health (ACEH) staff has reviewed the Spills, Leaks, Investigations, and Cleanups (SLIC) case file for the above-referenced site including the recently submitted documents entitled, "*Soil Vapor Investigation Work Plan*," dated May 28, 2014 (Work Plan). The Work Plan, which was prepared on your behalf by Advanced GeoEnvironmental, Inc., presents plans to install and sample three soil vapor probes. The Work Plan was submitted in response to ACEH correspondence dated August 29, 2013, which requested that additional soil vapor sampling be conducted to confirm that soil vapor beneath the building does not pose a risk for vapor intrusion.

The proposed scope of work for soil vapor probe installation and sampling in the Work Plan is conditionally approved and may be implemented provided that the technical comments below are incorporated during the site investigation. Submittal of a revised Work Plan is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed. We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Soil Vapor Probe Locations.** We request that the proposed soil vapor well adjacent to former sampling location V-1 be moved adjacent to former soil gas sampling location SG-4. We request that the proposed soil vapor well adjacent to former sampling location V-3 be moved adjacent to former soil gas sampling location SG-6. The proposed soil vapor sampling well adjacent to former sampling location SG-5 is acceptable. We request that one additional soil vapor sample well be installed adjacent to former soil gas sampling location SG-7.

Responsible Parties
RO0002913
June 9, 2014
Page 2

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **October 9, 2014** – Soil Vapor Investigation Report
File to be named: SWI_R_yyyy-mm-dd RO2913

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,



Digitally signed by Jerry Wickham
DN: cn=Jerry Wickham, o=Alameda County Environmental
Health, ou, email=jerry.wickham@acgov.org, c=US
Date: 2014.06.10 08:54:42 -07'00'

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Danielle Stefani, Livermore Pleasanton Fire Department, 3560 Nevada St, Pleasanton, CA 94566
(Sent via E-mail to: dstefani@lpfire.org)

Colleen Winey (QIC 8021), Zone 7 Water Agency, 100 North Canyons Pkwy, Livermore, CA 94551
(Sent via E-mail to: cwiney@zone7water.com)

Daniel Villanueva, Advanced GeoEnvironmental, Inc., 837 Shaw Road, Stockton, CA 95215
(Sent via E-mail to: dvillanueva@advgeoenv.com)

Paul Smith, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566 (Sent via E-mail to: psmith@lpfire.org)

Jerry Wickham, ACEH (Sent via E-mail to: jerry.wickham@acgov.org)

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	REVISION DATE: May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection.**
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document.** Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

- 1) Obtain User Name and Password
 - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
 - i) Send an e-mail to deh.loptoxic@acgov.org
 - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
 - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
 - (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
 - b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
 - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
 - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
 - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
 - a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
 - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
 - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
 - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B



ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-9306
E-MAIL whong@zone7water.com

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 224 Sickenbacher Circle, Livermore, CA, 94551

PERMIT NUMBER 2014093

WELL NUMBER _____

APN 99-1316-032-00

Coordinates Source _____ ft. Accuracy v _____ ft.
LAT: _____ ft. LONG: _____ ft.
APN _____

PERMIT CONDITIONS
(Circled Permit Requirements Apply)

CLIENT
Name Robert Strong (Metro Valley Cleaners)
Address 500 Hollinger Canyon Way #A4 Phone 925-250-2894
City San Ramon Zip 94582

- (A) GENERAL**
 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to your proposed starting date.
 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report (DWR Form 168), signed by the driller.
 3. Permit is void if project not begun within 90 days of approval date.
 4. Notify Zone 7 at least 24 hours before the start of work.

APPLICANT
Name Advanced GeoEnvironmental Inc. (William R. Little)
Email wlittle@aeg-geoenv.com Fax 925-457-3110
Address 237 Shaw Road Phone 925-457-1005
City Stockton Zip 95215

- B. WATER SUPPLY WELLS**
 1. Minimum surface seal diameter is four inches greater than the well casing diameter.
 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
 3. Grout placed by tremie.
 4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
 5. A sample port is required on the discharge pipe near the wellhead.

TYPE OF PROJECT:
Well Construction _____ Geotechnical Investigation _____
Well Destruction _____ Contamination Investigation x
Cathodic Protection _____ Other _____

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
 1. Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
 3. Grout placed by tremie.

PROPOSED WELL USE:
Domestic _____ Irrigation _____
Municipal _____ Remediation _____
Industrial _____ Groundwater Monitoring _____
Dewatering _____ Other Soil-Vapor Well 4

- D. GEOTECHNICAL.** Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, trenched cement grout shall be used in place of compacted cuttings.

DRILLING METHOD:
Mud Rotary _____ Air Rotary _____ Hollow Stem Auger _____
Cable Tool _____ Direct Push _____ Other hand auger x

- E. CATHODIC.** Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION.** See attached.

DRILLING COMPANY Advanced GeoEnvironmental Inc.

DRILLER'S LICENSE NO. 680227

- (G) SPECIAL CONDITIONS.** Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.

WELL SPECIFICATIONS:
Drill Hole Diameter 4 in. Maximum _____
Casing Diameter 1/4 (tubing) in. Depth 5 ft.
Surface Seal Depth 4 ft. Number 4

SOIL BORINGS:
Number of Borings _____ Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 30 June 2014
ESTIMATED COMPLETION DATE 30 June 2014

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-88.

APPLICANT'S SIGNATURE William Little Date 06/12/2014

Approved Wyman Hong Date 6/30/14
Wyman Hong

ATTACH SITE PLAN OR SKETCH

APPENDIX C

APPENDIX C
PURGE VOLUME CALCULATIONS
Metro Valley Cleaners
224 Rickenbacker Circle, Livermore, California

Purge Calculations:

1. Tubing (0.25" OD, 0.17" ID)

a. length of tubing = 8 ft (96 in)

b. volume= $\pi r^2 h$

$r = ID/2$	0.085 in
$\pi(0.085^2)96 =$	2.18 in ³
$1 \text{ in}^3 = 16.4 \text{ ml}$	35.72 ml

2. Volume of sand pack and dry bentonite (4" OD, 0.25" ID)

a. height (length) = 1 ft (12 in)

b. Outer vol=total vol-inner vol $4"-0.25" = 3.75"$

c. estimated air space in sand = 30%

d. $v_T = \pi r^2 h$

$r = 3.75/2$	1.875 in
$\pi(2^2)12 =$	132.47 in ³
$1 \text{ in}^3 = 16.4 \text{ ml}$	2,172.49 ml
30% of v_T	651.75 ml

Volume Formula:

A= # of purge volumes	1
B= volume of tubing	35.72 ml
C= volume of well	0.00 ml
D= volume of sand pack	651.75 ml
E= total volume to be purged	

E= A(B+C+D)

E= 1(22.32+741.54)

Total volume to be purged=	687.46 ml
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APPENDIX D



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1407290

Report Created for: Advanced GeoEnvironmental, Inc.
837 Shaw Road
Stockton, CA 95215

Project Contact: Daniel Villanueva
Project P.O.:
Project Name: Metro Valley Cleaners

Project Received: 07/09/2014

Analytical Report reviewed & approved for release on 07/18/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
WorkOrder: 1407290

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Quality Control Qualifiers

F2 LCS recovery for this compound is outside of acceptance limits.



Case Narrative

Client: Advanced GeoEnvironmental, Inc.

Work Order: 1407290

Project: Metro Valley Cleaners

July 18, 2014

TO-15 ANALYSIS

All summa canisters are EVACUATED 5 days after the reporting of the results. Please call or email if a longer retention time is required.

In an effort to attain the lowest reporting limits possible for the majority of the TO-15 target list, high level compounds may be analyzed using EPA Method 8260B.

Polymer (Tedlar) bags are not recommended for TO15 samples. The disadvantages are listed in Appendix B of the DTSC Advisory of April 2012.



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/16/14-7/17/14

WorkOrder: 1407290
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/m³

Volatile Organics by P&T and GC/MS in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-1	1407290-001A	Soil Gas	07/08/2014 10:17	GC10	92838

Initial Pressure (psia)	Final Pressure (psia)
13.41	26.86

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	330,000	20,000	40	07/17/2014 15:34
trans-1,2-Dichloroethene	250,000	20,000	40	07/17/2014 15:34
Tetrachloroethene	130,000	20,000	40	07/17/2014 15:34
Trichloroethene	160,000	20,000	40	07/17/2014 15:34

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	94	70-130	07/17/2014 15:34
Toluene-d8	97	70-130	07/17/2014 15:34

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-2	1407290-002A	Soil Gas	07/08/2014 10:53	GC28	92838

Initial Pressure (psia)	Final Pressure (psia)
13.34	26.66

Analytes	Result	RL	DF	Date Analyzed
Tetrachloroethene	87,000	2000	4	07/16/2014 17:10

Surrogates	REC (%)	Limits	Date Analyzed
Toluene-d8	92	70-130	07/16/2014 17:10

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-3	1407290-003A	Soil Gas	07/08/2014 11:31	GC28	92838

Initial Pressure (psia)	Final Pressure (psia)
13.08	26.18

Analytes	Result	RL	DF	Date Analyzed
Tetrachloroethene	47,000	2000	4	07/16/2014 17:49

Surrogates	REC (%)	Limits	Date Analyzed
Toluene-d8	84	70-130	07/16/2014 17:49

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/16/14-7/17/14

WorkOrder: 1407290
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/m³

Volatile Organics by P&T and GC/MS in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-4	1407290-004A	Soil Gas	07/08/2014 12:10	GC28	92838

Initial Pressure (psia)	Final Pressure (psia)
12.86	25.73

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	13,000	2000	4	07/16/2014 20:23
trans-1,2-Dichloroethene	6800	2000	4	07/16/2014 20:23
Tetrachloroethene	120,000	2000	4	07/16/2014 20:23
Trichloroethene	5600	2000	4	07/16/2014 20:23

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	88	70-130	07/16/2014 20:23
Toluene-d8	93	70-130	07/16/2014 20:23



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Leak Check Compound

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-1	1407290-001A	Soil Gas	07/08/2014 10:17	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.41	26.86

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	200	4	07/14/2014 18:57

VP-2	1407290-002A	Soil Gas	07/08/2014 10:53	GC24	92763
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Initial Pressure (psia)	Final Pressure (psia)
13.34	26.66

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/15/2014 10:07

VP-3	1407290-003A	Soil Gas	07/08/2014 11:31	GC24	92763
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Initial Pressure (psia)	Final Pressure (psia)
13.08	26.18

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/15/2014 10:47

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.

WorkOrder: 1407290

Project: Metro Valley Cleaners

Extraction Method: TO15

Date Received: 7/9/14 20:52

Analytical Method: TO15

Date Prepared: 7/14/14-7/15/14

Unit: µg/m³

Leak Check Compound

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-4	1407290-004A	Soil Gas	07/08/2014 12:10	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
12.84	25.73

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/15/2014 11:26



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-1	1407290-001A	Soil Gas	07/08/2014 10:17	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.41	26.86

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	240	4	07/14/2014 18:57
Acrolein	41	4.6	4	07/14/2014 18:57
Acrylonitrile	ND	4.4	4	07/14/2014 18:57
tert-Amyl methyl ether (TAME)	ND	8.4	4	07/14/2014 18:57
Benzene	240	6.4	4	07/14/2014 18:57
Benzyl chloride	ND	11	4	07/14/2014 18:57
Bromodichloromethane	ND	14	4	07/14/2014 18:57
Bromoform	ND	21	4	07/14/2014 18:57
Bromomethane	ND	7.8	4	07/14/2014 18:57
1,3-Butadiene	ND	4.4	4	07/14/2014 18:57
2-Butanone (MEK)	ND	300	4	07/14/2014 18:57
t-Butyl alcohol (TBA)	ND	120	4	07/14/2014 18:57
Carbon Disulfide	220	6.4	4	07/14/2014 18:57
Carbon Tetrachloride	ND	13	4	07/14/2014 18:57
Chlorobenzene	ND	9.4	4	07/14/2014 18:57
Chloroethane	ND	5.4	4	07/14/2014 18:57
Chloroform	100	9.8	4	07/14/2014 18:57
Chloromethane	24	4.2	4	07/14/2014 18:57
Cyclohexane	99	70	4	07/14/2014 18:57
Dibromochloromethane	ND	17	4	07/14/2014 18:57
1,2-Dibromo-3-chloropropane	ND	0.49	4	07/14/2014 18:57
1,2-Dibromoethane (EDB)	ND	16	4	07/14/2014 18:57
1,2-Dichlorobenzene	ND	12	4	07/14/2014 18:57
1,3-Dichlorobenzene	ND	12	4	07/14/2014 18:57
1,4-Dichlorobenzene	ND	12	4	07/14/2014 18:57
Dichlorodifluoromethane	180	10	4	07/14/2014 18:57
1,1-Dichloroethane	ND	8.2	4	07/14/2014 18:57
1,2-Dichloroethane (1,2-DCA)	ND	8.2	4	07/14/2014 18:57
1,1-Dichloroethene	2200	8.0	4	07/14/2014 18:57
1,2-Dichloropropane	70	9.4	4	07/14/2014 18:57
cis-1,3-Dichloropropene	ND	9.2	4	07/14/2014 18:57
trans-1,3-Dichloropropene	ND	9.2	4	07/14/2014 18:57
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	14	4	07/14/2014 18:57
Diisopropyl ether (DIPE)	ND	8.4	4	07/14/2014 18:57

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-1	1407290-001A	Soil Gas	07/08/2014 10:17	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.41	26.86

Analytes	Result	RL	DF	Date Analyzed
1,4-Dioxane	ND	7.4	4	07/14/2014 18:57
Ethanol	ND	380	4	07/14/2014 18:57
Ethyl acetate	ND	7.4	4	07/14/2014 18:57
Ethyl tert-butyl ether (ETBE)	140	8.4	4	07/14/2014 18:57
Ethylbenzene	190	8.8	4	07/14/2014 18:57
4-Ethyltoluene	65	10	4	07/14/2014 18:57
Freon 113	22	16	4	07/14/2014 18:57
Heptane	90	84	4	07/14/2014 18:57
Hexachlorobutadiene	ND	22	4	07/14/2014 18:57
Hexane	130	72	4	07/14/2014 18:57
2-Hexanone	ND	8.4	4	07/14/2014 18:57
4-Methyl-2-pentanone (MIBK)	ND	8.4	4	07/14/2014 18:57
Methyl-t-butyl ether (MTBE)	ND	7.4	4	07/14/2014 18:57
Methylene chloride	ND	7.0	4	07/14/2014 18:57
Methyl methacrylate	ND	8.3	4	07/14/2014 18:57
Naphthalene	ND	21	4	07/14/2014 18:57
Propene	ND	350	4	07/14/2014 18:57
Styrene	8.7	8.6	4	07/14/2014 18:57
1,1,1,2-Tetrachloroethane	ND	14	4	07/14/2014 18:57
1,1,2,2-Tetrachloroethane	ND	14	4	07/14/2014 18:57
Tetrahydrofuran	ND	6.0	4	07/14/2014 18:57
Toluene	880	7.6	4	07/14/2014 18:57
1,2,4-Trichlorobenzene	ND	15	4	07/14/2014 18:57
1,1,1-Trichloroethane	ND	11	4	07/14/2014 18:57
1,1,2-Trichloroethane	ND	11	4	07/14/2014 18:57
Trichlorofluoromethane	61	11	4	07/14/2014 18:57
1,2,4-Trimethylbenzene	150	10	4	07/14/2014 18:57
1,3,5-Trimethylbenzene	56	10	4	07/14/2014 18:57
Vinyl Acetate	ND	7.2	4	07/14/2014 18:57
Vinyl Chloride	1000	5.2	4	07/14/2014 18:57
Xylenes, Total	940	26	4	07/14/2014 18:57

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.

WorkOrder: 1407290

Project: Metro Valley Cleaners

Extraction Method: TO15

Date Received: 7/9/14 20:52

Analytical Method: TO15

Date Prepared: 7/14/14-7/15/14

Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-1	1407290-001A	Soil Gas	07/08/2014 10:17	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.41	26.86

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>			
1,2-DCA-d4	91	70-130		07/14/2014 18:57
Toluene-d8	107	70-130		07/14/2014 18:57
4-BFB	100	70-130		07/14/2014 18:57

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-2	1407290-002A	Soil Gas	07/08/2014 10:53	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.34	26.66

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/15/2014 10:07
Acrolein	ND	1.2	1	07/15/2014 10:07
Acrylonitrile	ND	1.1	1	07/15/2014 10:07
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/15/2014 10:07
Benzene	41	1.6	1	07/15/2014 10:07
Benzyl chloride	ND	2.6	1	07/15/2014 10:07
Bromodichloromethane	ND	3.5	1	07/15/2014 10:07
Bromoform	ND	5.2	1	07/15/2014 10:07
Bromomethane	ND	2.0	1	07/15/2014 10:07
1,3-Butadiene	ND	1.1	1	07/15/2014 10:07
2-Butanone (MEK)	ND	75	1	07/15/2014 10:07
t-Butyl alcohol (TBA)	ND	31	1	07/15/2014 10:07
Carbon Disulfide	6.7	1.6	1	07/15/2014 10:07
Carbon Tetrachloride	ND	3.2	1	07/15/2014 10:07
Chlorobenzene	ND	2.4	1	07/15/2014 10:07
Chloroethane	ND	1.3	1	07/15/2014 10:07
Chloroform	ND	2.4	1	07/15/2014 10:07
Chloromethane	ND	1.0	1	07/15/2014 10:07
Cyclohexane	19	18	1	07/15/2014 10:07
Dibromochloromethane	ND	4.4	1	07/15/2014 10:07
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/15/2014 10:07
1,2-Dibromoethane (EDB)	ND	3.9	1	07/15/2014 10:07
1,2-Dichlorobenzene	ND	3.0	1	07/15/2014 10:07
1,3-Dichlorobenzene	ND	3.0	1	07/15/2014 10:07
1,4-Dichlorobenzene	ND	3.0	1	07/15/2014 10:07
Dichlorodifluoromethane	130	2.5	1	07/15/2014 10:07
1,1-Dichloroethane	ND	2.0	1	07/15/2014 10:07
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/15/2014 10:07
1,1-Dichloroethene	5.8	2.0	1	07/15/2014 10:07
cis-1,2-Dichloroethene	500	2.0	1	07/15/2014 10:07
trans-1,2-Dichloroethene	300	2.0	1	07/15/2014 10:07
1,2-Dichloropropane	ND	2.4	1	07/15/2014 10:07
cis-1,3-Dichloropropene	ND	2.3	1	07/15/2014 10:07
trans-1,3-Dichloropropene	ND	2.3	1	07/15/2014 10:07

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-2	1407290-002A	Soil Gas	07/08/2014 10:53	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.34	26.66

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/15/2014 10:07
Diisopropyl ether (DIPE)	ND	2.1	1	07/15/2014 10:07
1,4-Dioxane	ND	1.8	1	07/15/2014 10:07
Ethanol	ND	96	1	07/15/2014 10:07
Ethyl acetate	ND	1.8	1	07/15/2014 10:07
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/15/2014 10:07
Ethylbenzene	48	2.2	1	07/15/2014 10:07
4-Ethyltoluene	16	2.5	1	07/15/2014 10:07
Freon 113	13	3.9	1	07/15/2014 10:07
Heptane	31	21	1	07/15/2014 10:07
Hexachlorobutadiene	ND	5.4	1	07/15/2014 10:07
Hexane	ND	18	1	07/15/2014 10:07
2-Hexanone	ND	2.1	1	07/15/2014 10:07
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/15/2014 10:07
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/15/2014 10:07
Methylene chloride	3.2	1.8	1	07/15/2014 10:07
Methyl methacrylate	ND	2.1	1	07/15/2014 10:07
Naphthalene	ND	5.3	1	07/15/2014 10:07
Propene	ND	88	1	07/15/2014 10:07
Styrene	2.2	2.2	1	07/15/2014 10:07
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/15/2014 10:07
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/15/2014 10:07
Tetrahydrofuran	ND	1.5	1	07/15/2014 10:07
Toluene	240	1.9	1	07/15/2014 10:07
1,2,4-Trichlorobenzene	ND	3.8	1	07/15/2014 10:07
1,1,1-Trichloroethane	ND	2.8	1	07/15/2014 10:07
1,1,2-Trichloroethane	ND	2.8	1	07/15/2014 10:07
Trichloroethene	700	2.8	1	07/15/2014 10:07
Trichlorofluoromethane	43	2.8	1	07/15/2014 10:07
1,2,4-Trimethylbenzene	48	2.5	1	07/15/2014 10:07
1,3,5-Trimethylbenzene	20	2.5	1	07/15/2014 10:07
Vinyl Acetate	ND	1.8	1	07/15/2014 10:07
Vinyl Chloride	ND	1.3	1	07/15/2014 10:07
Xylenes, Total	230	6.6	1	07/15/2014 10:07

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-2	1407290-002A	Soil Gas	07/08/2014 10:53	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.34	26.66

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>			
1,2-DCA-d4	90	70-130		07/15/2014 10:07
Toluene-d8	110	70-130		07/15/2014 10:07
4-BFB	100	70-130		07/15/2014 10:07

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-3	1407290-003A	Soil Gas	07/08/2014 11:31	GC24	92763

Initial Pressure (psia) **Final Pressure (psia)**

13.08	26.18
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Analytes	Result	RL	DF	Date Analyzed
Acetone	110	60	1	07/15/2014 10:47
Acrolein	12	1.2	1	07/15/2014 10:47
Acrylonitrile	ND	1.1	1	07/15/2014 10:47
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/15/2014 10:47
Benzene	39	1.6	1	07/15/2014 10:47
Benzyl chloride	ND	2.6	1	07/15/2014 10:47
Bromodichloromethane	ND	3.5	1	07/15/2014 10:47
Bromoform	ND	5.2	1	07/15/2014 10:47
Bromomethane	ND	2.0	1	07/15/2014 10:47
1,3-Butadiene	ND	1.1	1	07/15/2014 10:47
2-Butanone (MEK)	ND	75	1	07/15/2014 10:47
t-Butyl alcohol (TBA)	ND	31	1	07/15/2014 10:47
Carbon Disulfide	17	1.6	1	07/15/2014 10:47
Carbon Tetrachloride	ND	3.2	1	07/15/2014 10:47
Chlorobenzene	ND	2.4	1	07/15/2014 10:47
Chloroethane	ND	1.3	1	07/15/2014 10:47
Chloroform	ND	2.4	1	07/15/2014 10:47
Chloromethane	2.7	1.0	1	07/15/2014 10:47
Cyclohexane	22	18	1	07/15/2014 10:47
Dibromochloromethane	ND	4.4	1	07/15/2014 10:47
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/15/2014 10:47
1,2-Dibromoethane (EDB)	ND	3.9	1	07/15/2014 10:47
1,2-Dichlorobenzene	ND	3.0	1	07/15/2014 10:47
1,3-Dichlorobenzene	ND	3.0	1	07/15/2014 10:47
1,4-Dichlorobenzene	ND	3.0	1	07/15/2014 10:47
Dichlorodifluoromethane	130	2.5	1	07/15/2014 10:47
1,1-Dichloroethane	ND	2.0	1	07/15/2014 10:47
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/15/2014 10:47
1,1-Dichloroethene	5.1	2.0	1	07/15/2014 10:47
cis-1,2-Dichloroethene	220	2.0	1	07/15/2014 10:47
trans-1,2-Dichloroethene	120	2.0	1	07/15/2014 10:47
1,2-Dichloropropane	ND	2.4	1	07/15/2014 10:47
cis-1,3-Dichloropropene	ND	2.3	1	07/15/2014 10:47
trans-1,3-Dichloropropene	ND	2.3	1	07/15/2014 10:47

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-3	1407290-003A	Soil Gas	07/08/2014 11:31	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.08	26.18

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/15/2014 10:47
Diisopropyl ether (DIPE)	ND	2.1	1	07/15/2014 10:47
1,4-Dioxane	ND	1.8	1	07/15/2014 10:47
Ethanol	ND	96	1	07/15/2014 10:47
Ethyl acetate	ND	1.8	1	07/15/2014 10:47
Ethyl tert-butyl ether (ETBE)	2.3	2.1	1	07/15/2014 10:47
Ethylbenzene	58	2.2	1	07/15/2014 10:47
4-Ethyltoluene	34	2.5	1	07/15/2014 10:47
Freon 113	13	3.9	1	07/15/2014 10:47
Heptane	35	21	1	07/15/2014 10:47
Hexachlorobutadiene	ND	5.4	1	07/15/2014 10:47
Hexane	35	18	1	07/15/2014 10:47
2-Hexanone	2.4	2.1	1	07/15/2014 10:47
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/15/2014 10:47
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/15/2014 10:47
Methylene chloride	ND	1.8	1	07/15/2014 10:47
Methyl methacrylate	ND	2.1	1	07/15/2014 10:47
Naphthalene	ND	5.3	1	07/15/2014 10:47
Propene	ND	88	1	07/15/2014 10:47
Styrene	3.4	2.2	1	07/15/2014 10:47
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/15/2014 10:47
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/15/2014 10:47
Tetrahydrofuran	14	1.5	1	07/15/2014 10:47
Toluene	250	1.9	1	07/15/2014 10:47
1,2,4-Trichlorobenzene	ND	3.8	1	07/15/2014 10:47
1,1,1-Trichloroethane	ND	2.8	1	07/15/2014 10:47
1,1,2-Trichloroethane	ND	2.8	1	07/15/2014 10:47
Trichloroethene	370	2.8	1	07/15/2014 10:47
Trichlorofluoromethane	40	2.8	1	07/15/2014 10:47
1,2,4-Trimethylbenzene	69	2.5	1	07/15/2014 10:47
1,3,5-Trimethylbenzene	46	2.5	1	07/15/2014 10:47
Vinyl Acetate	ND	1.8	1	07/15/2014 10:47
Vinyl Chloride	1.3	1.3	1	07/15/2014 10:47
Xylenes, Total	260	6.6	1	07/15/2014 10:47

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-3	1407290-003A	Soil Gas	07/08/2014 11:31	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
13.08	26.18

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>			
1,2-DCA-d4	92	70-130		07/15/2014 10:47
Toluene-d8	108	70-130		07/15/2014 10:47
4-BFB	99	70-130		07/15/2014 10:47

(Cont.)



Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-4	1407290-004A	Soil Gas	07/08/2014 12:10	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
12.84	25.73

Analytes	Result	RL	DF	Date Analyzed
Acetone	270	60	1	07/15/2014 11:26
Acrolein	ND	1.2	1	07/15/2014 11:26
Acrylonitrile	ND	1.1	1	07/15/2014 11:26
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/15/2014 11:26
Benzene	120	1.6	1	07/15/2014 11:26
Benzyl chloride	ND	2.6	1	07/15/2014 11:26
Bromodichloromethane	ND	3.5	1	07/15/2014 11:26
Bromoform	ND	5.2	1	07/15/2014 11:26
Bromomethane	ND	2.0	1	07/15/2014 11:26
1,3-Butadiene	3.0	1.1	1	07/15/2014 11:26
2-Butanone (MEK)	ND	75	1	07/15/2014 11:26
t-Butyl alcohol (TBA)	ND	31	1	07/15/2014 11:26
Carbon Disulfide	64	1.6	1	07/15/2014 11:26
Carbon Tetrachloride	ND	3.2	1	07/15/2014 11:26
Chlorobenzene	ND	2.4	1	07/15/2014 11:26
Chloroethane	ND	1.3	1	07/15/2014 11:26
Chloroform	ND	2.4	1	07/15/2014 11:26
Chloromethane	3.2	1.0	1	07/15/2014 11:26
Cyclohexane	86	18	1	07/15/2014 11:26
Dibromochloromethane	ND	4.4	1	07/15/2014 11:26
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/15/2014 11:26
1,2-Dibromoethane (EDB)	ND	3.9	1	07/15/2014 11:26
1,2-Dichlorobenzene	ND	3.0	1	07/15/2014 11:26
1,3-Dichlorobenzene	ND	3.0	1	07/15/2014 11:26
1,4-Dichlorobenzene	ND	3.0	1	07/15/2014 11:26
Dichlorodifluoromethane	110	2.5	1	07/15/2014 11:26
1,1-Dichloroethane	ND	2.0	1	07/15/2014 11:26
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/15/2014 11:26
1,1-Dichloroethene	380	2.0	1	07/15/2014 11:26
1,2-Dichloropropane	11	2.4	1	07/15/2014 11:26
cis-1,3-Dichloropropene	ND	2.3	1	07/15/2014 11:26
trans-1,3-Dichloropropene	9.1	2.3	1	07/15/2014 11:26
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/15/2014 11:26
Diisopropyl ether (DIPE)	ND	2.1	1	07/15/2014 11:26

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Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-4	1407290-004A	Soil Gas	07/08/2014 12:10	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
12.84	25.73

Analytes	Result	RL	DF	Date Analyzed
1,4-Dioxane	ND	1.8	1	07/15/2014 11:26
Ethanol	170	96	1	07/15/2014 11:26
Ethyl acetate	ND	1.8	1	07/15/2014 11:26
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/15/2014 11:26
Ethylbenzene	97	2.2	1	07/15/2014 11:26
4-Ethyltoluene	31	2.5	1	07/15/2014 11:26
Freon 113	12	3.9	1	07/15/2014 11:26
Heptane	140	21	1	07/15/2014 11:26
Hexachlorobutadiene	ND	5.4	1	07/15/2014 11:26
Hexane	130	18	1	07/15/2014 11:26
2-Hexanone	6.6	2.1	1	07/15/2014 11:26
4-Methyl-2-pentanone (MIBK)	5.7	2.1	1	07/15/2014 11:26
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/15/2014 11:26
Methylene chloride	ND	1.8	1	07/15/2014 11:26
Methyl methacrylate	2.6	2.1	1	07/15/2014 11:26
Naphthalene	ND	5.3	1	07/15/2014 11:26
Propene	ND	88	1	07/15/2014 11:26
Styrene	4.2	2.2	1	07/15/2014 11:26
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/15/2014 11:26
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/15/2014 11:26
Tetrahydrofuran	ND	1.5	1	07/15/2014 11:26
Toluene	460	1.9	1	07/15/2014 11:26
1,2,4-Trichlorobenzene	ND	3.8	1	07/15/2014 11:26
1,1,1-Trichloroethane	ND	2.8	1	07/15/2014 11:26
1,1,2-Trichloroethane	88	2.8	1	07/15/2014 11:26
Trichlorofluoromethane	33	2.8	1	07/15/2014 11:26
1,2,4-Trimethylbenzene	81	2.5	1	07/15/2014 11:26
1,3,5-Trimethylbenzene	41	2.5	1	07/15/2014 11:26
Vinyl Acetate	ND	1.8	1	07/15/2014 11:26
Vinyl Chloride	1000	5.2	4	07/14/2014 20:59
Xylenes, Total	440	6.6	1	07/15/2014 11:26

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Analytical Report

Client: Advanced GeoEnvironmental, Inc.
Project: Metro Valley Cleaners
Date Received: 7/9/14 20:52
Date Prepared: 7/14/14-7/15/14

WorkOrder: 1407290
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
VP-4	1407290-004A	Soil Gas	07/08/2014 12:10	GC24	92763

Initial Pressure (psia)	Final Pressure (psia)
12.84	25.73

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>			
1,2-DCA-d4	93	70-130		07/15/2014 11:26
Toluene-d8	107	70-130		07/15/2014 11:26
4-BFB	99	70-130		07/15/2014 11:26



Quality Control Report

Client: Advanced GeoEnvironmental, Inc.
Date Prepared: 7/17/14
Date Analyzed: 7/16/14
Instrument: GC28
Matrix: Water
Project: Metro Valley Cleaners

WorkOrder: 1407290
BatchID: 92838
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-92838

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	100	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	19.0	5.0	20	-	95.1	70-130
Benzene	ND	20.8	5.0	20	-	104	70-130
Bromobenzene	ND	-	5.0	-	-	-	-
Bromochloromethane	ND	-	5.0	-	-	-	-
Bromodichloromethane	ND	-	5.0	-	-	-	-
Bromoform	ND	-	5.0	-	-	-	-
Bromomethane	ND	-	5.0	-	-	-	-
2-Butanone (MEK)	ND	-	20	-	-	-	-
t-Butyl alcohol (TBA)	ND	63.6	20	80	-	79.5	70-130
n-Butyl benzene	ND	-	5.0	-	-	-	-
sec-Butyl benzene	ND	-	5.0	-	-	-	-
tert-Butyl benzene	ND	-	5.0	-	-	-	-
Carbon Disulfide	ND	-	5.0	-	-	-	-
Carbon Tetrachloride	ND	-	5.0	-	-	-	-
Chlorobenzene	ND	21.6	5.0	20	-	108	70-130
Chloroethane	ND	-	5.0	-	-	-	-
Chloroform	ND	-	5.0	-	-	-	-
Chloromethane	ND	-	5.0	-	-	-	-
2-Chlorotoluene	ND	-	5.0	-	-	-	-
4-Chlorotoluene	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	-	5.0	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	2.0	-	-	-	-
1,2-Dibromoethane (EDB)	ND	17.7	5.0	20	-	88.7	70-130
Dibromomethane	ND	-	5.0	-	-	-	-
1,2-Dichlorobenzene	ND	-	5.0	-	-	-	-
1,3-Dichlorobenzene	ND	-	5.0	-	-	-	-
1,4-Dichlorobenzene	ND	-	5.0	-	-	-	-
Dichlorodifluoromethane	ND	-	5.0	-	-	-	-
1,1-Dichloroethane	ND	-	5.0	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	17.6	5.0	20	-	88.3	70-130
1,1-Dichloroethene	ND	17.3	5.0	20	-	86.5	70-130
cis-1,2-Dichloroethene	ND	-	5.0	-	-	-	-
trans-1,2-Dichloroethene	ND	-	5.0	-	-	-	-
1,2-Dichloropropane	ND	-	5.0	-	-	-	-
1,3-Dichloropropane	ND	-	5.0	-	-	-	-
2,2-Dichloropropane	ND	-	5.0	-	-	-	-
1,1-Dichloropropene	ND	-	5.0	-	-	-	-
cis-1,3-Dichloropropene	ND	-	5.0	-	-	-	-
trans-1,3-Dichloropropene	ND	-	5.0	-	-	-	-

(Cont.)



Quality Control Report

Client: Advanced GeoEnvironmental, Inc.
Date Prepared: 7/17/14
Date Analyzed: 7/16/14
Instrument: GC28
Matrix: Water
Project: Metro Valley Cleaners

WorkOrder: 1407290
BatchID: 92838
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-92838

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	18.0	5.0	20	-	90	70-130
Ethylbenzene	ND	-	5.0	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	18.6	5.0	20	-	93.1	70-130
Freon 113	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	-	5.0	-	-	-	-
Hexachloroethane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	5.0	-	-	-	-
Isopropylbenzene	ND	-	5.0	-	-	-	-
4-Isopropyl toluene	ND	-	5.0	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	18.2	5.0	20	-	91.2	70-130
Methylene chloride	ND	-	5.0	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	5.0	-	-	-	-
Naphthalene	ND	-	5.0	-	-	-	-
n-Propyl benzene	ND	-	5.0	-	-	-	-
Styrene	ND	-	5.0	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	5.0	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	5.0	-	-	-	-
Tetrachloroethene	ND	-	5.0	-	-	-	-
Toluene	ND	21.8	5.0	20	-	109	70-130
1,2,3-Trichlorobenzene	ND	-	5.0	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	5.0	-	-	-	-
1,1,1-Trichloroethane	ND	-	5.0	-	-	-	-
1,1,2-Trichloroethane	ND	-	5.0	-	-	-	-
Trichloroethene	ND	22.7	5.0	20	-	114	70-130
Trichlorofluoromethane	ND	-	5.0	-	-	-	-
1,2,3-Trichloropropane	ND	-	5.0	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	5.0	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	5.0	-	-	-	-
Vinyl Chloride	ND	-	5.0	-	-	-	-
Surrogate Recovery							
Dibromofluoromethane	225	41.1		45	90	91	70-130
Toluene-d8	226	39.3		45	90	87	70-130
4-BFB	21.7	4.43		4.5	87	98	70-130



Quality Control Report

Client: Advanced GeoEnvironmental, Inc.
Date Prepared: 7/15/14
Date Analyzed: 7/14/14
Instrument: GC24
Matrix: Soilgas
Project: Metro Valley Cleaners

WorkOrder: 1407290
BatchID: 92763
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-92763

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	25	-	-	-	-
Acrolein	ND	22.5	0.50	25	-	90.1	60-140
Acrylonitrile	ND	27.1	0.50	25	-	108	60-140
tert-Amyl methyl ether (TAME)	ND	26.0	0.50	25	-	104	60-140
Benzene	ND	21.4	0.50	25	-	85.6	60-140
Benzyl chloride	ND	30.2	0.50	25	-	121	60-140
Bromodichloromethane	ND	22.5	0.50	25	-	90	60-140
Bromoform	ND	38.6	0.50	25	-	154, F2	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	25.3	10	25	-	101	60-140
Carbon Disulfide	ND	23.2	0.50	25	-	92.8	60-140
Carbon Tetrachloride	ND	20.9	0.50	25	-	83.6	60-140
Chlorobenzene	ND	23.4	0.50	25	-	93.6	60-140
Chloroethane	ND	18.0	0.50	25	-	72	60-140
Chloroform	ND	17.9	0.50	25	-	71.6	60-140
Chloromethane	ND	24.2	0.50	25	-	96.7	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	27.9	0.50	25	-	112	60-140
1,2-Dibromo-3-chloropropane	ND	36.5	0.012	25	-	146, F2	60-140
1,2-Dibromoethane (EDB)	ND	23.9	0.50	25	-	95.8	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	24.6	0.50	25	-	98.6	60-140
1,4-Dichlorobenzene	ND	23.3	0.50	25	-	93.1	60-140
Dichlorodifluoromethane	ND	20.1	0.50	25	-	80.6	60-140
1,1-Dichloroethane	ND	22.8	0.50	25	-	91.4	60-140
1,2-Dichloroethane (1,2-DCA)	ND	20.6	0.50	25	-	82.3	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	21.7	0.50	25	-	86.9	60-140
trans-1,2-Dichloroethene	ND	19.5	0.50	25	-	78.1	60-140
1,2-Dichloropropane	ND	23.1	0.50	25	-	92.5	60-140
cis-1,3-Dichloropropene	ND	25.9	0.50	25	-	104	60-140
trans-1,3-Dichloropropene	ND	25.5	0.50	25	-	102	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	20.4	0.50	25	-	81.8	60-140
Diisopropyl ether (DIPE)	ND	23.0	0.50	25	-	92.1	60-140
1,4-Dioxane	ND	25.0	0.50	25	-	99.9	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	21.8	0.50	25	-	87.3	60-140
Ethyl tert-butyl ether (ETBE)	ND	23.8	0.50	25	-	95.3	60-140

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Quality Control Report

Client: Advanced GeoEnvironmental, Inc.
Date Prepared: 7/15/14
Date Analyzed: 7/14/14
Instrument: GC24
Matrix: Soilgas
Project: Metro Valley Cleaners

WorkOrder: 1407290
BatchID: 92763
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-92763

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethylbenzene	ND	24.0	0.50	25	-	95.9	60-140
4-Ethyltoluene	ND	-	0.50	-	-	-	-
Freon 113	ND	15.9	0.50	25	-	63.7	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	22.5	0.50	25	-	90	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	30.3	0.50	25	-	121	60-140
Methyl-t-butyl ether (MTBE)	ND	19.7	0.50	25	-	78.8	60-140
Methylene chloride	ND	19.7	0.50	25	-	78.9	60-140
Methyl methacrylate	ND	26.5	0.50	25	-	106	60-140
Naphthalene	ND	65.6	1.0	50	-	131	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	27.0	0.50	25	-	108	60-140
1,1,1,2-Tetrachloroethane	ND	26.2	0.50	25	-	105	60-140
1,1,2,2-Tetrachloroethane	ND	22.7	0.50	25	-	90.7	60-140
Tetrachloroethene	ND	23.8	0.50	25	-	95.1	60-140
Tetrahydrofuran	ND	21.0	0.50	25	-	83.8	60-140
Toluene	ND	23.1	0.50	25	-	92.3	60-140
1,2,4-Trichlorobenzene	ND	28.2	0.50	25	-	113	60-140
1,1,1-Trichloroethane	ND	22.3	0.50	25	-	89.2	60-140
1,1,2-Trichloroethane	ND	20.8	0.50	25	-	83.4	60-140
Trichloroethene	ND	20.9	0.50	25	-	83.5	60-140
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	23.1	0.50	25	-	92.5	60-140
1,3,5-Trimethylbenzene	ND	21.4	0.50	25	-	85.5	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	18.6	0.50	25	-	74.4	60-140
Xylenes, Total	ND	67.7	1.5	75	-	90.3	60-140

Surrogate Recovery

1,2-DCA-d4	462	561		500	92	112	60-140
Toluene-d8	491	509		500	98	102	60-140
4-BFB	529	502		500	106	100	60-140



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1407290

ClientCode: AGES

WaterTrax
 WriteOn
 EDF
 Excel
 EQuIS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:

Daniel Villanueva Email: dvillanueva@advgeoenv.com
 Advanced GeoEnvironmental, Inc. cc/3rd Party:
 837 Shaw Road PO:
 Stockton, CA 95215 ProjectNo: Metro Valley Cleaners
 (209) 467-1006 FAX: (209) 467-1118

Bill to:

Erica
 Advanced GeoEnvironmental, Inc.
 837 Shaw Road
 Stockton, CA 95215
 ebart@advgeoenv.com

Requested TAT: 5 days

Date Received: 07/09/2014

Date Printed: 07/09/2014

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1407290-001	VP-1	Soil Gas	7/8/2014 10:17	<input type="checkbox"/>	A												
1407290-002	VP-2	Soil Gas	7/8/2014 10:53	<input type="checkbox"/>	A												
1407290-003	VP-3	Soil Gas	7/8/2014 11:31	<input type="checkbox"/>	A												
1407290-004	VP-4	Soil Gas	7/8/2014 12:10	<input type="checkbox"/>	A												

Test Legend:

1	015_Scan-SIM_SOIL(UG/M)	2		3		4		5	
6		7		8		9		10	
11		12							

The following SamplIDs: 001A, 002A, 003A, 004A contain testgroup.

Prepared by: Jena Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: ADVANCED GEOENVIRONMENTAL, INC.

QC Level: LEVEL 2

Work Order: 1407290

Project: Metro Valley Cleaners

Client Contact: Daniel Villanueva

Date Received: 7/9/2014

Comments:

Contact's Email: dvillanueva@advgeoenv.com

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1407290-001A	VP-1	Soil Gas	TO15 for Soil Vapor	1	1L Summa	<input type="checkbox"/>	7/8/2014 10:17	5 days		<input type="checkbox"/>	
1407290-002A	VP-2	Soil Gas	TO15 for Soil Vapor	1	1L Summa	<input type="checkbox"/>	7/8/2014 10:53	5 days		<input type="checkbox"/>	
1407290-003A	VP-3	Soil Gas	TO15 for Soil Vapor	1	1L Summa	<input type="checkbox"/>	7/8/2014 11:31	5 days		<input type="checkbox"/>	
1407290-004A	VP-4	Soil Gas	TO15 for Soil Vapor	1	1L Summa	<input type="checkbox"/>	7/8/2014 12:10	5 days		<input type="checkbox"/>	

* **NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

1L Summa = 1L Summa Canister

1407290



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
-

Date: 7-9-14 Page 1 of 1

Analysis Required

VOC's (TO-15)
IPA

Project Name: Metro Valley Cleaners Project Manager: Daniel Villaverde

Client: _____ Sampler (initials & signature): DAV [Signature]

Invoice to: AGE Client Lab Project No.: _____

Sample ID/Location/Description	Date	Time	Matrix	Number	Notes													
VP-1	7-8-14	1017-1022	A	1	initial pressure: 29 Hg final pressure: 4 Hg	X	X											
VP-2	7-08-14	1053-1058	A	1	initial pressure: 29 Hg final pressure: 4 Hg	X	X											
VP-3	7-08-14	1121-1130	A	1	initial pressure: 28.5 Hg final pressure: 4 Hg	X	X											
VP-4	7-08-14	1210-1215	A	1	initial pressure: 28.5 Hg final pressure: 4 Hg	X	X											

Relinquished by: [Signature] Date: 7-9-14 Time: 1159 Laboratory: MAI

Courier: MAI Received by: [Signature] Date: 7/9/14 Time: 1159

Relinquished by: [Signature] Date: 7/9/14 Time: 13:18 Received by: [Signature] Date: 7/9/14 Time: 13:18

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

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: _____



Sample Receipt Checklist

Client Name: **Advanced GeoEnvironmental, Inc.** Date and Time Received: **7/9/2014 8:52:28 PM**
 Project Name: **Metro Valley Cleaners** LogIn Reviewed by: **Jena Alfaro**
 WorkOrder No: **1407290** Matrix: Soil Gas Carrier: Daniel (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes No NA
 Samples Received on Ice? Yes No

* NOTE: If the "No" box is checked, see comments below.

 Comments: