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## PERJURY STATEMENT

**Subject: 1395 MacArthur Boulevard, San Leandro, California  
Indoor Air & Sub-Slab Monitoring Report – First Quarter 2017**

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---

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**Indoor Air & Sub-Slab Monitoring Report – First Quarter 2017**  
**SWISS VALLEY CLEANERS**  
1395 MacArthur Boulevard, San Leandro, California

08 March 2017  
AGE-Project No. 12-2461

*PREPARED FOR:*

Mr. William Mathews Brooks  
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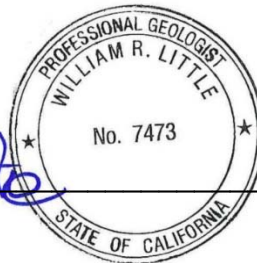
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**Indoor Air & Sub-Slab Monitoring Report – First Quarter 2017**  
**SWISS VALLEY CLEANERS**  
1395 MacArthur Boulevard, San Leandro, California

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**SWISS VALLEY CLEANERS**  
**1395 MacArthur Boulevard, San Leandro, California**

## **1.0. INTRODUCTION**

*Advanced GeoEnvironmental, Inc.* has prepared this, *Indoor Air and Sub-Slab Monitoring Report – First Quarter 2017*, for the above-referenced site. The scope of work included the sampling of indoor air in the subject (1395 MacArthur Boulevard) and adjacent suite (1383 MacArthur Boulevard) and the sampling of three sub-slab vapor wells (SS-2 through SS-4) at the subject site; Estudillo Plaza Optometry was closed for the holiday (20 February 2017) and SS-1 was not accessible during the sampling event.

The location of the site and the surrounding area are illustrated in Figure 1; detailed maps of site features and boring and soil-vapor sampling locations are included as Figures 2 and 3.

## **2.0. PROCEDURES**

The purpose of this sampling event was to evaluate the performance of the onsite soil-vapor extraction system and to continue to monitor chlorinated hydrocarbon concentrations in indoor air and sub-slab vapor. Additionally, results from this monitoring event were intended to aid in the determination of the feasibility of reoccupation of the subject suite by a new dry cleaning business.

Indoor air and sub-slab vapor well sampling procedures were outlined in the AGE-prepared, *Site Assessment and Sub-Slab Vapor Well Installation Work Plan*, dated 05 November 2014. Procedures were further modified by the Alameda County Environmental Health Services (ACEHS) directive letter, dated 11 March 2014.

### **2.1. INDOOR AIR SAMPLING**

Field work was performed utilizing procedures provided in the Interstate Technology Regulatory Council (ITRC)-prepared, *Vapor Intrusion Pathway: A Practical Guideline* dated January 2007 and the Department of Toxic Substance Control (DTSC)-prepared, *Guidance For The Evaluation And Mitigation Of Subsurface Vapor Intrusion To Indoor Air - Final (Vapor Intrusion Guidance)* dated October 2011.

#### **2.1.1. Pre-Field Work Preparations**

On 20 February 2017, prior to the start of indoor air sample collection, all suites sampled (1383 [Solthea Salon & Beauty Supply] and 1395 MacArthur Boulevard

[Former Swiss Valley Cleaners]) were inspected to locate indoor contaminant sources and products that could potentially bias the sampling results (Figure 3). Several products with chemicals of concern had been previously identified in 1383 MacArthur Boulevard (Solthea Beauty Supply and Salon). Organic vapor was not measured during the survey of each building prior to deployment of the indoor air sampling canisters, as historical values had been established.

### 2.1.2. Indoor Air Sampling

During the February 2017 indoor air sampling event, passive integrated air samples were collected from inside the suites of 1383 and 1395 MacArthur Boulevard. During the sampling events one 6-liter summa canister was deployed in the center or rear of each of the facilities in areas lacking public access.

The sampling inlet on each canister was connected to a mass flow controller containing a particulate filter; the flow controllers were calibrated to a flow rate of 3.5 milliliters/minute (ml/min) in order to collect air samples over a 24-hour period. Each canister's initial vacuum was measured and recorded to ensure the initial vacuum was greater than 20 inches of mercury (in/Hg); initial vacuum's was measured at 29 in/Hg prior to air sample collection. Upon can retrieval final vacuum measurements were observed between 2 and 3 in/Hg.

The air samples were transported under chain-of-custody procedures to McCampbell Analytical Inc. (MAI) located in Pittsburg, California. The indoor air samples were analyzed for VOCs in accordance with EPA Method TO-15.

## 2.2. SUB-SLAB VAPOR WELL SAMPLING

On 20 February 2017 sub-slab vapor points SS-2, SS-3 and SS-4 were sampled; SS-1 was not accessible during the sampling event. During the sampling event, one-liter (sampling) and six-liter Summa purge canisters were used to collect sub-slab vapor samples. The sampling and purge canisters were connected together with a dedicated and serialized sampling inlet manifold. The sampling inlet manifold consisted of a vapor-tight valve; a particulate filter; a calibrated flow restrictor calibrated to 50 milliliters per minute (ml/min); a stainless steel tee-fitting; two vacuum gauges at either end of the flow controller and connections for both purge and sampling canisters (manifold assembly).

The manifold assembly was attached to Teflon® tubing with a compression sleeve and nut, which was attached to a dedicated brass barb that was fitted to the fitting at the top of the sub-slab monitoring point. The threads of each fitting were covered with Teflon® tape to ensure an airtight seal. The purge canister was attached to the end of the sampling manifold, while the sample canister was attached to the middle of the manifold

assembly. Teflon® tape was placed on the threads of each fitting of the manifold assembly prior to attaching the sampling and purge canisters.

The initial vacuum of each canister was measured and recorded in inches of mercury (in Hg) on field logs (Appendix A). Leak tests were performed on each assembly by attaching and securing the sample and purge canisters to the manifold and opening the valves on the purge canister and the manifold. The leak test was performed for approximately 10 minutes on each assembly. Adjustments were made (tightening of fittings) and a leak test was performed again, if necessary. Once a proper seal was assured, each sub-slab monitoring location was isolated from ambient air by enclosing the sub-slab point, tubing and manifold/canister assembly in clear plastic shroud. Isopropyl alcohol (IPA) as a liquid was placed in a stainless steel bowl within the plastic shroud and allowed to volatilize into the air enclosed within the shroud surrounding the sub-slab monitoring point, tubing and manifold/canister assembly.

The purge volume was pre-determined prior to sampling by calculating the internal volume of the tubing of the manifold and well volume including filter pack.

Once the sampling apparatus was leak-tested and sealed within the shroud, the purge canister valve was opened for a calculated period of time (35 seconds) to allow the three calculated volumes of air and soil vapor to be purged. The purge vacuum gauge was monitored and recorded to ensure a proper decrease of vacuum purged.

Upon achieving the targeted purge volume, the purge canister valve was closed and the sample canister valve opened. The initial pressure on the sample canister and time were recorded. Upon reaching at least -5 in Hg or less, the sample canister valve was closed and final pressure and time recorded. The sampling port on the sampling canister was capped with a brass end-cap and sealed with Teflon® tape.

The vapor samples were transported by AGE under chain-of-custody procedures to MAI. The sub-slab vapor samples were analyzed for VOCs and iso-propyl alcohol (IPA - tracer gas) in accordance with EPA Method TO-15.

### **3.0. FINDINGS**

Chlorinated hydrocarbon and VOC impact was quantified based on laboratory analysis of indoor air and sub-slab vapor samples collected at the site during the February 2017 investigations.

#### **3.1. ANALYTICAL RESULTS OF INDOOR AIR SAMPLES**

Two indoor air samples (IA-1383 MacArthur and IA-1395 MacArthur) were collected at the site during the 20 February 2017 sampling event. All samples were analyzed for

VOCs in accordance with EPA method TO-15. Results are summarized below:

IA-1383 MacArthur:

- Acetone was detected at a concentration of 2,000 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ );
- Benzene was detected at a concentration of  $0.71 \mu\text{g}/\text{m}^3$ ;
- 2-Butanone (MEK) was detected a concentration of  $6.6 \mu\text{g}/\text{m}^3$ ;
- Carbon tetrachloride (CT) was detected at a concentration of  $0.46 \mu\text{g}/\text{m}^3$ ;
- Chloroform was detected at a concentration of  $0.53 \mu\text{g}/\text{m}^3$ ;
- Chloromethane was detected at a concentration of  $0.96 \mu\text{g}/\text{m}^3$ ;
- Cyclohexane was detected at a concentration of  $0.46 \mu\text{g}/\text{m}^3$ ;
- 1,4-dichlorobenzene was detected at a concentration of  $0.22 \mu\text{g}/\text{m}^3$ ;
- Dichlorodifluoromethane (DCDFM) was detected at a concentration of  $2.3 \mu\text{g}/\text{m}^3$ ;
- 1,2-dichloroethane (1,2-DCA) was detected at a concentration of  $0.41 \mu\text{g}/\text{m}^3$ ;
- 1,2-dichloropropane (1,2-DCP) was detected at a concentration of  $0.039 \mu\text{g}/\text{m}^3$ ;
- 1,2-dichloro-1,1,2,2-tetrafluoroethane (1,2-D,1,1,2,2-TFA) was detected at a concentration of  $0.15 \mu\text{g}/\text{m}^3$ ;
- Ethyl acetate was detected at a concentration of  $200 \mu\text{g}/\text{m}^3$ ;
- Ethylbenzene was detected at a concentration of  $0.38 \mu\text{g}/\text{m}^3$ ;
- Freon 113 was detected at a concentration of  $0.63 \mu\text{g}/\text{m}^3$ ;
- Heptane was detected at a concentration of  $1.3 \mu\text{g}/\text{m}^3$ ;
- Hexane was detected at a concentration of  $1.2 \mu\text{g}/\text{m}^3$ ;
- 4-methyl-2-pentanone (MIBK) was detected at a concentration of  $0.33 \mu\text{g}/\text{m}^3$ ;
- Methylene chloride was detected at a concentration of  $0.71 \mu\text{g}/\text{m}^3$ ;
- Methyl methacrylate was detected at a concentration of  $930 \mu\text{g}/\text{m}^3$ ;
- Naphthalene was detected at a concentration of  $0.17 \mu\text{g}/\text{m}^3$ ;
- Styrene was detected at a concentration of  $0.41 \mu\text{g}/\text{m}^3$ ;
- 1,1,1,2-Tetrachloroethane was detected at a concentration of  $0.32 \mu\text{g}/\text{m}^3$ ;
- Tetrachloroethene (PCE) was detected at a concentration of  $0.83 \mu\text{g}/\text{m}^3$ ;
- Tetrahydrofuran was detected at a concentration of  $1.2 \mu\text{g}/\text{m}^3$ ;
- Toluene was detected at a concentration of  $11 \mu\text{g}/\text{m}^3$ ;
- Trichloroethene (TCE) was detected at a concentration of  $0.077 \mu\text{g}/\text{m}^3$ ;



- Trichlorofluoromethane was detected at a concentration of 1.4  $\mu\text{g}/\text{m}^3$ ;
- 1,2,4-trimethylbenzene (1,2,4-TMB) was detected at a concentration of 0.40  $\mu\text{g}/\text{m}^3$ ;
- 1,3,5-trimethylbenzene (1,2,5-TMB) was detected at a concentration of 0.13  $\mu\text{g}/\text{m}^3$ ; and
- Total xylenes were detected at a concentration of 1.2  $\mu\text{g}/\text{m}^3$ ;

IA-1395 MacArthur:

- Acetone was detected at a concentration of 76  $\mu\text{g}/\text{m}^3$ ;
- Benzene was detected at a concentration of 0.57  $\mu\text{g}/\text{m}^3$ ;
- MEK was detected a concentration of 5.2  $\mu\text{g}/\text{m}^3$ ;
- CT was detected at a concentration of 0.46  $\mu\text{g}/\text{m}^3$ ;
- Chloroform was detected at a concentration of 0.21  $\mu\text{g}/\text{m}^3$ ;
- Chloromethane was detected at a concentration of 0.92  $\mu\text{g}/\text{m}^3$ ;
- Cyclohexane was detected at a concentration of 0.36  $\mu\text{g}/\text{m}^3$ ;
- 1,4-dichlorobenzene was detected at a concentration of 0.20  $\mu\text{g}/\text{m}^3$ ;
- DCDFM was detected at a concentration of 2.5  $\mu\text{g}/\text{m}^3$ ;
- 1,2-DCA was detected at a concentration of 0.20  $\mu\text{g}/\text{m}^3$ ;
- 1,2-DCP was detected at a concentration of 0.028  $\mu\text{g}/\text{m}^3$ ;
- 1,2-D,1,1,2,2-TFA was detected at a concentration of 0.14  $\mu\text{g}/\text{m}^3$ ;
- Ethyl acetate was detected at a concentration of 7.0  $\mu\text{g}/\text{m}^3$ ;
- Ethylbenzene was detected at a concentration of 0.25  $\mu\text{g}/\text{m}^3$ ;
- Freon 113 was detected at a concentration of 0.63  $\mu\text{g}/\text{m}^3$ ;
- Heptane was detected at a concentration of 1.1  $\mu\text{g}/\text{m}^3$ ;
- Hexane was detected at a concentration of 0.45  $\mu\text{g}/\text{m}^3$ ;
- MIBK was detected at a concentration of 0.19  $\mu\text{g}/\text{m}^3$ ;
- Methylene chloride was detected at a concentration of 0.98  $\mu\text{g}/\text{m}^3$ ;
- Methyl methacrylate was detected at a concentration of 29  $\mu\text{g}/\text{m}^3$ ;
- Naphthalene was detected at a concentration of 0.12  $\mu\text{g}/\text{m}^3$ ;
- Styrene was detected at a concentration of 0.14  $\mu\text{g}/\text{m}^3$ ;
- PCE was detected at a concentration of 0.38  $\mu\text{g}/\text{m}^3$ ;

- Tetrahydrofuran was detected at a concentration of 21  $\mu\text{g}/\text{m}^3$ ;
- Toluene was detected at a concentration of 3.5  $\mu\text{g}/\text{m}^3$ ;
- TCE was detected at a concentration of 0.019  $\mu\text{g}/\text{m}^3$ ;
- Trichlorofluoromethane was detected at a concentration of 1.4  $\mu\text{g}/\text{m}^3$ ;
- 1,2,4-TMB was detected at a concentration of 0.40  $\mu\text{g}/\text{m}^3$ ;
- 1,2,5-TMB was detected at a concentration of 0.35  $\mu\text{g}/\text{m}^3$ ; and
- Total xylenes were detected at a concentration of 0.90  $\mu\text{g}/\text{m}^3$ ;

A summary of analytical results from samples collected during the February 2017 sampling event are included in Table 1. The laboratory report (MAI work order number 1702A12), quality assurance/quality control report, and chain-of-custody form are included in Appendix B. Laboratory analytical was uploaded to the State GeoTracker database under confirmation number 9412489473.

### 3.2. ANALYTICAL RESULTS OF SUB-SLAB VAPOR SAMPLES

A total of three (3) sub-slab vapor samples were collected at the site in February 2017 and analyzed for VOCs and IPA. The following is a summary of the results:

- Acetone was detected in the sample collected from SS-2 at a concentrations of 160  $\mu\text{g}/\text{m}^3$ ;
- Ethyl acetate was detected in the sample collected from SS-2 at a concentration of 2.7  $\mu\text{g}/\text{m}^3$ ;
- 2-Hexanone was detected in the sample collected from SS-2 at a concentration of 2.2  $\mu\text{g}/\text{m}^3$ ;
- Methyl methacrylate was detected in the sample collected from SS-2 at a concentration of 16  $\mu\text{g}/\text{m}^3$ ;
- PCE was detected in all three sub-slab vapor samples at a maximum concentration of 420  $\mu\text{g}/\text{m}^3$  (SS-4);
- Tetrahydrofuran was detected in the sample collected from SS-3 at a concentration 5.5  $\mu\text{g}/\text{m}^3$ ;
- Toluene was detected in the sample collected from SS-2 at a concentration of 1.9  $\mu\text{g}/\text{m}^3$ ;
- Tracer gas isopropyl alcohol (IPA) was detected in two of the three samples (SS-2 and SS-4) at concentrations of 91  $\mu\text{g}/\text{m}^3$  and 1,300  $\mu\text{g}/\text{m}^3$ .

No other constituents of concern were detected in the sub-slab samples collected during the February 2017 monitoring event. A summary of the analytical results from the

sampling event are included in Table 2. The laboratory report (MAI work order number 1702A13), quality assurance/quality control report, and chain-of-custody forms are included in Appendix C. Laboratory analytical data was uploaded to the State GeoTracker database under confirmation number 3573564529.

#### **4.0. PROPOSED SVE REBOUND TESTING**

In November 2016 corrective action began with the initiation of soil-vapor extraction (SVE) at the subject site, using a network of 21 SVE wells within and surrounding the former dry cleaning suite. Startup and monthly remediation system sampling have been conducted at the site to monitor removal rates and evaluate the effectiveness of the system. Based on influent analytical data collected to date concentrations have sharply declined (demonstrating asymptotic levels) and mass removal rates are starting to show reduced increase with time. Based on these findings, low levels of concentrations reported during the initial progress indoor air/sub-slab monitoring event and to evaluate the feasibility of reoccupation of the cleaners suite, AGE proposes to temporarily shut off the SVE system.

Starting 01 April 2017, AGE proposes to pause the operation of the on-site SVE system to perform rebound testing and to evaluate the effects of non-operation of the system on sub-slab and indoor impact. After a period of 30 days, AGE proposes to collect indoor air samples concurrently with sub-slab samples from the subject unit and two adjacent suites. Results from the sampling will be used to gauge the feasibility of reoccupying the subject suite and to evaluate future operation of the SVE system.

#### **5.0. SUMMARY/CONCLUSIONS**

Based upon the findings of this investigation, AGE concludes:

- Based on sub-slab vapor samples and a comparison to indoor air samples collected during all sampling events (pre- and post-startup of remediation system), significant attenuation appears to be taking place from five feet bsg to just beneath the concrete slab and into the indoor air (Tables 1 and 2).
- PCE concentrations detected during this event in sub-slab soil-vapor samples SS-2 though SS-4 are below San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels for a commercial setting. Accumulation of chlorinated hydrocarbon impact below the sub-slab appears to be decreasing as a result of remedial system operation.
- PCE concentrations detected in indoor air samples are significantly lower than those reported during previous monitoring events, prior to when SVE remedial equipment was operational.

- Active correction action has significantly reduced concentration in both the indoor air and sub-slab. As evident in the declining concentrations in the influent vapor stream during monthly monitoring, a significant amount of the original mass has been removed as a result of the operation of the SVE system. As mentioned above, AGE is of the opinion that the system should be temporarily shut-down for performance of rebound testing.

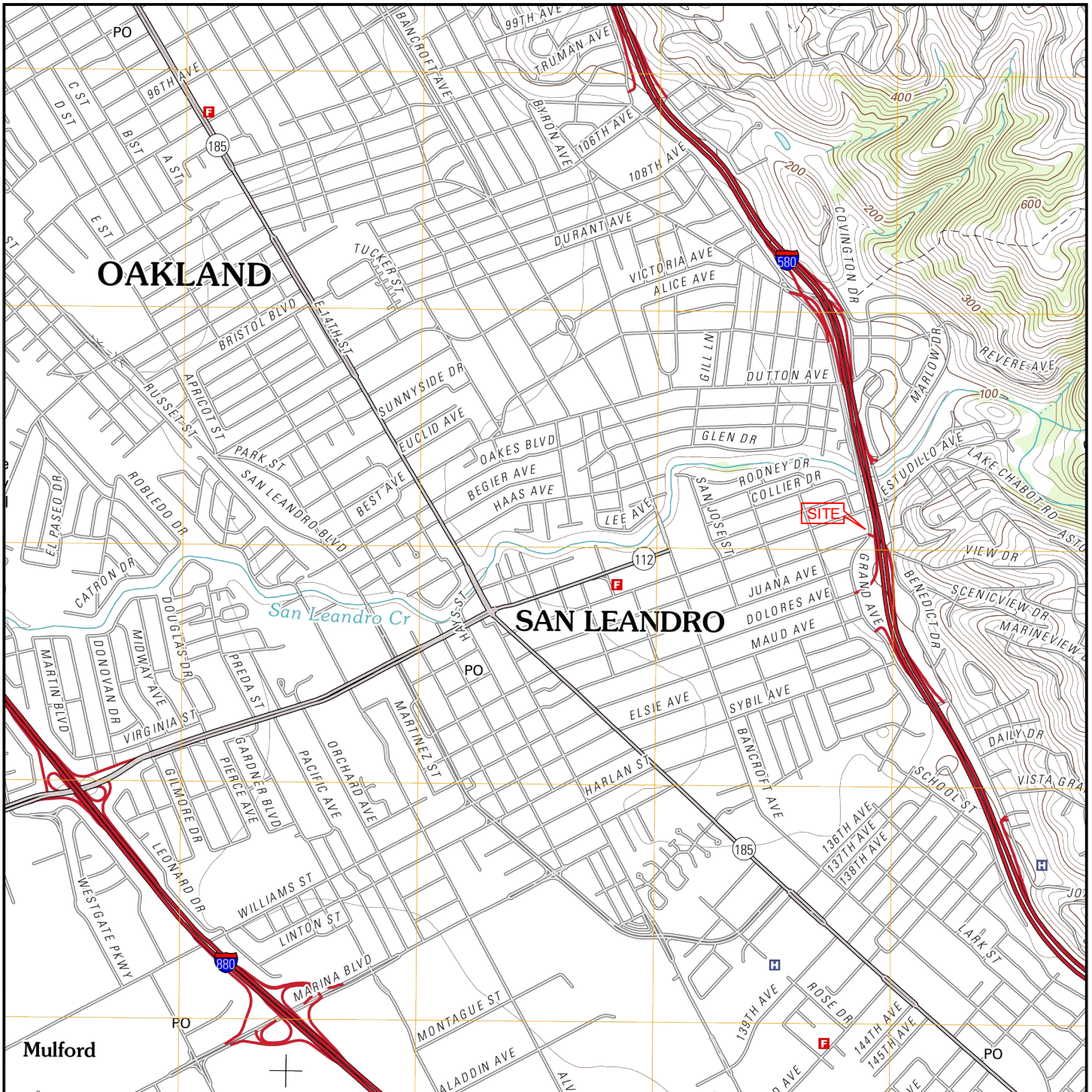
## **6.0. RECOMMENDATIONS**

Based on the results of this investigation, AGE recommends that starting at on 01 April 2017 the on-site remediation system be turned off for the performance of rebound testing. Sub-slab and indoor air samples should be collected in the subject and adjacent units following a period of 30 days to evaluate if significant rebound has occurred additional sub-slab and indoor air samples be collected in the summer of 2017, following active soil-vapor remediation.

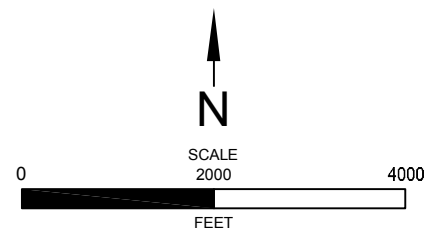
## **7.0. LIMITATIONS**

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 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 indoor air 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



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



**LOCATION MAP**  
 SWISS VALLEY CLEANERS  
 1395 MacArthur Boulevard  
 SAN LEANDRO, CALIFORNIA

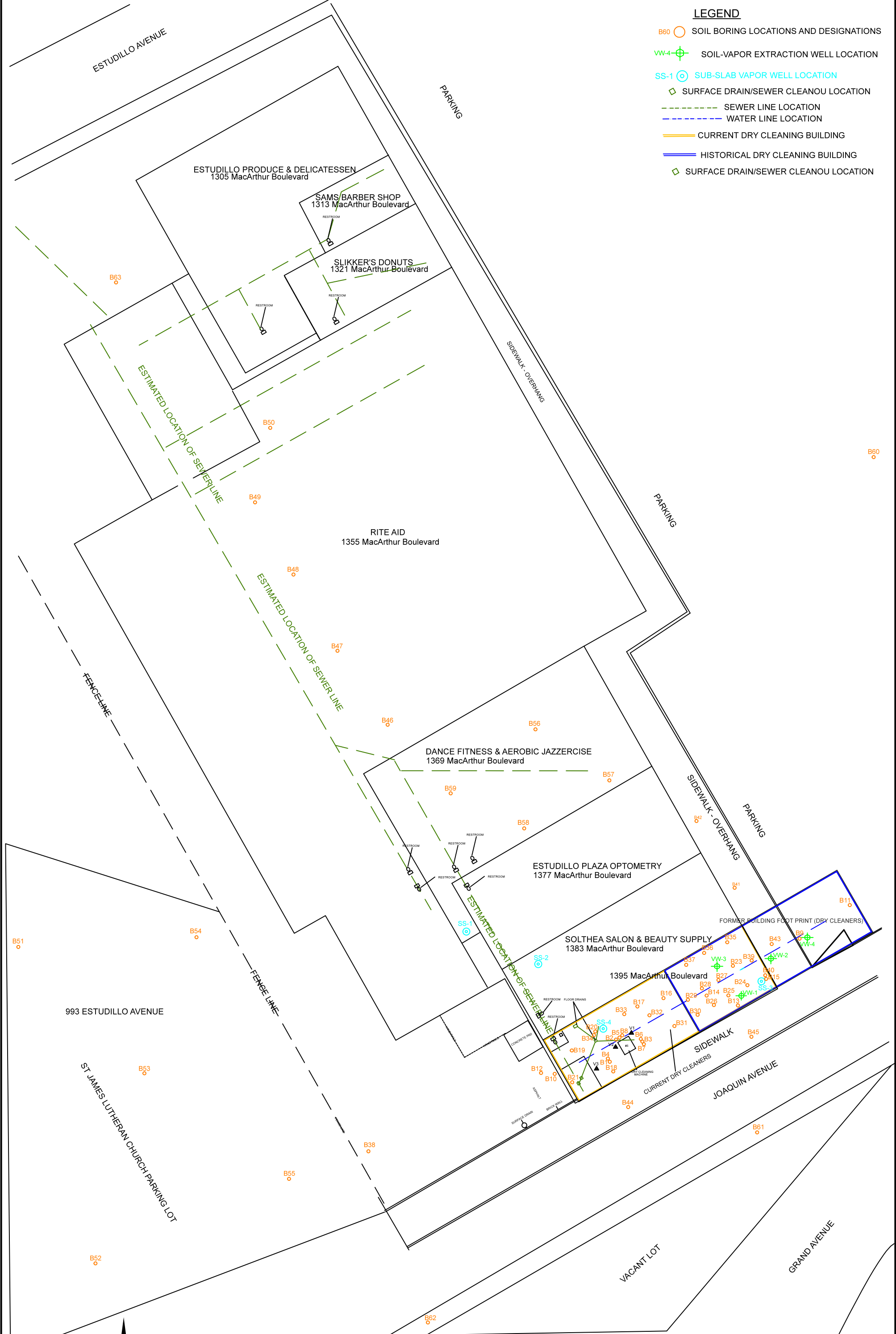


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PROJECT NO. AGE-NC-12-2461	FILE: LOCATION	FIGURE:
DATE: 21 MAY, 2013	DRAWN BY: MAC	1

**LEGEND**

- B60 ○ SOIL BORING LOCATIONS AND DESIGNATIONS
- VW-4 ⊕ SOIL-VAPOR EXTRACTION WELL LOCATION
- SS-1 ⊕ SUB-SLAB VAPOR WELL LOCATION
- ◇ SURFACE DRAIN/SEWER CLEANOUT LOCATION
- SEWER LINE LOCATION
- WATER LINE LOCATION
- CURRENT DRY CLEANING BUILDING
- HISTORICAL DRY CLEANING BUILDING
- ◇ SURFACE DRAIN/SEWER CLEANOUT LOCATION



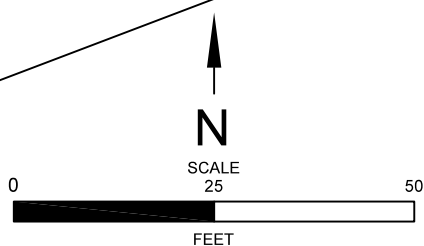
**REGIONAL SITE PLAN - SOIL BORING LOCATIONS**

**SWISS VALLEY CLEANERS  
1395 MACARTHUR BOULEVARD  
SAN LEANDRO, CALIFORNIA**



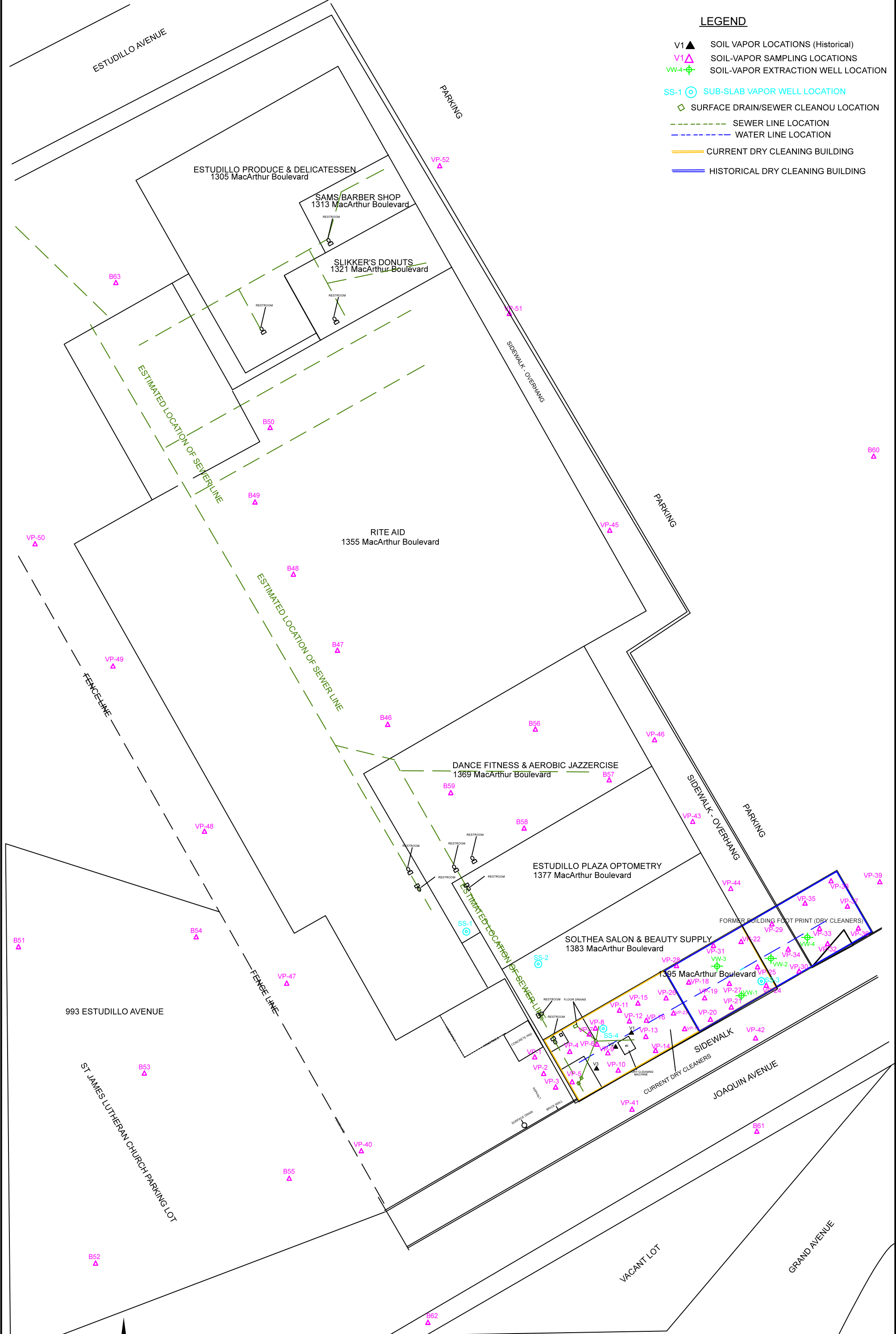
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PROJECT NO. AGE-NC-SC	FILE: FILE	FIGURE:
DATE: MAY 2014	DRAWN BY: MAC	2




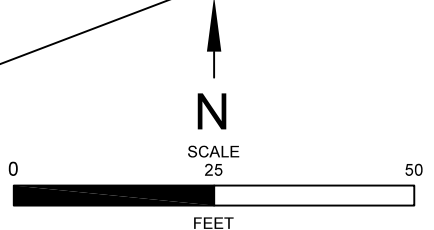
**LEGEND**

- V1 ▲ SOIL VAPOR LOCATIONS (Historical)
- V1 ▲ SOIL-VAPOR SAMPLING LOCATIONS
- VW-4 ⊕ SOIL-VAPOR EXTRACTION WELL LOCATION
- SS-1 ⊕ SUB-SLAB VAPOR WELL LOCATION
- ◇ SURFACE DRAIN/SEWER CLEANOUT LOCATION
- SEWER LINE LOCATION
- WATER LINE LOCATION
- CURRENT DRY CLEANING BUILDING
- HISTORICAL DRY CLEANING BUILDING



**REGIONAL SITE PLAN - VAPOR SAMPLING LOCATIONS**  
**SWISS VALLEY CLEANERS**  
**1395 MACARTHUR BOULEVARD**  
**SAN LEANDRO, CALIFORNIA**

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PROJECT NO. AGE-NC-SC	FILE: FILE	3
DATE: MAY 2014	DRAWN BY: MAC	





# **TABLES**

**TABLE 1**  
**INDOOR AIR ANALYTICAL RESULTS**  
**SWISS VALLEY CLEANERS**  
 1395 MacArthur Boulevard,  
 San Leandro, California  
 (micrograms per cubic meter)

Sample ID	Date	TO-15																	
		PCE	TCE	1,2-DCA	EDB	Naphthalene	1,4-DCB	Acetone	CT	B	T	E	X	Chloromethane	DCDFM	Ethyl Acetate	TCFM	Chloroform	
IA-1395 MacArthur (Subject Suite)	04-10-2014	12	0.038	0.085	<0.0078	0.34	0.099	46	0.41	0.52	1.4	<0.44	1.2	0.60	2.0	2.7	1.4	0.19	
	05-08-2014	14	0.11	0.19	<0.0078	0.17	0.063	75	0.44	0.27	0.74	<0.44	<1.3	0.67	2.0	8.8	1.1	0.22	
	03-23-2015	16	0.03	0.10	<0.0078	0.17	0.074	110	0.46	0.50	2.3	<0.44	<1.3	0.62	2.4	14.0	1.3	0.33	
	10-30-2015	0.77	<0.17	<0.13	<0.25	-	<0.19	<1.9	<0.20	0.85	3.0	0.44	2.03	1.0	-	-	-	-	0.18
	10-13-2016	40	<0.17	<0.13	<0.25	-	<0.19	<1.9	0.35	0.42	3.1	0.24	1.05	-	-	-	-	-	0.39
	02-20-2017	0.38	0.019	0.20	<0.0023	0.12	0.20	76	0.45	0.57	3.5	0.25	0.90	0.92	2.5	7.0	1.4	0.21	
SFBRWCB ESL (Commercial)		2.1	3.0	0.58	0.17	0.36	1.1	140,000	0.29	0.42	1,300	4.9	440	390	-	-	-	2.3	

**TABLE 1**  
**INDOOR AIR ANALYTICAL RESULTS**  
**SWISS VALLEY CLEANERS**  
 1395 MacArthur Boulevard,  
 San Leandro, California  
 (micrograms per cubic meter)

Sample ID	Date	TO-15																	
		PCE	TCE	1,2-DCA	EDB	Naphthalene	1,4-DCB	Acetone	CT	B	T	E	X	Chloromethane	DCDFM	Ethyl Acetate	TCFM	Chloroform	
IA-1383 MacArthur (Sothea's Beauty Salon; First Adjacent Unit to North of Subject Suite)	04-10-2014	11	0.057	0.43	0.011	0.26	0.096	3,600	0.38	0.65	11	0.49	2.0	<0.21	<0.50	260	<0.57	0.51	
	05-08-2014	17	0.055	1.1	<0.0078	0.36	0.12	5,200	0.45	0.69	21	<0.44	1.5	<0.21	<0.50	1600	<0.57	0.49	
	03-23-2015	19	0.064	0.37	<0.0078	0.41	0.33	8,600	0.56	0.64	15	0.53	2.0	<0.21	0.89	580	0.84	5.3	
	10-30-2015	3.5	<0.17	<1.3	<2.5	-	<1.9	1,300	<2.0	<2.6	5.2	<1.4	<1.4	1.7	-	-	-	-	<1.6
	10-13-2016	7.2	<1.7	<1.3	<2.4	-	<1.9	6,300	<2.0	<2.5	14	<1.4	<1.4	-	-	-	-	-	<1.5
	02-20-2017	0.83	0.077	0.41	<0.0023	0.17	0.22	2,000	0.46	0.71	11	0.38	1.2	0.96	<0.0035	200	1.4	0.53	
SFBRWCB ESL (Commercial)		2.1	3.0	0.58	0.17	0.36	1.1	140,000	0.29	0.42	1,300	4.9	440	390	-	-	-	2.3	

**TABLE 1**  
**INDOOR AIR ANALYTICAL RESULTS**  
**SWISS VALLEY CLEANERS**  
 1395 MacArthur Boulevard,  
 San Leandro, California  
 (micrograms per cubic meter)

Sample ID	Date	TO-15																
		PCE	TCE	1,2-DCA	EDB	Naphthalene	1,4-DCB	Acetone	CT	B	T	E	X	Chloromethane	DCDFM	Ethyl Acetate	TCFM	Chloroform
IA-1377 MacArthur (Estudillo Plaza Optometry; Second Adjacent Unit)	04-10-2014	2.1	0.027	0.76	<0.0078	0.22	0.10	110	0.39	0.54	2.8	0.69	3.0	0.54	1.8	7.4	0.78	0.18
	05-08-2014	5.1	0.033	1.10	<0.0078	0.38	0.37	38	0.45	0.37	6.9	1.1	4.4	0.67	2.1	4.9	1	0.2
	10-30-2015	3.2	<1.8	<1.3	<2.5	-	<2.0	97	<2.1	<2.6	4.8	<1.4	<1.4	<1.7	-	-	-	<1.6
	10-13-2016	5.3	<0.38	<0.28	<0.54	-	<0.42	310	<0.44	<0.56	2.1	0.88	3.8	-	-	-	-	<0.34
SFBRWCB ESL (Commercial)		2.1	3.0	0.58	0.17	0.36	1.1	140,000	0.29	0.42	1,300	4.9	440	390	-	-	-	2.3

**TABLE 1**  
**INDOOR AIR ANALYTICAL RESULTS**  
**SWISS VALLEY CLEANERS**  
 1395 MacArthur Boulevard,  
 San Leandro, California  
 (micrograms per cubic meter)

Sample ID	Date	TO-15																
		PCE	TCE	1,2-DCA	EDB	Naphthalene	1,4-DCB	Acetone	CT	B	T	E	X	Chloromethane	DCDFM	Ethyl Acetate	TCFM	Chloroform
IA-1369 MacArthur (Former Jazzercise)	05-08-2014	0.045	0.020	2.2	<0.0078	0.26	0.17	18	0.47	0.60	2.1	<0.44	<1.3	0.68	2.0	2.2	1.3	0.25
Outside 1395 MacArthur (Ambiant Air)	05-08-2014	0.042	0.014	0.067	<0.0078	0.12	0.023	13	0.47	0.20	0.41	<0.44	<1.3	0.64	2.0	2.1	1.1	0.24
SFBRWCB ESL (Commercial)		2.1	3.0	0.58	0.17	0.36	1.1	140,000	0.29	0.42	1,300	4.9	440	390	-	-	-	2.3

**Notes:**

SFBRWCB ESL: San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for indoor Air.

<: Indicates constituents were not detected at a concentration greater than the reporting limit shown.

PCE: Tetrachloroethene

TCE: Trichloroethene

1,2-DCA: 1,2-Dichloroethane

EDB: 1,2-Dibromoethane

1,4-DCB: 1,4-dichlorobenzene

VC: Vinyl Chloride

CT: Carbon Tetrachloride

DCDFM: Dichlorodifluoromethane

TCFM: Trichlorofluoromethane

IPA: Isopropyl Alcohol

B: Benzene; T: Toluene; E: Ethyl-benzene; X: Total Xylenes

\*Concentrations denoted with orange fill are above ambient and indoor air screening levels for a commercial setting.

**TABLE 2**  
**SUB-SLAB VAPOR ANALYTICAL RESULTS**  
**Swiss Valley Cleaners**  
**1395 MacArthur Boulevard, San Leandro, California**  
**(micrograms per cubic meter)**

Sample ID	Location	Date	TO-15																				
			Dry Cleaning Constituents						Chemicals from other sources														
			PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	IPA	1,2-DCA	B	T	E	X	1,2-DCP	Ethanol	4-ET	1,2,4-TMB	Ethyl Acetate	Naphthalene	1,3,5-TMB	Acetone	2-Butanone
SS-1	1369 MacArthur Boulevard	03-23-2015	5,700	3.3	<2.0	<2.0	<2.0	<1.3	<50	<2.0	42	58	39	190	<2.4	<96	53	98	<1.8	<5.3	64	<60	<75
		10-30-2015	1,700	<5.9	<4.4	<4.4	<4.4	<2.8	<11	<4.5	<3.5	<4.2	<4.8	<4.8	<5.1	<8.3	<5.4	<33	-	-	<5.4	<26	<13
SS-2	1383 MacArthur Boulevard	03-23-2015	5,400	<2.8	<2.0	<2.0	<2.0	<1.3	<50	<2.0	8.6	2.2	<2.2	<6.6	<2.4	<96	<2.5	9.8	4.7	<5.3	2.7	<60	<75
		10-30-2015	12,000	<41	<30	<30	<30	<20	<76	<31	<24	<29	<33	<33	<36	<58	<38	<38	-	-	<38	<180	<91
		10-13-2016	15,000	<31	<23	<22	<22	<14	79	<23	<18	<21	<25	<25	<26	<43	<28	<170	-	-	<28	<140	<67
		02-20-2017	37	<2.8	<2.0	<2.0	<2.3	<1.3	91	<2.0	<1.6	1.9	<2.2	<6.6	<2.4	<96	<2.5	<2.5	2.7	<5.3	<2.5	160	<67
SS-3	1395 MacArthur Boulevard (Front of Suite)	03-23-2015	8,300	19	<2.0	<2.0	<2.0	<1.3	<50	<2.0	13	5.1	3.9	24	<2.4	<96	6.2	29	<1.8	<5.3	6.8	<60	<75
		10-30-2015	24,000	67	<46	<46	<46	<29	<110	<46	<37	<43	<50	<50	<53	<87	<56	<56	-	-	<56	<270	<140
		10-13-2016	20,000	<73	<55	<54	<54	<35	<130	<55	<43	<51	<59	<59	<63	<100	<67	<67	-	-	<67	<320	<160
		02-20-2017	99	<2.8	<2.0	<2.0	<2.3	<1.3	<50	<2.0	<1.6	<1.9	<2.2	<6.6	<2.4	<96	<2.5	<2.5	<1.8	<5.3	<2.5	<60	<75

**TABLE 2**  
**SUB-SLAB VAPOR ANALYTICAL RESULTS**  
**Swiss Valley Cleaners**  
**1395 MacArthur Boulevard, San Leandro, California**  
**(micrograms per cubic meter)**

Sample ID	Location	Date	TO-15																				
			Dry Cleaning Constituents						Chemicals from other sources														
			PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	VC	IPA	1,2-DCA	B	T	E	X	1,2-DCP	Ethanol	4-ET	1,2,4-TMB	Ethyl Acetate	Naphthalene	1,3,5-TMB	Acetone	2-Butanone
SS-4	1395 MacArthur Boulevard (Rear of Suite)	03-23-2015	7,600	5.6	<2.0	<2.0	<2.0	<1.3	<50	2.2	17	14	9.4	44	<2.4	<96	9.6	29	<1.8	<5.3	5.7	<60	<75
		10-30-2015	21,000	<48	<48	<47	<47	<30	<120	<48	<38	<45	<51	<51	<55	<89	<58	<58	-	-	<58	<280	<140
		10-13-2016	19,000	<40	<30	<29	<29	<19	<72	<48	<23	<28	<32	<32	<34	<55	<36	<36	-	-	<36	<170	<87
		02-20-2017	420	<2.8	<2.0	<2.0	<2.3	<1.3	1,300	<2.0	<1.6	<1.9	<2.2	<6.6	<2.4	<96	<2.5	<2.5	<1.8	<5.3	<2.5	<60	<75
CHHSLs (Commercial)			1,600	1,300	-	240,000	120,000	95.0	-	360	280	890,000	3,600	6,700,000	-	-	-	-	-	310	-	-	-
SFBRWCB ESL (Commercial)			2,100	3,000	880,000	2,600,000	-	160	-	580	420	1,300,000	4,900	440,000	1,200	-	-	-	-	360	-	140,000,000	22,000,000

**Notes:**

SFBRWCB ESL: San Francisco Bay Regional Water Quality Control Board Environmental Screening Level for shallow soil gas  
 <: Indicates constituents were not detected at a concentration greater than the reporting limit shown.  
 CHHSLs: California Human Health Screening Levels (Soil Gas Screening for VOC's below buildings constructed with engineer fill below sub-slab gravel)  
 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  
 IPA: Isopropyl Alcohol  
 B: Benzene; T: Toluene; E: Ethyl-benzene; X: Total Xylenes  
 1,2-DCA: 1,2-Dichloroethane  
 1,2-DCP: 1,2-Dichloropropane  
 4-ET: 4-Ethyltoluene  
 1,2,4-TMB: 1,2,4-Trimethylbenzene  
 1,3,5-TMB: 1,3,5-Trimethylbenzene

# **APPENDIX A**





# Soil Vapor Sampling Field Log

Date: 10-13-10 Field Personnel: DTN/KC

Purge Apparatus:	200ml/min low flow pump
Purge Volume:	118 ml
Purge Time:	36 seconds
Sample Canister Total Volume:	6.0L

Field Point: SS-2 (Solthea) Sample ID: SS-2 = 0.7 ppm

Canister #:	Purge		Sample	
	Initial	Post	Initial	Post
<u>2437 36406</u>				
Manifold#:				
<u>30805</u>				
Time	<u>1021</u>	<u>1022</u>	<u>1022</u>	<u>1020</u>
Pressure (in Hg)	-	-	<u>29 Hg</u>	<u>4 Hg</u>
Manifold Leak Test (10 Minutes):				
Start Time:	<u>1010</u>	End Time:	<u>1020</u>	

Field Point: SS-3 (Front of SUC) Sample ID: = 0.2 ppm

Canister #:	Purge		Sample	
	Initial	Post	Initial	Post
<u>20049</u>				
Manifold#:				
<u>100601</u>				
Time	<u>1046</u>	<u>1047</u>	<u>1046</u>	<u>1053</u>
Pressure (in Hg)			<u>25 Hg</u>	<u>4 Hg</u>
Manifold Leak Test (10 Minutes):				
Start Time:	<u>1030</u>	End Time:	<u>1040</u>	

Field Point: SS-4 (Rear of SUC) Sample ID: = 0.7 ppm

Canister #:	Purge		Sample	
	Initial	Post	Initial	Post
<u>27381</u>				
Manifold#:				
<u>30966</u>				
Time	<u>1112</u>	<u>1113</u>	<u>1114</u>	<u>1122</u>
Pressure (in Hg)			<u>29 Hg</u>	<u>29 Hg</u>
Manifold Leak Test (10 Minutes):				
Start Time:	<u>1100</u>	End Time:	<u>1110</u>	

Field Point: ~~SS-4~~ Sample ID:

Canister #:	Purge		Sample	
	Initial	Post	Initial	Post
Manifold#:				
Time				
Pressure (in Hg)				
Manifold Leak Test (10 Minutes):				
Start Time:		End Time:		

# **APPENDIX B**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1702A12

**Report Created for:** Advanced GeoEnvironmental, Inc.

837 Shaw Road  
Stockton, CA 95215

**Project Contact:** Daniel Villanueva

**Project P.O.:**

**Project Name:** Swiss Valley Cleaners

**Project Received:** 02/21/2017

Analytical Report reviewed & approved for release on 02/23/2017 by:

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:** Swiss Valley Cleaners  
**WorkOrder:** 1702A12

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
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
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
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
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

### Analytical Qualifiers

**B** analyte detected in the associated Method Blank and in the sample  
**J** result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.



## Glossary of Terms & Qualifier Definitions

**Client:** Advanced GeoEnvironmental, Inc.  
**Project:** Swiss Valley Cleaners  
**WorkOrder:** 1702A12

### Quality Control Qualifiers

F2 LCS/LCSD recovery and/or RPD is out of acceptance criteria.



## Case Narrative

**Client:** Advanced GeoEnvironmental, Inc.  
**Project:** Swiss Valley Cleaners

**Work Order:** 1702A12  
February 22, 2017

### 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 Active Soil Gas Advisory of July 2015.



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-1383 MacArthur	1702A12-001A	Indoor Air	02/20/2017 12:25	GC29	134550

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.38	13.38	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acetone	2000		26	150	25	02/22/2017 01:02
Acrolein	ND		0.047	0.58	1	02/22/2017 08:55
Acrylonitrile	ND		0.035	0.22	1	02/22/2017 08:55
tert-Amyl methyl ether (TAME)	ND		0.21	0.42	1	02/22/2017 08:55
Benzene	0.71		0.0030	0.032	1	02/22/2017 08:55
Benzyl chloride	ND		0.053	0.53	1	02/22/2017 08:55
Bromodichloromethane	ND		0.0028	0.0070	1	02/22/2017 08:55
Bromoform	ND		0.12	1.1	1	02/22/2017 08:55
Bromomethane	ND		0.058	0.39	1	02/22/2017 08:55
1,3-Butadiene	ND		0.048	0.22	1	02/22/2017 08:55
2-Butanone (MEK)	6.6	J	1.0	7.5	1	02/22/2017 08:55
t-Butyl alcohol (TBA)	ND		5.7	6.2	1	02/22/2017 08:55
Carbon Disulfide	ND		0.045	0.32	1	02/22/2017 08:55
Carbon Tetrachloride	0.46		0.0026	0.0064	1	02/22/2017 08:55
Chlorobenzene	ND		0.024	0.47	1	02/22/2017 08:55
Chloroethane	ND		0.046	0.27	1	02/22/2017 08:55
Chloroform	0.53		0.0034	0.025	1	02/22/2017 08:55
Chloromethane	0.96		0.025	0.21	1	02/22/2017 08:55
Cyclohexane	0.46	J	0.052	1.8	1	02/22/2017 08:55
Dibromochloromethane	ND		0.0035	0.87	1	02/22/2017 08:55
1,2-Dibromo-3-chloropropane	ND		0.0049	0.050	1	02/22/2017 08:55
1,2-Dibromoethane (EDB)	ND		0.0023	0.0078	1	02/22/2017 08:55
1,2-Dichlorobenzene	ND		0.079	0.61	1	02/22/2017 08:55
1,3-Dichlorobenzene	ND		0.061	0.61	1	02/22/2017 08:55
1,4-Dichlorobenzene	0.22		0.0031	0.030	1	02/22/2017 08:55
Dichlorodifluoromethane	2.3		0.050	0.50	1	02/22/2017 08:55
1,1-Dichloroethane	ND		0.14	0.41	1	02/22/2017 08:55
1,2-Dichloroethane (1,2-DCA)	0.41		0.0012	0.0041	1	02/22/2017 08:55
1,1-Dichloroethene	ND		0.076	0.10	1	02/22/2017 08:55
cis-1,2-Dichloroethene	ND		0.040	0.40	1	02/22/2017 08:55
trans-1,2-Dichloroethene	ND		0.028	0.40	1	02/22/2017 08:55
1,2-Dichloropropane	0.039		0.0020	0.0047	1	02/22/2017 08:55
cis-1,3-Dichloropropene	ND		0.0014	0.12	1	02/22/2017 08:55

(Cont.)

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-1383 MacArthur	1702A12-001A	Indoor Air	02/20/2017 12:25	GC29	134550

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.38	13.38	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
trans-1,3-Dichloropropene	ND		0.092	0.12	1	02/22/2017 08:55
1,2-Dichloro-1,1,2,2-tetrafluoroethane	<b>0.15</b>	J	0.071	0.71	1	02/22/2017 08:55
Diisopropyl ether (DIPE)	ND		0.034	0.42	1	02/22/2017 08:55
1,4-Dioxane	ND		0.0011	0.018	1	02/22/2017 08:55
Ethyl acetate	<b>200</b>		0.74	23	25	02/22/2017 01:02
Ethyl tert-butyl ether (ETBE)	ND		0.13	0.42	1	02/22/2017 08:55
Ethylbenzene	<b>0.38</b>	J	0.035	0.44	1	02/22/2017 08:55
4-Ethyltoluene	ND		0.035	0.50	1	02/22/2017 08:55
Freon 113	<b>0.63</b>	J	0.062	0.78	1	02/22/2017 08:55
Heptane	<b>1.3</b>	J	0.029	2.1	1	02/22/2017 08:55
Hexachlorobutadiene	ND		0.076	1.1	1	02/22/2017 08:55
Hexane	<b>1.2</b>	J	0.047	1.8	1	02/22/2017 08:55
2-Hexanone	ND		0.034	0.42	1	02/22/2017 08:55
4-Methyl-2-pentanone (MIBK)	<b>0.33</b>	J	0.042	0.42	1	02/22/2017 08:55
Methyl-t-butyl ether (MTBE)	ND		0.084	0.37	1	02/22/2017 08:55
Methylene chloride	<b>0.71</b>	J	0.063	0.88	1	02/22/2017 08:55
Methyl methacrylate	<b>930</b>		1.0	10	25	02/22/2017 01:02
Naphthalene	<b>0.17</b>	B	0.0082	0.050	1	02/22/2017 08:55
Propene	ND		1.8	8.8	1	02/22/2017 08:55
Styrene	<b>0.41</b>	J	0.034	0.43	1	02/22/2017 08:55
1,1,1,2-Tetrachloroethane	<b>0.32</b>		0.0021	0.0070	1	02/22/2017 08:55
1,1,2,2-Tetrachloroethane	ND		0.0063	0.0070	1	02/22/2017 08:55
Tetrachloroethene	<b>0.83</b>		0.0028	0.069	1	02/22/2017 08:55
Tetrahydrofuran	<b>1.2</b>		0.033	0.60	1	02/22/2017 08:55
Toluene	<b>11</b>		0.031	0.38	1	02/22/2017 08:55
1,2,4-Trichlorobenzene	ND		0.090	0.75	1	02/22/2017 08:55
1,1,1-Trichloroethane	ND		0.099	0.55	1	02/22/2017 08:55
1,1,2-Trichloroethane	ND		0.0030	0.0055	1	02/22/2017 08:55
Trichloroethene	<b>0.077</b>		0.0055	0.027	1	02/22/2017 08:55
Trichlorofluoromethane	<b>1.4</b>		0.068	0.57	1	02/22/2017 08:55
1,2,4-Trimethylbenzene	<b>0.40</b>	J	0.045	0.50	1	02/22/2017 08:55
1,3,5-Trimethylbenzene	<b>0.13</b>	J	0.060	0.50	1	02/22/2017 08:55
Vinyl Acetate	ND		0.12	1.8	1	02/22/2017 08:55

(Cont.)

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-1383 MacArthur	1702A12-001A	Indoor Air	02/20/2017 12:25	GC29	134550

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.38	13.38	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Vinyl Chloride	ND		0.0016	0.013	1	02/22/2017 08:55
Xylenes, Total	1.2	J	0.079	1.3	1	02/22/2017 08:55

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	99	70-130	02/22/2017 08:55
Toluene-d8	103	70-130	02/22/2017 08:55
4-BFB	99	70-130	02/22/2017 08:55



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-1395 MacArthur	1702A12-002A	Indoor Air	02/20/2017 12:30	GC29	134550

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.62	13.62	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Acetone	76		1.0	6.0	1	02/22/2017 02:47
Acrolein	ND		0.047	0.58	1	02/22/2017 02:47
Acrylonitrile	ND		0.035	0.22	1	02/22/2017 02:47
tert-Amyl methyl ether (TAME)	ND		0.21	0.42	1	02/22/2017 02:47
Benzene	0.57		0.0030	0.032	1	02/22/2017 02:47
Benzyl chloride	ND		0.053	0.53	1	02/22/2017 02:47
Bromodichloromethane	ND		0.0028	0.0070	1	02/22/2017 02:47
Bromoform	ND		0.12	1.1	1	02/22/2017 02:47
Bromomethane	ND		0.058	0.39	1	02/22/2017 02:47
1,3-Butadiene	ND		0.048	0.22	1	02/22/2017 02:47
2-Butanone (MEK)	5.2	J	1.0	7.5	1	02/22/2017 02:47
t-Butyl alcohol (TBA)	ND		5.7	6.2	1	02/22/2017 02:47
Carbon Disulfide	ND		0.045	0.32	1	02/22/2017 02:47
Carbon Tetrachloride	0.45		0.0026	0.0064	1	02/22/2017 02:47
Chlorobenzene	ND		0.024	0.47	1	02/22/2017 02:47
Chloroethane	ND		0.046	0.27	1	02/22/2017 02:47
Chloroform	0.21		0.0034	0.025	1	02/22/2017 02:47
Chloromethane	0.92		0.025	0.21	1	02/22/2017 02:47
Cyclohexane	0.36	J	0.052	1.8	1	02/22/2017 02:47
Dibromochloromethane	ND		0.0035	0.87	1	02/22/2017 02:47
1,2-Dibromo-3-chloropropane	ND		0.0049	0.050	1	02/22/2017 02:47
1,2-Dibromoethane (EDB)	ND		0.0023	0.0078	1	02/22/2017 02:47
1,2-Dichlorobenzene	ND		0.079	0.61	1	02/22/2017 02:47
1,3-Dichlorobenzene	ND		0.061	0.61	1	02/22/2017 02:47
1,4-Dichlorobenzene	0.20		0.0031	0.030	1	02/22/2017 02:47
Dichlorodifluoromethane	2.5		0.050	0.50	1	02/22/2017 02:47
1,1-Dichloroethane	ND		0.14	0.41	1	02/22/2017 02:47
1,2-Dichloroethane (1,2-DCA)	0.20		0.0012	0.0041	1	02/22/2017 02:47
1,1-Dichloroethene	ND		0.076	0.10	1	02/22/2017 02:47
cis-1,2-Dichloroethene	ND		0.040	0.40	1	02/22/2017 02:47
trans-1,2-Dichloroethene	ND		0.028	0.40	1	02/22/2017 02:47
1,2-Dichloropropane	0.028		0.0020	0.0047	1	02/22/2017 02:47
cis-1,3-Dichloropropene	ND		0.0014	0.12	1	02/22/2017 02:47

(Cont.)

Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-1395 MacArthur	1702A12-002A	Indoor Air	02/20/2017 12:30	GC29	134550

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.62	13.62	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
trans-1,3-Dichloropropene	ND		0.092	0.12	1	02/22/2017 02:47
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.14	J	0.071	0.71	1	02/22/2017 02:47
Diisopropyl ether (DIPE)	ND		0.034	0.42	1	02/22/2017 02:47
1,4-Dioxane	ND		0.0011	0.018	1	02/22/2017 02:47
Ethyl acetate	7.0		0.030	0.92	1	02/22/2017 02:47
Ethyl tert-butyl ether (ETBE)	ND		0.13	0.42	1	02/22/2017 02:47
Ethylbenzene	0.25	J	0.035	0.44	1	02/22/2017 02:47
4-Ethyltoluene	ND		0.035	0.50	1	02/22/2017 02:47
Freon 113	0.63	J	0.062	0.78	1	02/22/2017 02:47
Heptane	1.1	J	0.029	2.1	1	02/22/2017 02:47
Hexachlorobutadiene	ND		0.076	1.1	1	02/22/2017 02:47
Hexane	0.45	J	0.047	1.8	1	02/22/2017 02:47
2-Hexanone	0.27	J	0.034	0.42	1	02/22/2017 02:47
4-Methyl-2-pentanone (MIBK)	0.19	J	0.042	0.42	1	02/22/2017 02:47
Methyl-t-butyl ether (MTBE)	ND		0.084	0.37	1	02/22/2017 02:47
Methylene chloride	0.98		0.063	0.88	1	02/22/2017 02:47
Methyl methacrylate	29		0.042	0.42	1	02/22/2017 02:47
Naphthalene	0.12	B	0.0082	0.050	1	02/22/2017 02:47
Propene	ND		1.8	8.8	1	02/22/2017 02:47
Styrene	0.14	J	0.034	0.43	1	02/22/2017 02:47
1,1,1,2-Tetrachloroethane	ND		0.0021	0.0070	1	02/22/2017 02:47
1,1,2,2-Tetrachloroethane	ND		0.0063	0.0070	1	02/22/2017 02:47
Tetrachloroethene	0.38		0.0028	0.069	1	02/22/2017 02:47
Tetrahydrofuran	21		0.033	0.60	1	02/22/2017 02:47
Toluene	3.5		0.031	0.38	1	02/22/2017 02:47
1,2,4-Trichlorobenzene	ND		0.090	0.75	1	02/22/2017 02:47
1,1,1-Trichloroethane	ND		0.099	0.55	1	02/22/2017 02:47
1,1,2-Trichloroethane	ND		0.0030	0.0055	1	02/22/2017 02:47
Trichloroethene	0.019	J	0.0055	0.027	1	02/22/2017 02:47
Trichlorofluoromethane	1.4		0.068	0.57	1	02/22/2017 02:47
1,2,4-Trimethylbenzene	0.87		0.045	0.50	1	02/22/2017 02:47
1,3,5-Trimethylbenzene	0.35	J	0.060	0.50	1	02/22/2017 02:47
Vinyl Acetate	ND		0.12	1.8	1	02/22/2017 02:47

(Cont.)

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-1395 MacArthur	1702A12-002A	Indoor Air	02/20/2017 12:30	GC29	134550

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.62	13.62	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Vinyl Chloride	ND		0.0016	0.013	1	02/22/2017 02:47
Xylenes, Total	<b>0.90</b>	J	0.079	1.3	1	02/22/2017 02:47

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	108	70-130	02/22/2017 02:47
Toluene-d8	106	70-130	02/22/2017 02:47
4-BFB	98	70-130	02/22/2017 02:47

Angela Rydelius, Lab Manager



## Quality Control Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Prepared:** 2/21/17  
**Date Analyzed:** 2/21/17  
**Instrument:** GC29  
**Matrix:** Indoor Air  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**BatchID:** 134550  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-134550

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	14.2	1.0	6.0	12	-	118	60-140
Acrolein	ND	14.9	0.047	0.58	11.65	-	128	60-140
Acrylonitrile	ND	15.3	0.035	0.22	11	-	139	60-140
tert-Amyl methyl ether (TAME)	ND	26.7	0.21	0.42	21	-	127	60-140
Benzene	ND	20.8	0.0030	0.032	16	-	130	60-140
Benzyl chloride	ND	33.4	0.053	0.53	26.5	-	126	60-140
Bromodichloromethane	ND	42.0	0.0028	0.0070	35	-	120	60-140
Bromoform	ND	71.5	0.12	1.1	52.5	-	136	60-140
Bromomethane	ND	23.4	0.058	0.39	19.5	-	120	60-140
1,3-Butadiene	ND	11.1	0.048	0.22	11	-	101	60-140
2-Butanone (MEK)	ND	19.3	1.0	7.5	15	-	129	60-140
t-Butyl alcohol (TBA)	ND	19.2	5.7	6.2	15.5	-	124	60-140
Carbon Disulfide	ND	19.8	0.045	0.32	16	-	124	60-140
Carbon Tetrachloride	ND	39.6	0.0026	0.0064	32	-	124	60-140
Chlorobenzene	ND	29.3	0.024	0.47	23.5	-	125	60-140
Chloroethane	ND	15.9	0.046	0.27	13.5	-	118	60-140
Chloroform	ND	27.4	0.0034	0.025	24.5	-	112	60-140
Chloromethane	ND	11.2	0.025	0.21	10.5	-	107	60-140
Cyclohexane	ND	20.4	0.052	1.8	17.5	-	117	60-140
Dibromochloromethane	ND	57.5	0.0035	0.87	43.5	-	132	60-140
1,2-Dibromo-3-chloropropane	ND	63.1	0.0049	0.050	49	-	129	60-140
1,2-Dibromoethane (EDB)	ND	45.6	0.0023	0.0078	39	-	117	60-140
1,2-Dichlorobenzene	ND	37.3	0.079	0.61	30.5	-	122	60-140
1,3-Dichlorobenzene	ND	37.1	0.061	0.61	30.5	-	122	60-140
1,4-Dichlorobenzene	0.01337,J	37.0	0.0031	0.030	30.5	-	121	60-140
Dichlorodifluoromethane	ND	27.8	0.050	0.50	25	-	111	60-140
1,1-Dichloroethane	ND	24.4	0.14	0.41	20.5	-	119	60-140
1,2-Dichloroethane (1,2-DCA)	0.001681,J	22.2	0.0012	0.0041	20.5	-	108	60-140
1,1-Dichloroethene	ND	22.2	0.076	0.10	20	-	111	60-140
cis-1,2-Dichloroethene	ND	23.9	0.040	0.40	20	-	120	60-140
trans-1,2-Dichloroethene	ND	24.3	0.028	0.40	20	-	122	60-140
1,2-Dichloropropane	ND	26.8	0.0020	0.0047	23.5	-	114	60-140
cis-1,3-Dichloropropene	ND	28.6	0.0014	0.12	23	-	124	60-140
trans-1,3-Dichloropropene	ND	28.9	0.092	0.12	23	-	126	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	40.7	0.071	0.71	35.5	-	115	60-140
Diisopropyl ether (DIPE)	ND	27.0	0.034	0.42	21	-	129	60-140
1,4-Dioxane	ND	28.1	0.0011	0.018	18.5	-	152, F2	60-140

(Cont.)

 QA/QC Officer



## Quality Control Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Prepared:** 2/21/17  
**Date Analyzed:** 2/21/17  
**Instrument:** GC29  
**Matrix:** Indoor Air  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A12  
**BatchID:** 134550  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-134550

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethyl acetate	ND	22.9	0.030	0.92	18.5	-	124	60-140
Ethyl tert-butyl ether (ETBE)	ND	25.9	0.13	0.42	21	-	123	60-140
Ethylbenzene	ND	27.0	0.035	0.44	22	-	123	60-140
4-Ethyltoluene	ND	31.4	0.035	0.50	25	-	126	60-140
Freon 113	ND	46.6	0.062	0.78	39	-	119	60-140
Heptane	ND	25.5	0.029	2.1	21	-	122	60-140
Hexachlorobutadiene	ND	67.4	0.076	1.1	54	-	125	60-140
Hexane	ND	22.1	0.047	1.8	18	-	123	60-140
2-Hexanone	ND	26.3	0.034	0.42	21	-	125	60-140
4-Methyl-2-pentanone (MIBK)	ND	27.2	0.042	0.42	21	-	130	60-140
Methyl-t-butyl ether (MTBE)	ND	22.0	0.084	0.37	18.5	-	119	60-140
Methylene chloride	ND	20.6	0.063	0.88	17.5	-	117	60-140
Methyl methacrylate	ND	26.7	0.042	0.42	20.8	-	128	60-140
Naphthalene	0.05015	63.5	0.0082	0.050	53	-	120	60-140
Propene	ND	7.62	1.8	8.8	8.5	-	90	60-140
Styrene	ND	26.7	0.034	0.43	21.5	-	124	60-140
1,1,1,2-Tetrachloroethane	ND	45.1	0.0021	0.0070	35	-	129	60-140
1,1,2,2-Tetrachloroethane	ND	42.6	0.0063	0.0070	35	-	122	60-140
Tetrachloroethene	ND	44.8	0.0028	0.069	34.5	-	130	60-140
Tetrahydrofuran	0.1205,J	15.4	0.033	0.60	15	-	103	60-140
Toluene	ND	22.9	0.031	0.38	19	-	121	60-140
1,2,4-Trichlorobenzene	ND	49.8	0.090	0.75	37.5	-	133	60-140
1,1,1-Trichloroethane	ND	33.4	0.099	0.55	27.5	-	121	60-140
1,1,2-Trichloroethane	ND	32.8	0.0030	0.0055	27.5	-	119	60-140
Trichloroethene	ND	32.1	0.0055	0.027	27.5	-	117	60-140
Trichlorofluoromethane	ND	34.6	0.068	0.57	28.5	-	121	60-140
1,2,4-Trimethylbenzene	ND	31.5	0.045	0.50	25	-	126	60-140
1,3,5-Trimethylbenzene	ND	33.5	0.060	0.50	25	-	134	60-140
Vinyl Acetate	ND	22.4	0.12	1.8	18	-	125	60-140
Vinyl Chloride	ND	12.6	0.0016	0.013	13	-	97	60-140
Xylenes, Total	ND	82.4	0.079	1.3	66	-	125	60-140
<b>Surrogate Recovery</b>								
1,2-DCA-d4	104.4	98.9			100	104	99	70-130
Toluene-d8	104.9	102			100	105	102	70-130
4-BFB	96.8	97.2			100	97	97	70-130

 QA/QC Officer



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1702A12

ClientCode: AGES

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Daniel Villanueva  
Advanced GeoEnvironmental, Inc.  
837 Shaw Road  
Stockton, CA 95215  
(209) 467-1006    FAX: (209) 467-1118

Email: [dvillanueva@advgeoenv.com](mailto:dvillanueva@advgeoenv.com)  
cc/3rd Party:  
PO:  
ProjectNo: Swiss Valley Cleaners

**Bill to:**

Erica  
Advanced GeoEnvironmental, Inc.  
837 Shaw Road  
Stockton, CA 95215  
[ap@advgeoenv.com](mailto:ap@advgeoenv.com)

**Requested TATs:** 2 days;  
5 days;

**Date Received:** 02/21/2017  
**Date Logged:** 02/21/2017

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
1702A12-001	IA-1383 MacArthur	Indoor Air	2/20/2017 12:25	<input type="checkbox"/>		A										
1702A12-002	IA-1395 MacArthur	Indoor Air	2/20/2017 12:30	<input type="checkbox"/>		A										
1702A12-003	Un-Used Summa	Indoor Air	<Not Provided>	<input type="checkbox"/>	A		A									

**Test Legend:**

1	PRUNUSEDSUMMA	2	TO15_SCAN-SIM_Indoor(ug/m3)	3	UNUSED_SUMMA	4	
5		6		7		8	
9		10		11		12	

**Prepared by: Maria Venegas**

The following SampIDs: 001A, 002A contain testgroup TO15\_INDOOR.

**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.

**Project:** Swiss Valley Cleaners

**Work Order:** 1702A12

**Client Contact:** Daniel Villanueva

**QC Level:** LEVEL 2

**Contact's Email:** dvillanueva@advgeoenv.com

**Comments:**

**Date Logged:** 2/21/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1702A12-001A	IA-1383 MacArthur	Indoor Air	TO15 for Indoor Air (Scan-SIM)	1	6L Summa	<input type="checkbox"/>	2/20/2017 12:25	2 days		<input type="checkbox"/>	
1702A12-002A	IA-1395 MacArthur	Indoor Air	TO15 for Indoor Air (Scan-SIM)	1	6L Summa	<input type="checkbox"/>	2/20/2017 12:30	2 days		<input type="checkbox"/>	
1702A12-003A	Un-Used Summa	Indoor Air	Unused Summa	1	6L Summa	<input type="checkbox"/>	<Not Provided>	5 days		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.







### Sample Receipt Checklist

Client Name: **Advanced GeoEnvironmental, Inc.**  
 Project Name: **Swiss Valley Cleaners**

Date and Time Received: **2/21/2017 13:15**  
 Date Logged: **2/21/2017**  
 Received by: **Maria Venegas**  
 Logged by: **Maria Venegas**

WorkOrder No: **1702A12** Matrix: Indoor Air  
 Carrier: Client Drop-In

#### 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  NA   
 Sample/Temp Blank temperature 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: <2; 522: <4; 218.7: >8)? Yes  No  NA   
 Samples Received on Ice? Yes  No

#### UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA   
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

Comments:

# **APPENDIX C**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1702A13

**Report Created for:** Advanced GeoEnvironmental, Inc.

837 Shaw Road  
Stockton, CA 95215

**Project Contact:** Daniel Villanueva

**Project P.O.:**

**Project Name:** Swiss Valley Cleaners

**Project Received:** 02/21/2017

Analytical Report reviewed & approved for release on 02/23/2017 by:

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:** Swiss Valley Cleaners  
**WorkOrder:** 1702A13

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
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
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
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
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

### Quality Control Qualifiers

F2 LCS/LCSD recovery and/or RPD is out of acceptance criteria.



## Case Narrative

**Client:** Advanced GeoEnvironmental, Inc.  
**Project:** Swiss Valley Cleaners

**Work Order:** 1702A13  
February 23, 2017

### 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 Active Soil Gas Advisory of July 2015.



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/21/17-2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Leak Check Compound

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-2	1702A13-001A	SoilGas	02/20/2017 11:46	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.03	24.09	AK

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	91	50	1	02/22/2017 10:27

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-3	1702A13-002A	SoilGas	02/20/2017 10:29	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.23	24.38	AK

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	02/22/2017 11:12

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-4	1702A13-003A	SoilGas	02/20/2017 11:07	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.69	25.38	AK

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	1300	500	10	02/21/2017 18:35

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-2	1702A13-001A	SoilGas	02/20/2017 11:46	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.03	24.09	AK

Analytes	Result	RL	DF	Date Analyzed
Acetone	160	60	1	02/22/2017 10:27
Acrolein	ND	5.8	1	02/22/2017 10:27
Acrylonitrile	ND	1.1	1	02/22/2017 10:27
tert-Amyl methyl ether (TAME)	ND	2.1	1	02/22/2017 10:27
Benzene	ND	1.6	1	02/22/2017 10:27
Benzyl chloride	ND	2.6	1	02/22/2017 10:27
Bromodichloromethane	ND	3.5	1	02/22/2017 10:27
Bromoform	ND	5.2	1	02/22/2017 10:27
Bromomethane	ND	2.0	1	02/22/2017 10:27
1,3-Butadiene	ND	1.1	1	02/22/2017 10:27
2-Butanone (MEK)	ND	75	1	02/22/2017 10:27
t-Butyl alcohol (TBA)	ND	31	1	02/22/2017 10:27
Carbon Disulfide	ND	1.6	1	02/22/2017 10:27
Carbon Tetrachloride	ND	3.2	1	02/22/2017 10:27
Chlorobenzene	ND	2.4	1	02/22/2017 10:27
Chloroethane	ND	1.3	1	02/22/2017 10:27
Chloroform	ND	2.4	1	02/22/2017 10:27
Chloromethane	ND	1.0	1	02/22/2017 10:27
Cyclohexane	ND	18	1	02/22/2017 10:27
Dibromochloromethane	ND	4.4	1	02/22/2017 10:27
1,2-Dibromo-3-chloropropane	ND	0.12	1	02/22/2017 10:27
1,2-Dibromoethane (EDB)	ND	3.9	1	02/22/2017 10:27
1,2-Dichlorobenzene	ND	3.0	1	02/22/2017 10:27
1,3-Dichlorobenzene	ND	3.0	1	02/22/2017 10:27
1,4-Dichlorobenzene	ND	3.0	1	02/22/2017 10:27
Dichlorodifluoromethane	ND	2.5	1	02/22/2017 10:27
1,1-Dichloroethane	ND	2.0	1	02/22/2017 10:27
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	02/22/2017 10:27
1,1-Dichloroethene	ND	2.0	1	02/22/2017 10:27
cis-1,2-Dichloroethene	ND	2.0	1	02/22/2017 10:27
trans-1,2-Dichloroethene	ND	2.0	1	02/22/2017 10:27
1,2-Dichloropropane	ND	2.4	1	02/22/2017 10:27
cis-1,3-Dichloropropene	ND	2.3	1	02/22/2017 10:27

(Cont.)

 Angela Rydelius, Lab Manager





## Analytical Report

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**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
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Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.03	24.09	AK

Analytes	Result	RL	DF	Date Analyzed
trans-1,3-Dichloropropene	ND	2.3	1	02/22/2017 10:27
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	02/22/2017 10:27
Diisopropyl ether (DIPE)	ND	2.1	1	02/22/2017 10:27
1,4-Dioxane	ND	1.8	1	02/22/2017 10:27
Ethanol	ND	96	1	02/22/2017 10:27
Ethyl acetate	2.7	1.8	1	02/22/2017 10:27
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	02/22/2017 10:27
Ethylbenzene	ND	2.2	1	02/22/2017 10:27
4-Ethyltoluene	ND	2.5	1	02/22/2017 10:27
Freon 113	ND	3.9	1	02/22/2017 10:27
Heptane	ND	21	1	02/22/2017 10:27
Hexachlorobutadiene	ND	5.4	1	02/22/2017 10:27
Hexane	ND	18	1	02/22/2017 10:27
2-Hexanone	2.2	2.1	1	02/22/2017 10:27
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	02/22/2017 10:27
Methyl-t-butyl ether (MTBE)	ND	1.8	1	02/22/2017 10:27
Methylene chloride	ND	8.8	1	02/22/2017 10:27
Methyl methacrylate	16	2.1	1	02/22/2017 10:27
Naphthalene	ND	5.3	1	02/22/2017 10:27
Propene	ND	88	1	02/22/2017 10:27
Styrene	ND	2.2	1	02/22/2017 10:27
1,1,1,2-Tetrachloroethane	ND	3.5	1	02/22/2017 10:27
1,1,2,2-Tetrachloroethane	ND	3.5	1	02/22/2017 10:27
Tetrachloroethene	37	3.4	1	02/22/2017 10:27
Tetrahydrofuran	ND	3.0	1	02/22/2017 10:27
Toluene	1.9	1.9	1	02/22/2017 10:27
1,2,4-Trichlorobenzene	ND	3.8	1	02/22/2017 10:27
1,1,1-Trichloroethane	ND	2.8	1	02/22/2017 10:27
1,1,2-Trichloroethane	ND	2.8	1	02/22/2017 10:27
Trichloroethene	ND	2.8	1	02/22/2017 10:27
Trichlorofluoromethane	ND	2.8	1	02/22/2017 10:27
1,2,4-Trimethylbenzene	ND	2.5	1	02/22/2017 10:27
1,3,5-Trimethylbenzene	ND	2.5	1	02/22/2017 10:27

(Cont.)

Angela Rydelius, Lab Manager



## Analytical Report

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**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-2	1702A13-001A	SoilGas	02/20/2017 11:46	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.03	24.09	AK

Analytes	Result	RL	DF	Date Analyzed
Vinyl Acetate	ND	18	1	02/22/2017 10:27
Vinyl Chloride	ND	1.3	1	02/22/2017 10:27
Xylenes, Total	ND	6.6	1	02/22/2017 10:27
Surrogates	REC (%)	Limits		Date Analyzed
1,2-DCA-d4	98	70-130		02/22/2017 10:27
Toluene-d8	105	70-130		02/22/2017 10:27
4-BFB	96	70-130		02/22/2017 10:27



## Analytical Report

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**WorkOrder:** 1702A13  
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**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-3	1702A13-002A	SoilGas	02/20/2017 10:29	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.23	24.38	AK

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	02/22/2017 11:12
Acrolein	ND	5.8	1	02/22/2017 11:12
Acrylonitrile	ND	1.1	1	02/22/2017 11:12
tert-Amyl methyl ether (TAME)	ND	2.1	1	02/22/2017 11:12
Benzene	ND	1.6	1	02/22/2017 11:12
Benzyl chloride	ND	2.6	1	02/22/2017 11:12
Bromodichloromethane	ND	3.5	1	02/22/2017 11:12
Bromoform	ND	5.2	1	02/22/2017 11:12
Bromomethane	ND	2.0	1	02/22/2017 11:12
1,3-Butadiene	ND	1.1	1	02/22/2017 11:12
2-Butanone (MEK)	ND	75	1	02/22/2017 11:12
t-Butyl alcohol (TBA)	ND	31	1	02/22/2017 11:12
Carbon Disulfide	ND	1.6	1	02/22/2017 11:12
Carbon Tetrachloride	ND	3.2	1	02/22/2017 11:12
Chlorobenzene	ND	2.4	1	02/22/2017 11:12
Chloroethane	ND	1.3	1	02/22/2017 11:12
Chloroform	ND	2.4	1	02/22/2017 11:12
Chloromethane	ND	1.0	1	02/22/2017 11:12
Cyclohexane	ND	18	1	02/22/2017 11:12
Dibromochloromethane	ND	4.4	1	02/22/2017 11:12
1,2-Dibromo-3-chloropropane	ND	0.12	1	02/22/2017 11:12
1,2-Dibromoethane (EDB)	ND	3.9	1	02/22/2017 11:12
1,2-Dichlorobenzene	ND	3.0	1	02/22/2017 11:12
1,3-Dichlorobenzene	ND	3.0	1	02/22/2017 11:12
1,4-Dichlorobenzene	ND	3.0	1	02/22/2017 11:12
Dichlorodifluoromethane	ND	2.5	1	02/22/2017 11:12
1,1-Dichloroethane	ND	2.0	1	02/22/2017 11:12
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	02/22/2017 11:12
1,1-Dichloroethene	ND	2.0	1	02/22/2017 11:12
cis-1,2-Dichloroethene	ND	2.0	1	02/22/2017 11:12
trans-1,2-Dichloroethene	ND	2.0	1	02/22/2017 11:12
1,2-Dichloropropane	ND	2.4	1	02/22/2017 11:12
cis-1,3-Dichloropropene	ND	2.3	1	02/22/2017 11:12

(Cont.)

Angela Rydelius, Lab Manager



## Analytical Report

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### Volatile Organic Compounds

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12.23	24.38	AK

Analytes	Result	RL	DF	Date Analyzed
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1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	02/22/2017 11:12
Diisopropyl ether (DIPE)	ND	2.1	1	02/22/2017 11:12
1,4-Dioxane	ND	1.8	1	02/22/2017 11:12
Ethanol	ND	96	1	02/22/2017 11:12
Ethyl acetate	ND	1.8	1	02/22/2017 11:12
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	02/22/2017 11:12
Ethylbenzene	ND	2.2	1	02/22/2017 11:12
4-Ethyltoluene	ND	2.5	1	02/22/2017 11:12
Freon 113	ND	3.9	1	02/22/2017 11:12
Heptane	ND	21	1	02/22/2017 11:12
Hexachlorobutadiene	ND	5.4	1	02/22/2017 11:12
Hexane	ND	18	1	02/22/2017 11:12
2-Hexanone	ND	2.1	1	02/22/2017 11:12
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	02/22/2017 11:12
Methyl-t-butyl ether (MTBE)	ND	1.8	1	02/22/2017 11:12
Methylene chloride	ND	8.8	1	02/22/2017 11:12
Methyl methacrylate	ND	2.1	1	02/22/2017 11:12
Naphthalene	ND	5.3	1	02/22/2017 11:12
Propene	ND	88	1	02/22/2017 11:12
Styrene	ND	2.2	1	02/22/2017 11:12
1,1,1,2-Tetrachloroethane	ND	3.5	1	02/22/2017 11:12
1,1,2,2-Tetrachloroethane	ND	3.5	1	02/22/2017 11:12
Tetrachloroethene	<b>99</b>	3.4	1	02/22/2017 11:12
Tetrahydrofuran	<b>5.5</b>	3.0	1	02/22/2017 11:12
Toluene	ND	1.9	1	02/22/2017 11:12
1,2,4-Trichlorobenzene	ND	3.8	1	02/22/2017 11:12
1,1,1-Trichloroethane	ND	2.8	1	02/22/2017 11:12
1,1,2-Trichloroethane	ND	2.8	1	02/22/2017 11:12
Trichloroethene	ND	2.8	1	02/22/2017 11:12
Trichlorofluoromethane	ND	2.8	1	02/22/2017 11:12
1,2,4-Trimethylbenzene	ND	2.5	1	02/22/2017 11:12
1,3,5-Trimethylbenzene	ND	2.5	1	02/22/2017 11:12

(Cont.)

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
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**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
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Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
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Vinyl Chloride	ND	1.3	1	02/22/2017 11:12
Xylenes, Total	ND	6.6	1	02/22/2017 11:12
Surrogates	REC (%)	Limits		
1,2-DCA-d4	98	70-130		02/22/2017 11:12
Toluene-d8	105	70-130		02/22/2017 11:12
4-BFB	98	70-130		02/22/2017 11:12



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### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-4	1702A13-003A	SoilGas	02/20/2017 11:07	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.69	25.38	AK

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	02/22/2017 11:58
Acrolein	ND	5.8	1	02/22/2017 11:58
Acrylonitrile	ND	1.1	1	02/22/2017 11:58
tert-Amyl methyl ether (TAME)	ND	2.1	1	02/22/2017 11:58
Benzene	ND	1.6	1	02/22/2017 11:58
Benzyl chloride	ND	2.6	1	02/22/2017 11:58
Bromodichloromethane	ND	3.5	1	02/22/2017 11:58
Bromoform	ND	5.2	1	02/22/2017 11:58
Bromomethane	ND	2.0	1	02/22/2017 11:58
1,3-Butadiene	ND	1.1	1	02/22/2017 11:58
2-Butanone (MEK)	ND	75	1	02/22/2017 11:58
t-Butyl alcohol (TBA)	ND	31	1	02/22/2017 11:58
Carbon Disulfide	ND	1.6	1	02/22/2017 11:58
Carbon Tetrachloride	ND	3.2	1	02/22/2017 11:58
Chlorobenzene	ND	2.4	1	02/22/2017 11:58
Chloroethane	ND	1.3	1	02/22/2017 11:58
Chloroform	ND	2.4	1	02/22/2017 11:58
Chloromethane	ND	1.0	1	02/22/2017 11:58
Cyclohexane	ND	18	1	02/22/2017 11:58
Dibromochloromethane	ND	4.4	1	02/22/2017 11:58
1,2-Dibromo-3-chloropropane	ND	0.12	1	02/22/2017 11:58
1,2-Dibromoethane (EDB)	ND	3.9	1	02/22/2017 11:58
1,2-Dichlorobenzene	ND	3.0	1	02/22/2017 11:58
1,3-Dichlorobenzene	ND	3.0	1	02/22/2017 11:58
1,4-Dichlorobenzene	ND	3.0	1	02/22/2017 11:58
Dichlorodifluoromethane	ND	2.5	1	02/22/2017 11:58
1,1-Dichloroethane	ND	2.0	1	02/22/2017 11:58
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	02/22/2017 11:58
1,1-Dichloroethene	ND	2.0	1	02/22/2017 11:58
cis-1,2-Dichloroethene	ND	2.0	1	02/22/2017 11:58
trans-1,2-Dichloroethene	ND	2.0	1	02/22/2017 11:58
1,2-Dichloropropane	ND	2.4	1	02/22/2017 11:58
cis-1,3-Dichloropropene	ND	2.3	1	02/22/2017 11:58

(Cont.)

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
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**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

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12.69	25.38	AK

Analytes	Result	RL	DF	Date Analyzed
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1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	02/22/2017 11:58
Diisopropyl ether (DIPE)	ND	2.1	1	02/22/2017 11:58
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Ethylbenzene	ND	2.2	1	02/22/2017 11:58
4-Ethyltoluene	ND	2.5	1	02/22/2017 11:58
Freon 113	ND	3.9	1	02/22/2017 11:58
Heptane	ND	21	1	02/22/2017 11:58
Hexachlorobutadiene	ND	5.4	1	02/22/2017 11:58
Hexane	ND	18	1	02/22/2017 11:58
2-Hexanone	ND	2.1	1	02/22/2017 11:58
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	02/22/2017 11:58
Methyl-t-butyl ether (MTBE)	ND	1.8	1	02/22/2017 11:58
Methylene chloride	ND	8.8	1	02/22/2017 11:58
Methyl methacrylate	ND	2.1	1	02/22/2017 11:58
Naphthalene	ND	5.3	1	02/22/2017 11:58
Propene	ND	88	1	02/22/2017 11:58
Styrene	ND	2.2	1	02/22/2017 11:58
1,1,1,2-Tetrachloroethane	ND	3.5	1	02/22/2017 11:58
1,1,2,2-Tetrachloroethane	ND	3.5	1	02/22/2017 11:58
Tetrachloroethene	<b>420</b>	3.4	1	02/22/2017 11:58
Tetrahydrofuran	ND	3.0	1	02/22/2017 11:58
Toluene	ND	1.9	1	02/22/2017 11:58
1,2,4-Trichlorobenzene	ND	3.8	1	02/22/2017 11:58
1,1,1-Trichloroethane	ND	2.8	1	02/22/2017 11:58
1,1,2-Trichloroethane	ND	2.8	1	02/22/2017 11:58
Trichloroethene	ND	2.8	1	02/22/2017 11:58
Trichlorofluoromethane	ND	2.8	1	02/22/2017 11:58
1,2,4-Trimethylbenzene	ND	2.5	1	02/22/2017 11:58
1,3,5-Trimethylbenzene	ND	2.5	1	02/22/2017 11:58

(Cont.)

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Received:** 2/21/17 13:15  
**Date Prepared:** 2/22/17  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-4	1702A13-003A	SoilGas	02/20/2017 11:07	GC29	134551

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.69	25.38	AK

Analytes	Result	RL	DF	Date Analyzed
Vinyl Acetate	ND	18	1	02/22/2017 11:58
Vinyl Chloride	ND	1.3	1	02/22/2017 11:58
Xylenes, Total	ND	6.6	1	02/22/2017 11:58
Surrogates	REC (%)	Limits		Date Analyzed
1,2-DCA-d4	99	70-130		02/22/2017 11:58
Toluene-d8	105	70-130		02/22/2017 11:58
4-BFB	98	70-130		02/22/2017 11:58

Angela Rydelius, Lab Manager





## Quality Control Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Prepared:** 2/21/17  
**Date Analyzed:** 2/21/17  
**Instrument:** GC29  
**Matrix:** SoilGas  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**BatchID:** 134551  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-134551

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	71.0	30	60	-	118	60-140
Acrolein	ND	74.5	2.9	58.25	-	128	60-140
Acrylonitrile	ND	76.4	0.55	55	-	139	60-140
tert-Amyl methyl ether (TAME)	ND	133	1.0	105	-	127	60-140
Benzene	ND	104	0.80	80	-	130	60-140
Benzyl chloride	ND	167	1.3	132.5	-	126	60-140
Bromodichloromethane	ND	210	1.8	175	-	120	60-140
Bromoform	ND	357	2.6	262.5	-	136	60-140
Bromomethane	ND	117	1.0	97.5	-	120	60-140
1,3-Butadiene	ND	55.5	0.55	55	-	101	60-140
2-Butanone (MEK)	ND	96.6	38	75	-	129	60-140
t-Butyl alcohol (TBA)	ND	96.0	16	77.5	-	124	60-140
Carbon Disulfide	ND	99.1	0.80	80	-	124	60-140
Carbon Tetrachloride	ND	198	1.6	160	-	124	60-140
Chlorobenzene	ND	146	1.2	117.5	-	125	60-140
Chloroethane	ND	79.5	0.65	67.5	-	118	60-140
Chloroform	ND	137	1.2	122.5	-	112	60-140
Chloromethane	ND	56.2	0.50	52.5	-	107	60-140
Cyclohexane	ND	102	9.0	87.5	-	117	60-140
Dibromochloromethane	ND	288	2.2	217.5	-	132	60-140
1,2-Dibromo-3-chloropropane	ND	316	0.060	245	-	129	60-140
1,2-Dibromoethane (EDB)	ND	228	2.0	195	-	117	60-140
1,2-Dichlorobenzene	ND	186	1.5	152.5	-	122	60-140
1,3-Dichlorobenzene	ND	186	1.5	152.5	-	122	60-140
1,4-Dichlorobenzene	ND	185	1.5	152.5	-	121	60-140
Dichlorodifluoromethane	ND	139	1.2	125	-	111	60-140
1,1-Dichloroethane	ND	122	1.0	102.5	-	119	60-140
1,2-Dichloroethane (1,2-DCA)	ND	111	1.0	102.5	-	108	60-140
1,1-Dichloroethene	ND	111	1.0	100	-	111	60-140
cis-1,2-Dichloroethene	ND	120	1.0	100	-	120	60-140
trans-1,2-Dichloroethene	ND	122	1.0	100	-	122	60-140
1,2-Dichloropropane	ND	134	1.2	117.5	-	114	60-140
cis-1,3-Dichloropropene	ND	143	1.2	115	-	124	60-140
trans-1,3-Dichloropropene	ND	144	1.2	115	-	126	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	204	1.8	177.5	-	115	60-140
Diisopropyl ether (DIPE)	ND	135	1.0	105	-	129	60-140
1,4-Dioxane	ND	140	0.90	92.5	-	152, F2	60-140

(Cont.)

QA/QC Officer



## Quality Control Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Prepared:** 2/21/17  
**Date Analyzed:** 2/21/17  
**Instrument:** GC29  
**Matrix:** SoilGas  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**BatchID:** 134551  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-134551

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethanol	ND	59.8	48	47.5	-	126	60-140
Ethyl acetate	ND	114	0.90	92.5	-	124	60-140
Ethyl tert-butyl ether (ETBE)	ND	130	1.0	105	-	123	60-140
Ethylbenzene	ND	135	1.1	110	-	123	60-140
4-Ethyltoluene	ND	157	1.2	125	-	126	60-140
Freon 113	ND	233	2.0	195	-	119	60-140
Heptane	ND	128	10	105	-	122	60-140
Hexachlorobutadiene	ND	337	2.7	270	-	125	60-140
Hexane	ND	111	9.0	90	-	123	60-140
2-Hexanone	ND	132	1.0	105	-	125	60-140
Isopropyl Alcohol	ND	79.0	25	62.5	-	126	60-140
4-Methyl-2-pentanone (MIBK)	ND	136	1.0	105	-	130	60-140
Methyl-t-butyl ether (MTBE)	ND	110	0.90	92.5	-	119	60-140
Methylene chloride	ND	103	4.4	87.5	-	117	60-140
Methyl methacrylate	ND	133	1.0	104	-	128	60-140
Naphthalene	ND	318	2.6	265	-	120	60-140
Propene	ND	ND	44	42.5	-	90	60-140
Styrene	ND	134	1.1	107.5	-	124	60-140
1,1,1,2-Tetrachloroethane	ND	226	1.8	175	-	129	60-140
1,1,2,2-Tetrachloroethane	ND	213	1.8	175	-	122	60-140
Tetrachloroethene	ND	224	1.7	172	-	130	60-140
Tetrahydrofuran	ND	77.1	1.5	75	-	103	60-140
Toluene	ND	115	0.95	95	-	121	60-140
1,2,4-Trichlorobenzene	ND	249	1.9	187.5	-	133	60-140
1,1,1-Trichloroethane	ND	167	1.4	137.5	-	121	60-140
1,1,2-Trichloroethane	ND	164	1.4	137.5	-	119	60-140
Trichloroethene	ND	161	1.4	137.5	-	117	60-140
Trichlorofluoromethane	ND	173	1.4	142.5	-	121	60-140
1,2,4-Trimethylbenzene	ND	158	1.2	125	-	126	60-140
1,3,5-Trimethylbenzene	ND	168	1.2	125	-	134	60-140
Vinyl Acetate	ND	112	9.0	90	-	125	60-140
Vinyl Chloride	ND	63.1	0.65	65	-	97	60-140
Xylenes, Total	ND	412	3.3	330	-	125	60-140

(Cont.)

QA/QC Officer



## Quality Control Report

**Client:** Advanced GeoEnvironmental, Inc.  
**Date Prepared:** 2/21/17  
**Date Analyzed:** 2/21/17  
**Instrument:** GC29  
**Matrix:** SoilGas  
**Project:** Swiss Valley Cleaners

**WorkOrder:** 1702A13  
**BatchID:** 134551  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-134551

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
1,2-DCA-d4	521.9	494		500	104	99	70-130
Toluene-d8	524.4	510		500	105	102	70-130
4-BFB	484	486		500	97	97	70-130

QA/QC Officer



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1702A13

ClientCode: AGES

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Daniel Villanueva  
Advanced GeoEnvironmental, Inc.  
837 Shaw Road  
Stockton, CA 95215  
(209) 467-1006    FAX: (209) 467-1118

Email: dvillanueva@advgeoenv.com  
cc/3rd Party:  
PO:  
ProjectNo: Swiss Valley Cleaners

**Bill to:**

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

**Requested TATs:** 2 days;  
5 days;

**Date Received:** 02/21/2017  
**Date Logged:** 02/21/2017

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
1702A13-001	SS-2	SoilGas	2/20/2017 11:46	<input type="checkbox"/>		A	A	A	A							
1702A13-002	SS-3	SoilGas	2/20/2017 10:29	<input type="checkbox"/>		A	A	A	A							
1702A13-003	SS-4	SoilGas	2/20/2017 11:07	<input type="checkbox"/>		A	A	A	A							
1702A13-004	Un-Used Summa	SoilGas	<Not Provided>	<input type="checkbox"/>	A					A						

**Test Legend:**

1	PRNUSEDSUMMA	2	TO15_Scan-SIM_SOIL(UG/M3)	3	TO15-8260_SOIL(UG/M3)	4	TO15-LC_SOIL(UG/M3)
5	TO15-LC8260_SOIL(UG/M3)	6	UNUSED_SUMMA	7		8	
9		10		11		12	

**Prepared by: Maria Venegas**

The following SampIDs: 001A, 002A, 003A contain testgroup TO15\_SG(UG/M3).

**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.

**Project:** Swiss Valley Cleaners

**Work Order:** 1702A13

**Client Contact:** Daniel Villanueva

**QC Level:** LEVEL 2

**Contact's Email:** dvillanueva@advgeoenv.com

**Comments:**


**Date Logged:** 2/21/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1702A13-001A	SS-2	SoilGas	TO15 for Soil Vapor (Scan-SIM)	1	1L Summa	<input type="checkbox"/>	2/20/2017 11:46	2 days		<input type="checkbox"/>	
1702A13-002A	SS-3	SoilGas	TO15 for Soil Vapor (Scan-SIM)	1	1L Summa	<input type="checkbox"/>	2/20/2017 10:29	2 days		<input type="checkbox"/>	
1702A13-003A	SS-4	SoilGas	TO15 for Soil Vapor (Scan-SIM)	1	1L Summa	<input type="checkbox"/>	2/20/2017 11:07	2 days		<input type="checkbox"/>	
1702A13-004A	Un-Used Summa	SoilGas	Unused Summa	1	1L Summa	<input type="checkbox"/>	<Not Provided>	5 days		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

 <b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701 Telephone: (877) 252-9262 / Fax: (925) 252-9269 <a href="http://www.mccampbell.com">www.mccampbell.com</a> <a href="mailto:main@mccampbell.com">main@mccampbell.com</a>					<b>CHAIN OF CUSTODY RECORD</b>												
					Turn Around Time: 1 Day Rush		2 Day Rush <input checked="" type="checkbox"/>		3 Day Rush		STD <input checked="" type="checkbox"/>		Quote #				
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #									
Delivery Format: GeoTracker EDF				PDF		EDD		Write On (DW)		EQUIS							
Report To: <u>Daniel Villanueva</u> Bill To:					<b>Analysis Requested</b>					Helium Shroud SN#							
Company: <u>Advanced Geo Environmental</u>					Notes: Please specify units if different than default: VOCs is reported in µg/m <sup>3</sup> , fixed is reported in %.  Leak Check Default is IPA Notes: Please specify units if different than default: VOCs is reported in µg/m <sup>3</sup> , fixed is reported in %.  Matrix <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th rowspan="2">Soil/gas</th> <th rowspan="2">Indoor Air</th> <th colspan="2">Canister Pressure / Vacuum</th> </tr> <tr> <th>Initial</th> <th>Final</th> </tr> </table>					Soil/gas	Indoor Air	Canister Pressure / Vacuum		Initial	Final	Leak Check (IPA/Norflorane, 1,1-difluoroethane) µg/m <sup>3</sup>	
Soil/gas	Indoor Air	Canister Pressure / Vacuum															
		Initial	Final														
Email: <u>DVillanueva@ADVGEOENV.COM</u>																	
Email:      Tele:																	
Project Name/#: <u>Swiss Valley Cleaners</u>					VOCs TO-15 (µg/m <sup>3</sup> ) - See Notes 8010 by TO-15 (µg/m <sup>3</sup> ) TPH(g) (µg/m <sup>3</sup> ) LEED: (inc. 4PCH, Formaldehyde, CO, Total VOCs) Fixed Gas (CO <sub>2</sub> , Methane, Ethane, Ethylene, Acetylene, Propane, CO) % Fixed Gas: (O <sub>2</sub> , N <sub>2</sub> ) % APH: Aliphatic and/or Aromatic (circle one) µg/m <sup>3</sup> Helium Leak Check % Leak Check (IPA/Norflorane, 1,1-difluoroethane) µg/m <sup>3</sup>												
Project Location:      PO #																	
Sampler Signature: <u>[Signature]</u>																	
SAMPLE ID Location / Field Point		Sampling Start Date      Time		End Time	Canister SN#	Sample Kit / Manifold #											
<u>SS-2</u>		<u>2/24/17 1133</u>		<u>1146</u>	<u>6406-793</u>	<u>316-727</u>		<input checked="" type="checkbox"/>									
<u>SS-3</u>		<u>" 1015</u>		<u>1029</u>	<u>0899-2521</u>	<u>316-813</u>		<input checked="" type="checkbox"/>									
<u>SS-4</u>		<u>" 1050</u>		<u>1107</u>	<u>6205-746</u>	<u>316T-774</u>		<input checked="" type="checkbox"/>									
**MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.																	

Relinquished By / Company Name		Date	Time	Received By / Company Name		Date	Time	Comments / Instructions
<u>[Signature] / AGE</u>		<u>2-21-17</u>	<u>1315</u>	<u>[Signature]</u>		<u>2/21/17</u>	<u>1315</u>	



### Sample Receipt Checklist

Client Name: **Advanced GeoEnvironmental, Inc.**  
 Project Name: **Swiss Valley Cleaners**

Date and Time Received: **2/21/2017 13:15**  
 Date Logged: **2/21/2017**  
 Received by: **Maria Venegas**  
 Logged by: **Maria Venegas**

WorkOrder No: **1702A13** Matrix: SoilGas  
 Carrier: Client Drop-In

#### 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  NA   
 Sample/Temp Blank temperature 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: <2; 522: <4; 218.7: >8)? Yes  No  NA   
 Samples Received on Ice? Yes  No

#### UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA   
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

Comments: