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By Alameda County Environmental Health 2:07 pm, May 05, 2017

May 5, 2017

Ms. Kit Soo  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**Subject: Submittal Acknowledgement Statement  
Equipment Room Mitigation Measures**  
Former Young's Cleaners  
10700 MacArthur Boulevard  
Oakland, California 94605  
AEI Project No. [Subject]  
Toxics Case No. RO0002580

Dear Ms. Soo:

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the State Water Resources Control Board's Geotracker website.

If you have any questions or need additional information, please do not hesitate to call the undersigned at (323) 336-6808, or Mr. Peter McIntyre at AEI Consultants, (925) 746-6004.

Sincerely,



WAC Enterprises/FHS, LLC  
8245 W. 4<sup>th</sup> Street,  
Los Angeles, CA 90048

cc: Mr. Peter McIntyre, AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597



May 5, 2017

Ms. Kit Soo

Alameda County Department of Environmental Health  
1131 Harbor Parkway  
Alameda, California 94502

**Re: Equipment Room Mitigation Measures**

Former Young's Cleaners  
10700 MacArthur Boulevard, Oakland, California  
AEI Project No. 365948  
Toxics Case No RO0002580

Dear Kit Soo:

On behalf of WAC Enterprises FHS, LLC (WAC), AEI Consultants (AEI) is pleased to submit this document presenting the continued implementation of the *Vapor Intrusion Mitigation Plan Addendum* (VIMP Addendum) dated April 7, 2017, addressing environmental concerns at the former Young's Cleaners at 10700 MacArthur Boulevard in Oakland, California ("the Site"). As outlined in the April 21, 2017 *Interim Vapor Intrusion Mitigation Plan Implementation* report, elevated concentrations of tetrachloroethene (PCE) and trichloroethene (TCE) were observed in the equipment room housing the soil vapor extraction and treatment (SVET) and sub-slab depressurization (SSD) systems. Recent indoor air samples collected following implementation of modified Tier 2 mitigation measures yielded significantly lower PCE and TCE concentrations, indicating that the modified Tier 2 mitigation measures were successful. This report also includes a discussion of the HVAC evaluation performed and the soil management as requested by the Alameda County Department of Environmental Health (DEH) during a conference call on April 27, 2017 between AEI, WAC, and the DEH. The information presented in this report is intended to fulfil the requirements that the DEH requested to be able to provide for the issuance of a certificate of occupancy as discussed during the April 27, 2017 conference call.

**Modified Tier 2 Mitigation Measures**

On April 26, 2017, AEI performed the modified Tier 2 mitigation measures as presented in the April 21, 2017 report, including:

- i. Identify potential sources of PCE and TCE to indoor air in the equipment room using field screening tools,
- ii. Address potential sources of PCE and TCE identified.

## Equipment Room Mitigation Measures

Former Young's Cleaners  
10700 MacArthur Boulevard, Oakland, California  
Toxics Case No RO0002580

Vapor intrusion pathways were identified using a photo-ionization detector (PID) calibrated in the parts per million by volume (ppmv) range for gross volatile organic compound (VOC) screening and a Defiant Frog<sup>®</sup> portable gas chromatogram (GC) PID ("the Frog") for more precise measurement to confirm potential sources. The Frog was calibrated by the vendor prior to delivery for the measurement of PCE, TCE, cis- and trans-1,2-dichloroethelene (1,2-DCE) using a five-point array of standards ranging from 460 parts per billion by volume (ppbv) to 0.94 ppbv.

Vapor intrusion pathway identification was done by sampling around slab penetrations, cracks, vertical terminations, and components of the SVET and SSD systems. AEI identified two VOC sources, including around the ventilation for the job-box housing the blowers for the SVET and SSD systems (0.9 ppmv) and around the water knockout drum for the SVET system (41.5 ppmv). No other VOC sources were identified.

Upon investigation, AEI identified a hole in the knockout tank that was leaking VOC vapors from the system. Although designed to be under negative pressure, when the soil vapor extraction blower was shut down for repairs, it allowed for vapors from the SSD system to backflow through the SVET system and escape from the hole in the knockout tank. AEI performed the following to seal the VOC source:

- i. AEI installed two additional ball valves after each of the blowers to prevent backflow if one of the systems is not operating.
- ii. AEI replaced the damaged knockout drum.
- iii. AEI re-seated connections that potentially were leaking.

### SVET System Operation

As mentioned above the SVET system blower is current not operational. On February 23, 2017, during a routing AEI observed that the blower had shutdown. After performing troubleshooting, it was identified that the blower has failed and requires replacement. Part of the *Remedial Action Plan* to be completed in May/June 2017, a draft of which will initially be discussed with the DEH during an in person meeting, will include an evaluation of the effectiveness of the SVET system and recommendations for continued operation or modification to the remedial approach.

### Confirmation Indoor Air Sampling

During a conference call with the DEH on April 27, 2017, AEI discussed the above completed activities and it was agreed that a total of five additional indoor air samples would be collected to verify effectiveness of the corrective actions. AEI collected the five 24-hour indoor air samples from April 27, 2017 to April 28, 2017. The following samples were collected:



## Equipment Room Mitigation Measures

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Toxics Case No RO0002580

- IA-2 to confirm existing conditions inside the proposed Shoe Palace tenant suite. Shoe Palace merchandise was being stocked during the completion of this sampling event which resulted in IA-2 being moved by Shoe Palace personnel, but it remained within the same general vicinity.
- IA-3 to evaluate storeroom conditions
- IA-8 to evaluate equipment room conditions following the corrective action
- IA-9 and IA-10; two new locations to assess potential vapor migration through walls in two small rooms adjacent to the equipment room

The sample locations are shown on Figure 1. The indoor air samples were collected from within the breathing zone (4 to 6 feet above ground surface) using evacuated six-liter, laboratory-supplied evacuated canisters, equipped with flow regulators to allow for the collection of samples over a 24-hour period. The collected air samples were analyzed for select VOCs including PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC using US EPA Testing Method TO-15 SIM.

Table 1 presents a summary of the current and historical indoor air sample results. Figure 2 presents PCE and TCE indoor air sample results. Laboratory analytical results are included as Appendix A.

The indoor air sample analytical results were compared to Environmental Screening Levels<sup>1</sup> (ESL) under a commercial use scenario for PCE (2.1 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )), TCE (3.0  $\mu\text{g}/\text{m}^3$ ), cis-1,2-DCE (35  $\mu\text{g}/\text{m}^3$ ), and trans-1,2-DCE (350  $\mu\text{g}/\text{m}^3$ ). Additionally, TCE results were compared to the DTSC accelerated (7.0  $\mu\text{g}/\text{m}^3$ ) or urgent (21  $\mu\text{g}/\text{m}^3$ ) response levels<sup>2</sup>, if warranted. The results can be summarized as follows:

- Indoor air sample IA-2, collected from within the proposed Shoe Palace suite, continues to yield PCE at a concentration of 1.3  $\mu\text{g}/\text{m}^3$ , which is below the ESL for the third straight sampling event. TCE was not detected for the third consecutive sampling event. As such, AEI recommends moving forward with occupancy of the Shoe Palace.
- Indoor air sample IA-3, collected from within the storeroom area, yielded PCE and TCE at concentrations of 10  $\mu\text{g}/\text{m}^3$  and 0.61  $\mu\text{g}/\text{m}^3$ , respectively, representing significant decreases in concentrations from the previous sampling event. The PCE concentration observed remains slightly above the commercial ESL and TCE remains below the

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<sup>1</sup> ESLs developed by the California Regional Water Quality Control Board, San Francisco Bay Region, issued February 2016, Rev. 3.

<sup>2</sup> California Department of Toxic Substances Control Human Health Risk Assessment Note No. 5, August 23, 2014.



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Former Young's Cleaners  
10700 MacArthur Boulevard, Oakland, California  
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commercial ESLs for the second straight event. TCE has never exceeded the accelerated response level of  $7.0 \mu\text{g}/\text{m}^3$  in IA-3.

- Indoor air sample IA-8 was collected from within the equipment room and yielded PCE, TCE, cis-1,2-DCE, and trans-1,2-DCE at concentrations of  $15 \mu\text{g}/\text{m}^3$ ,  $0.99 \mu\text{g}/\text{m}^3$ ,  $0.65 \mu\text{g}/\text{m}^3$ , and  $0.084 \mu\text{g}/\text{m}^3$  respectively. The observed concentrations represent a significant decrease from the first sampling event, indicating that corrective measures presented above were successful. PCE dropped from  $310 \mu\text{g}/\text{m}^3$  to  $15 \mu\text{g}/\text{m}^3$ , and TCE dropped from  $27 \mu\text{g}/\text{m}^3$  to  $0.99 \mu\text{g}/\text{m}^3$ , which is below both the ESL ( $3.0 \mu\text{g}/\text{m}^3$ ) and accelerated action level response level ( $7.0 \mu\text{g}/\text{m}^3$ ). Therefore, the corrective measures were successful and the urgent response performed was appropriate and effective.
- Indoor air sample IA-9, collected from the small room adjacent to the equipment room to the east, yielded PCE and TCE at concentrations of  $1.7 \mu\text{g}/\text{m}^3$  and  $0.12 \mu\text{g}/\text{m}^3$ , respectively. Both concentrations are below their respective ESLs and no further action is recommended.
- Indoor air sample IA-10, collected from a small sub-room within the storage room, adjacent to the equipment room to the south, yielded PCE and TCE at concentrations of  $10 \mu\text{g}/\text{m}^3$  and  $0.62 \mu\text{g}/\text{m}^3$ , respectively. The PCE concentration observed was slightly above the commercial exposure ESL of  $2.1 \mu\text{g}/\text{m}^3$ , and TCE is below the commercial ESL of  $3.0 \mu\text{g}/\text{m}^3$ .

Based on these results, the short term TCE exposure has been mitigated and no further corrective measures are necessary. Continued indoor air sampling will be presented in the final vapor intrusion mitigation plan completion report.

### Clarification of the HVAC Evaluation

The evaluation of the heating, ventilation, and air conditioning system (HVAC) was presented in AEI's April 14, 2017 *HVAC Evaluation Results at Rainbow Apparel Suite and Storeroom* report. During the April 27, 2017 call with the DEH, there was a question for clarification on if ambient differential pressure readings were collected from the storeroom, Shoe Palace, and Rainbow Apparel suites during concurrent HVAC operation. As shown in Table 2, readings were collected on April 10, 2017 with concurrent HVAC operation. Pressure readings were collected within the front and back door of the Shoe Palace and Rainbow Apparel and within the back door of the storeroom. Shoe Palace and Rainbow Apparel were reported to contain a pressure differential with ambient of between 0.009 inches of water and 0.037 inches of water. The storeroom was reported to contain a pressure differential with ambient of 0.009 inches of water.



## Stockpile Sampling

On March 15, 2017, AEI collected a soil sample for waste profiling purposes from stockpiled soil. The soil was generated by others during the construction of an electrical trench and sanitary sewer trench for the new Shoe Palace tenant improvements as shown on Figure 1. The soil, less than five-cubic yards of soil, was reportedly placed on and covered with plastic. AEI collected a four-point composite sample from select locations within the stockpile and composited the soil into a sampling jar in the field. The sample was submitted to McCampbell Analytical and analyzed for VOCs using US EPA Testing Method 8260B. VOCs were not detected above the laboratory reporting limit in the soil sample. Laboratory analytical results are included as Appendix A. The soil is currently pending removal from the Site.


## Closing

As documented in this report, the completed corrective measures were successful at mitigating the elevated PCE and TCE concentrations observed during the April 14, 2017 sampling event. Based on these results, coupled with all VIMP implementation activities to date, AEI continues to recommend approval the Shoe Palace tenant space for occupancy. A plan to address the ongoing long term exposure slight PCE exceedances in IA-3 and select surrounding samples will be addressed in the June 2017 RAP.

AEI appreciates working with the DEH on this important project. Please contact the undersigned at (925) 746-6000 if you have any questions regarding the contents of this technical memorandum.

Sincerely,  
**AEI Consultants**

  
Jonathan E. Sanders  
Project Engineer

  
Trent A. Weise, P.  
Vice President



Enclosures:

Table 1 – Summary of Indoor Air Analytical Results

Table 2 – Field Differential Pressure Measurements

Figure 1 – Site Plan

Figure 2 – PCE and TCE in Indoor Air

Appendix A – Laboratory Analytical Reports



## TABLES

**TABLE 1: SUMMARY OF INDOOR AIR SAMPLE ANALYTICAL DATA**  
**Foothill Square**  
**1070 MacArthur Blvd, Oakland, CA**

Sample ID	Date	PCE (µg/m <sup>3</sup> )	TCE (µg/m <sup>3</sup> )	c-1,2-DCE (µg/m <sup>3</sup> )	t-1,2 DCE (µg/m <sup>3</sup> )	VC (µg/m <sup>3</sup> )
<b>Comparison Values</b>						
	ESL	2.1	3.0	35	350	0.16
	DTSC Accelerated Response	---	7.0	---	---	---
	DTSC Urgent Response	---	21	---	---	---
IA-1	8/23/2016	3.4	0.23	<0.40	<0.40	<0.013
	12/13/2016	1.3	0.15	<0.04	<0.04	<0.03
	3/15/2017	0.851	<0.107	<0.0793	<0.0793	<0.0511
IA-2	8/23/2016	4.1	0.21	<0.40	<0.40	<0.013
	12/13/2016	0.31	<0.05	<0.04	0.16	<0.03
	3/15/2017	0.930	<0.107	<0.0793	<0.0793	<0.0511
	4/28/2017	1.3	<0.68	<10	<10	<0.33
IA-3	12/13/2016	7.7	1.7	1.5	0.16	0.05
	3/15/2017	69.2	6.13	1.97	<0.0793	<0.0511
	4/14/2017	27	2.2	0.91	<0.40	<0.013
	4/28/2017	10	0.61	<10	<10	<0.32
IA-4	12/13/2016	0.48	0.08	0.06	0.13	<0.03
	3/15/2017	1.45	0.163	<0.0793	<0.0793	<0.0511
IA-5	12/13/2016	1.1	0.43	<0.099	0.15	<0.026
	3/15/2017	1.39	<0.321	<0.238	<0.238	<0.153
IA-6	12/13/2016	1.2	0.45	0.32	0.56	0.16
	3/15/2017	1.83	0.161	<0.0793	<0.0793	<0.0511
IA-7	3/15/2017	1.26	<0.321	<0.238	<0.238	<0.153
IA-8	4/14/2017	310	27	9.4	0.51	<0.013
	4/28/2017	15	0.99	0.65	0.084	<0.013
IA-9	4/28/2017	1.7	0.12	0.080	<0.40	<0.013
IA-10	4/28/2017	10	0.62	<10	<10	<0.33
AMB-1	8/23/2016	<0.069	<0.027	<0.40	<0.40	<0.013
	12/13/2016	<0.17	<0.13	<0.099	<0.099	<0.026
	3/15/2017	0.250	<0.107	<0.0793	<0.0793	<0.0511

**Notes:**

	Newly reported data
µg/m <sup>3</sup>	micrograms per cubic meter
c-1,2-DCE	cis-1,2-Dichloroethene
PCE	Tetrachloroethene
t-1,2-DCE	trans-1,2-Dichloroethene
TCE	Trichloroethene
VC	vinyl chloride

**Comparison Values**

ESL	Environmental Screening Level for commercial land use; RWQCB February 2016 (Rev.3)
DTSC Accelerated Response	Human Health Risk Assessment Note Number 5; August 23, 2014 based on a 10-hour work day under a commercial scenario.
DTSC Urgent Response	Human Health Risk Assessment Note Number 5; August 23, 2014 based on a 10-hour work day under a commercial scenario.



**TABLE 2: FIELD DIFFERENTIAL PRESSURE MEASUREMENTS**  
**Foothill Square**  
**10700 MacArthur Blvd, Oakland, CA**

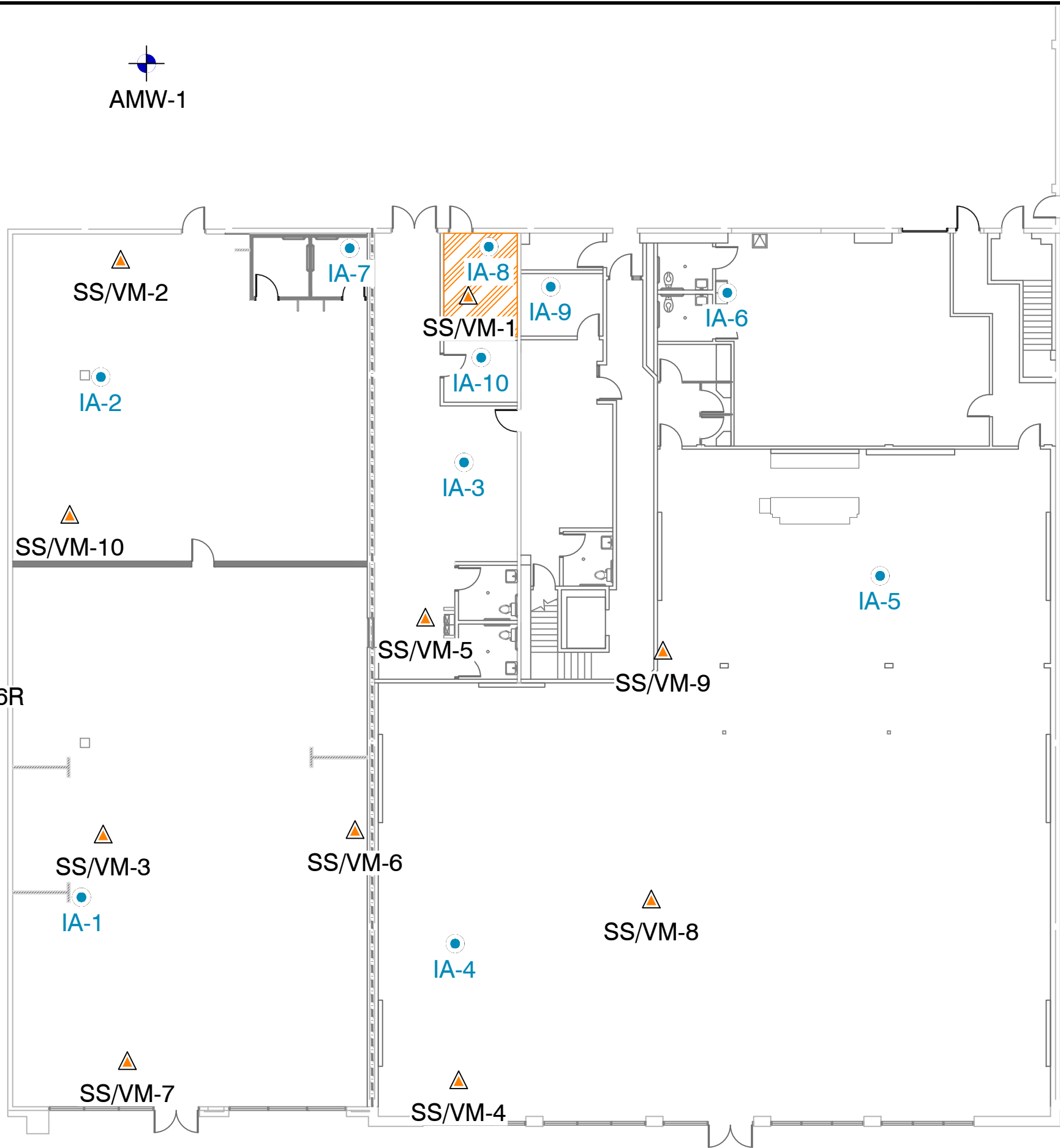
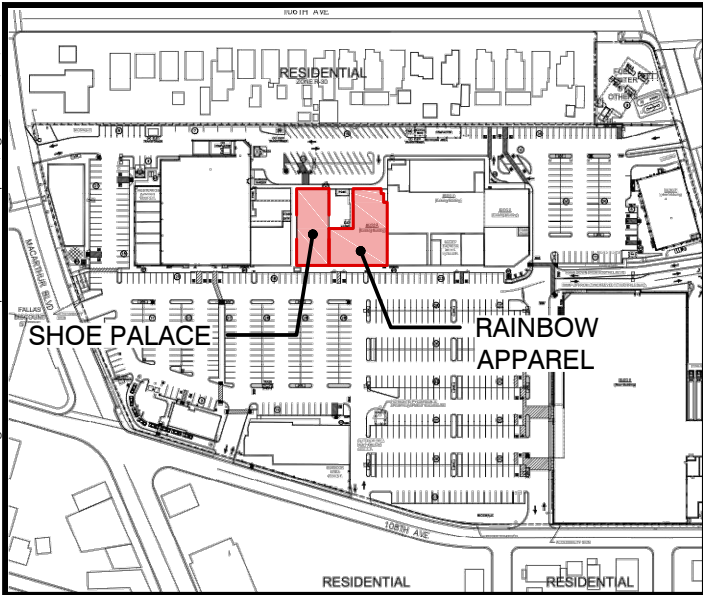
Date	Tenant Space	Location	Gauge Differential	Gauge Pressure (in-WC)
04/10/17	Rainbow Apparel	Front Door	IA-A	0.031
04/10/17	Rainbow Apparel	Back Door	IA-A	0.009
04/10/17	Rainbow Apparel	SS-4	IA-SS	0.096
04/10/17	Rainbow Apparel	SS-5	IA-SS	0.142
04/10/17	Rainbow Apparel	SS-8	IA-SS	0.016
04/10/17	Rainbow Apparel	SS-9	IA-SS	0.015
04/10/17	Storeroom	Back Door	IA-A	0.009
04/10/17	Shoe Palace	Back Door	IA-A	0.028
04/10/17	Shoe Palace	Front Door	IA-A	0.037

Notes:

- in-WC inches of water column
- IA-A Indoor air to ambient air
- IA-SS Indoor air to sub-slab vapor

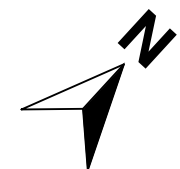
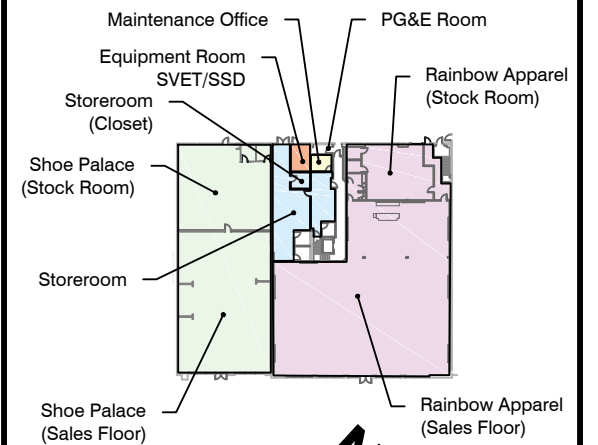
## FIGURES

P:\Companywide Projects\365000 Series\365948 Oakland, CA\SMDeliverables\2017 05 05 - Tier 2 Mitigation Measures Implementation Report\Figures - 05/04/2017



**LEGEND**

- SVET & SDS Equipment Location
- Groundwater Monitoring Well
- Soil Vapor/Sub-slab Vapor Monitoring Point
- Indoor Air Sample Location



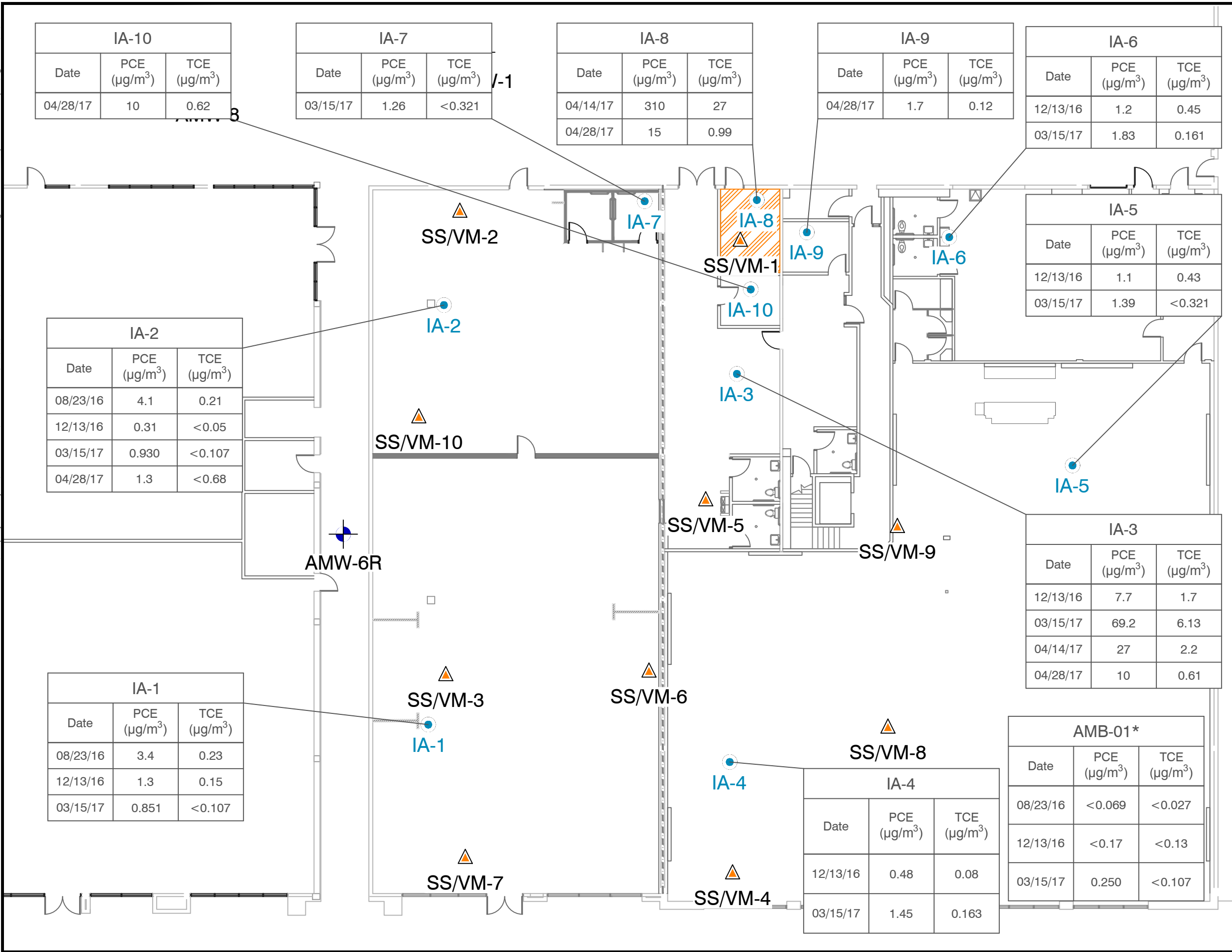
0 16 32 APPROXIMATE SCALE IN FEET

**AEI Consultants**  
San Jose, California

**SITE PLAN**

10700 MacArthur Blvd  
Oakland, California

**FIGURE 1**  
Project No. 365948



**LEGEND**

- SVET & SDS Equipment Location
- Groundwater Monitoring Well
- Soil Vapor/Sub-slab Vapor Monitoring Point
- Indoor Air Sample Location

0 16 32 APPROXIMATE SCALE IN FEET

**AEI Consultants**  
San Jose, California

PCE and TCE in Indoor Air

10700 MacArthur Blvd  
Oakland, California

FIGURE 2  
Project No. 365948

**APPENDIX A**  
**LABORATORY ANALYTICAL REPORTS**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1704D10

**Report Created for:** AEI Consultants

2500 Camino Diablo, Ste.#200  
Walnut Creek, CA 94597

**Project Contact:** Jeremy Smith

**Project P.O.:** 131202

**Project Name:** 365948; Foothill Square

**Project Received:** 04/28/2017

Analytical Report reviewed & approved for release on 05/02/2017 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:** AEI Consultants  
**Project:** 365948; Foothill Square  
**WorkOrder:** 1704D10

### 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
IGN1	Sample is non metallic
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

J result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.



## Case Narrative

**Client:** AEI Consultants  
**Project:** 365948; Foothill Square

**Work Order:** 1704D10  
May 02, 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:** AEI Consultants  
**Date Received:** 4/28/17 18:10  
**Date Prepared:** 5/1/17  
**Project:** 365948; Foothill Square

**WorkOrder:** 1704D10  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Halogenated Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-2	1704D10-001A	Indoor Air	04/28/2017 16:06	GC24	138117

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.19	13.19	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND		1.0	10	25	05/01/2017 17:25
trans-1,2-Dichloroethene	ND		0.70	10	25	05/01/2017 17:25
Tetrachloroethene	1.3	J	0.069	1.7	25	05/01/2017 17:25
Trichloroethene	ND		0.14	0.68	25	05/01/2017 17:25
Vinyl Chloride	ND		0.040	0.33	25	05/01/2017 17:25
<b>Surrogates</b>	<b>REC (%)</b>			<b>Limits</b>		
1,2-DCA-d4	84			70-130		05/01/2017 17:25
Toluene-d8	104			70-130		05/01/2017 17:25
4-BFB	102			70-130		05/01/2017 17:25

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-3	1704D10-002A	Indoor Air	04/28/2017 16:11	GC24	138117

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.54	13.54	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND		1.0	10	25	05/01/2017 18:04
trans-1,2-Dichloroethene	ND		0.70	10	25	05/01/2017 18:04
Tetrachloroethene	10		0.069	1.7	25	05/01/2017 18:04
Trichloroethene	0.61	J	0.14	0.68	25	05/01/2017 18:04
Vinyl Chloride	ND		0.040	0.32	25	05/01/2017 18:04
<b>Surrogates</b>	<b>REC (%)</b>			<b>Limits</b>		
1,2-DCA-d4	83			70-130		05/01/2017 18:04
Toluene-d8	101			70-130		05/01/2017 18:04
4-BFB	100			70-130		05/01/2017 18:04

(Cont.)

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 4/28/17 18:10  
**Date Prepared:** 5/1/17  
**Project:** 365948; Foothill Square

**WorkOrder:** 1704D10  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

## Halogenated Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-8	1704D10-003A	Indoor Air	04/28/2017 15:57	GC24	138117

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.82	12.82	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	0.65		0.040	0.40	1	05/01/2017 23:46
trans-1,2-Dichloroethene	0.084	J	0.028	0.40	1	05/01/2017 23:46
Tetrachloroethene	15		0.0028	0.069	1	05/01/2017 23:46
Trichloroethene	0.99		0.0055	0.027	1	05/01/2017 23:46
Vinyl Chloride	ND		0.0016	0.013	1	05/01/2017 23:46
<b>Surrogates</b>	<b>REC (%)</b>			<b>Limits</b>		
1,2-DCA-d4	76			70-130		05/01/2017 23:46
Toluene-d8	99			70-130		05/01/2017 23:46
4-BFB	99			70-130		05/01/2017 23:46

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-9	1704D10-004A	Indoor Air	04/28/2017 16:08	GC24	138117

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
14.19	14.19	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	0.080	J	0.040	0.40	1	05/01/2017 22:49
trans-1,2-Dichloroethene	ND		0.028	0.40	1	05/01/2017 22:49
Tetrachloroethene	1.7		0.0028	0.069	1	05/01/2017 22:49
Trichloroethene	0.12		0.0055	0.027	1	05/01/2017 22:49
Vinyl Chloride	ND		0.0016	0.013	1	05/01/2017 22:49
<b>Surrogates</b>	<b>REC (%)</b>			<b>Limits</b>		
1,2-DCA-d4	76			70-130		05/01/2017 22:49
Toluene-d8	100			70-130		05/01/2017 22:49
4-BFB	101			70-130		05/01/2017 22:49

(Cont.)

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 4/28/17 18:10  
**Date Prepared:** 5/1/17  
**Project:** 365948; Foothill Square

**WorkOrder:** 1704D10  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>

### Halogenated Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA-10	1704D10-005A	Indoor Air	04/28/2017 16:09	GC24	138117

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.66	13.66	AK

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND		1.0	10	25	05/01/2017 20:03
trans-1,2-Dichloroethene	ND		0.70	10	25	05/01/2017 20:03
Tetrachloroethene	<b>10</b>		0.069	1.7	25	05/01/2017 20:03
Trichloroethene	<b>0.62</b>	J	0.14	0.68	25	05/01/2017 20:03
Vinyl Chloride	ND		0.040	0.33	25	05/01/2017 20:03
Surrogates	REC (%)			Limits		
1,2-DCA-d4	83			70-130		05/01/2017 20:03
Toluene-d8	101			70-130		05/01/2017 20:03
4-BFB	99			70-130		05/01/2017 20:03

 Angela Rydelius, Lab Manager



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 5/1/17  
**Date Analyzed:** 5/1/17  
**Instrument:** GC24  
**Matrix:** Indoor Air  
**Project:** 365948; Foothill Square

**WorkOrder:** 1704D10  
**BatchID:** 138117  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-138117

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Bromodichloromethane	ND	5.48	0.0028	0.0070	5	-	110	60-140
Bromoform	ND	6.10	0.12	1.1	5	-	122	60-140
Bromomethane	ND	5.26	0.058	0.39	5	-	105	60-140
Carbon Tetrachloride	ND	5.82	0.0026	0.0064	5	-	116	60-140
Chlorobenzene	ND	5.50	0.024	0.47	5	-	110	60-140
Chloroethane	0.1641,J	5.60	0.046	0.27	5	-	112	60-140
Chloroform	ND	4.71	0.0034	0.025	5	-	94	60-140
Chloromethane	ND	4.62	0.025	0.21	5	-	92	60-140
Dibromochloromethane	ND	6.35	0.0035	0.87	5	-	127	60-140
1,2-Dibromo-3-chloropropane	ND	5.64	0.0049	0.050	5	-	113	60-140
1,2-Dibromoethane (EDB)	ND	5.74	0.0023	0.0078	5	-	115	60-140
1,2-Dichlorobenzene	ND	5.80	0.079	0.61	5	-	116	60-140
1,3-Dichlorobenzene	ND	5.75	0.061	0.61	5	-	115	60-140
1,4-Dichlorobenzene	ND	5.67	0.0031	0.030	5	-	113	60-140
Dichlorodifluoromethane	ND	4.37	0.050	0.50	5	-	87	60-140
1,1-Dichloroethane	ND	5.45	0.14	0.41	5	-	109	60-140
1,2-Dichloroethane (1,2-DCA)	ND	3.75	0.0012	0.0041	5	-	75	60-140
1,1-Dichloroethene	ND	4.82	0.076	0.10	5	-	96	60-140
cis-1,2-Dichloroethene	ND	5.05	0.040	0.40	5	-	101	60-140
trans-1,2-Dichloroethene	ND	5.01	0.028	0.40	5	-	100	60-140
1,2-Dichloropropane	ND	5.44	0.0020	0.0047	5	-	109	60-140
cis-1,3-Dichloropropene	ND	5.88	0.0014	0.12	5	-	118	60-140
trans-1,3-Dichloropropene	ND	5.41	0.092	0.12	5	-	108	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	4.42	0.071	0.71	5	-	88	60-140
Freon 113	ND	4.80	0.062	0.78	5	-	96	60-140
Hexachlorobutadiene	ND	5.85	0.076	1.1	5	-	117	60-140
Methylene chloride	ND	4.73	0.063	0.88	5	-	95	60-140
1,1,1,2-Tetrachloroethane	ND	6.05	0.0021	0.0070	5	-	121	60-140
1,1,1,2,2-Tetrachloroethane	ND	6.02	0.0063	0.0070	5	-	121	60-140
Tetrachloroethene	ND	5.42	0.0028	0.069	5	-	108	60-140
1,2,4-Trichlorobenzene	ND	6.54	0.090	0.75	5	-	131	60-140
1,1,1-Trichloroethane	ND	5.08	0.099	0.55	5	-	102	60-140
1,1,2-Trichloroethane	ND	5.56	0.0030	0.0055	5	-	111	60-140
Trichloroethene	ND	5.28	0.0055	0.027	5	-	106	60-140
Trichlorofluoromethane	ND	5.00	0.068	0.57	5	-	100	60-140
Vinyl Chloride	ND	4.97	0.0016	0.013	5	-	99	60-140

(Cont.)

QA/QC Officer



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 5/1/17  
**Date Analyzed:** 5/1/17  
**Instrument:** GC24  
**Matrix:** Indoor Air  
**Project:** 365948; Foothill Square

**WorkOrder:** 1704D10  
**BatchID:** 138117  
**Extraction Method:** TO15  
**Analytical Method:** TO15  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-138117

### QC Summary Report for TO15

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>								
1,2-DCA-d4	84.97	74.5			100	85	75	0-140
Toluene-d8	99.4	100			100	99	100	60-140
4-BFB	97.72	99.2			100	98	99	60-140

QA/QC Officer



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1704D10

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Jeremy Smith  
 AEI Consultants  
 2500 Camino Diablo, Ste.#200  
 Walnut Creek, CA 94597  
 (925) 283-6000    FAX: (925) 944-2895

Email: jasmith@aeiconsultants.com  
 cc/3rd Party:  
 PO: 131202  
 ProjectNo: 365948; Foothill Square

**Bill to:**  
 Accounts Payable  
 AEI Consultants  
 2500 Camino Diablo, Ste. #200  
 Walnut Creek, CA 94597  
 AccountsPayable@AEIConsultants.com

**Requested TAT: 1 day;**  
  
**Date Received: 04/28/2017**  
**Date Logged: 04/28/2017**

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	
1704D10-001	IA-2	Indoor Air	4/28/2017 16:06	<input type="checkbox"/>	A	A											
1704D10-002	IA-3	Indoor Air	4/28/2017 16:11	<input type="checkbox"/>		A											
1704D10-003	IA-8	Indoor Air	4/28/2017 15:57	<input type="checkbox"/>		A											
1704D10-004	IA-9	Indoor Air	4/28/2017 16:08	<input type="checkbox"/>		A											
1704D10-005	IA-10	Indoor Air	4/28/2017 16:09	<input type="checkbox"/>		A											

**Test Legend:**

1	PREFD REPORT	2	D15-8010_SCAN-SIM_Indoor(ug/m3) (	3		4	
5		6		7		8	
9		10		11		12	

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:** AEI CONSULTANTS

**Project:** 365948; Foothill Square

**Work Order:** 1704D10

**Client Contact:** Jeremy Smith

**QC Level:** LEVEL 2

**Contact's Email:** jasmith@aeiconsultants.com

**Comments:**

**Date Logged:** 4/28/2017

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
1704D10-001A	IA-2	Indoor Air	TO15 (HVOCs, Scan SIM) (µg/m³) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	6L Summa	<input type="checkbox"/>	4/28/2017 16:06	1 day		<input type="checkbox"/>	
1704D10-002A	IA-3	Indoor Air	TO15 (HVOCs, Scan SIM) (µg/m³) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	6L Summa	<input type="checkbox"/>	4/28/2017 16:11	1 day		<input type="checkbox"/>	
1704D10-003A	IA-8	Indoor Air	TO15 (HVOCs, Scan SIM) (µg/m³) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	6L Summa	<input type="checkbox"/>	4/28/2017 15:57	1 day		<input type="checkbox"/>	
1704D10-004A	IA-9	Indoor Air	TO15 (HVOCs, Scan SIM) (µg/m³) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	6L Summa	<input type="checkbox"/>	4/28/2017 16:08	1 day		<input type="checkbox"/>	
1704D10-005A	IA-10	Indoor Air	TO15 (HVOCs, Scan SIM) (µg/m³) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	6L Summa	<input type="checkbox"/>	4/28/2017 16:09	1 day		<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.



# McC Campbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701  
 www.mcccampbell.com / main@mcccampbell.com  
 Telephone: (877) 252-9262 / Fax: (925) 252-9269

1704D10

## CHAIN OF CUSTODY RECORD

**TURN AROUND TIME:** RUSH  1 DAY  2 DAY  3 DAY  5 DAY

GeoTracker EDF  PDF  EDD  EQuIS  10 DAY

# RUSH

UST CLEAN UP FUND  ; Claim #

**Report To:** AEI / Jeremy Smith **PO No.:** 131202  
**Company:** AEI Consultants  
 2500 Camino Diablo, Walnut Creek, CA  
 E-Mail: [jasmith@aeiconsultants.com](mailto:jasmith@aeiconsultants.com)  
 Tele: ( 925 ) 746-6000 Fax: ( 925 ) 746-6099  
**Project #:** 365948 **Project Name:** Foothill Square  
**Project Location:** 10700 MacArthur Blvd., Oakland, CA  
**Sampler Signature:** *[Signature]*

### Analysis Requested

### Helium Shroud SN#

**Other:**  
 Notes: Leak check default is IPA.  
 Only report PCE, TCE, cis/trans 1,2-DCE, VC

Field Sample ID (Location)	Collection		Canister SN#	Sampler Kit SN#	HVOCs TO-15 (ug/m3) - See Notes	8010 by TO-15 (ug/m3)	TPH(g) (ug/m3)	LEED (inc. 4PCH, Formaldehyde, CO, Total VOCs)	Fixed Gas: CO2, Methane, Ethane, Ethylene, Acetylene, CO (please circle or indicate in notes) uL/L	Fixed Gas: O2, N2 (please circle) uL/L	Fixed Gas: Propane uL/L	Helium Leak Check (%)	Leak Check (IPA, Norflorane, 1,1-difluorethane) ug/m3	APH: Aliphatic and/or Aromatic (please circle) ug/m3	Other:	Matrix			Canister Pressure/ Vacuum		
	Date	Time														Soilgas	Indoor	Air	Initial	Final	
IA-2	4/28/11	1606	624	1301	X												X		-30+	-4.5	
IA-3		1611	891	916	X													X		-30+	-4.0
IA-8		1557	6622	544	X													X		-30+	-4.5
IA-9		1608	802	925	X													X		-29.5	-2.0
IA-10		1609	559	538	X													X		-29.5	-5.5

**Relinquished By:** *[Signature]* **Date:** 4/28 **Time:** 1730 **Received By:** *[Signature]* 1810  
**Relinquished By:** **Date:** **Time:** **Received By:**  
**Relinquished By:** **Date:** **Time:** **Received By:**

Temp (°C): \_\_\_\_\_ Work Order #: \_\_\_\_\_  
 Condition: \_\_\_\_\_  
 Custody Seals Intact?: Yes \_\_\_ No \_\_\_ None \_\_\_  
 Shipped Via: \_\_\_\_\_





### Sample Receipt Checklist

Client Name: **AEI Consultants**  
 Project Name: **365948; Foothill Square**  
 WorkOrder No: **1704D10** Matrix: Indoor Air  
 Carrier: Client Drop-In

Date and Time Received: **4/28/2017 18:10**  
 Date Logged: **4/28/2017**  
 Received by: **Maria Venegas**  
 Logged by: **Jena Alfaro**

**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:



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1703776

**Report Created for:** AEI Consultants

2500 Camino Diablo, Ste.#200  
Walnut Creek, CA 94597

**Project Contact:** Jonathan Sanders

**Project P.O.:** 127885

**Project Name:** 365948; 10700 Macarthur Boulevard, Oakland

**Project Received:** 03/15/2017

Analytical Report reviewed & approved for release on 03/20/2017 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:** AEI Consultants  
**Project:** 365948; 10700 Macarthur Boulevard, Oakland  
**WorkOrder:** 1703776

### 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 Report

**Client:** AEI Consultants

**WorkOrder:** 1703776

**Date Received:** 3/15/17 16:45

**Extraction Method:** SW5030B

**Date Prepared:** 3/15/17

**Analytical Method:** SW8260B

**Project:** 365948; 10700 Macarthur Boulevard, Oakland

**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Stockpile Sample	1703776-001A	Soil	03/15/2017 09:15	GC10	135581

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	03/20/2017 10:39
tert-Amyl methyl ether (TAME)	ND	0.0050	1	03/20/2017 10:39
Benzene	ND	0.0050	1	03/20/2017 10:39
Bromobenzene	ND	0.0050	1	03/20/2017 10:39
Bromochloromethane	ND	0.0050	1	03/20/2017 10:39
Bromodichloromethane	ND	0.0050	1	03/20/2017 10:39
Bromoform	ND	0.0050	1	03/20/2017 10:39
Bromomethane	ND	0.0050	1	03/20/2017 10:39
2-Butanone (MEK)	ND	0.020	1	03/20/2017 10:39
t-Butyl alcohol (TBA)	ND	0.050	1	03/20/2017 10:39
n-Butyl benzene	ND	0.0050	1	03/20/2017 10:39
sec-Butyl benzene	ND	0.0050	1	03/20/2017 10:39
tert-Butyl benzene	ND	0.0050	1	03/20/2017 10:39
Carbon Disulfide	ND	0.0050	1	03/20/2017 10:39
Carbon Tetrachloride	ND	0.0050	1	03/20/2017 10:39
Chlorobenzene	ND	0.0050	1	03/20/2017 10:39
Chloroethane	ND	0.0050	1	03/20/2017 10:39
Chloroform	ND	0.0050	1	03/20/2017 10:39
Chloromethane	ND	0.0050	1	03/20/2017 10:39
2-Chlorotoluene	ND	0.0050	1	03/20/2017 10:39
4-Chlorotoluene	ND	0.0050	1	03/20/2017 10:39
Dibromochloromethane	ND	0.0050	1	03/20/2017 10:39
1,2-Dibromo-3-chloropropane	ND	0.0040	1	03/20/2017 10:39
1,2-Dibromoethane (EDB)	ND	0.0040	1	03/20/2017 10:39
Dibromomethane	ND	0.0050	1	03/20/2017 10:39
1,2-Dichlorobenzene	ND	0.0050	1	03/20/2017 10:39
1,3-Dichlorobenzene	ND	0.0050	1	03/20/2017 10:39
1,4-Dichlorobenzene	ND	0.0050	1	03/20/2017 10:39
Dichlorodifluoromethane	ND	0.0050	1	03/20/2017 10:39
1,1-Dichloroethane	ND	0.0050	1	03/20/2017 10:39
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	03/20/2017 10:39
1,1-Dichloroethene	ND	0.0050	1	03/20/2017 10:39
cis-1,2-Dichloroethene	ND	0.0050	1	03/20/2017 10:39
trans-1,2-Dichloroethene	ND	0.0050	1	03/20/2017 10:39
1,2-Dichloropropane	ND	0.0050	1	03/20/2017 10:39
1,3-Dichloropropane	ND	0.0050	1	03/20/2017 10:39
2,2-Dichloropropane	ND	0.0050	1	03/20/2017 10:39

(Cont.)



## Analytical Report

**Client:** AEI Consultants

**WorkOrder:** 1703776

**Date Received:** 3/15/17 16:45

**Extraction Method:** SW5030B

**Date Prepared:** 3/15/17

**Analytical Method:** SW8260B

**Project:** 365948; 10700 Macarthur Boulevard, Oakland

**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Stockpile Sample	1703776-001A	Soil	03/15/2017 09:15	GC10	135581

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	03/20/2017 10:39
cis-1,3-Dichloropropene	ND	0.0050	1	03/20/2017 10:39
trans-1,3-Dichloropropene	ND	0.0050	1	03/20/2017 10:39
Diisopropyl ether (DIPE)	ND	0.0050	1	03/20/2017 10:39
Ethylbenzene	ND	0.0050	1	03/20/2017 10:39
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	03/20/2017 10:39
Freon 113	ND	0.0050	1	03/20/2017 10:39
Hexachlorobutadiene	ND	0.0050	1	03/20/2017 10:39
Hexachloroethane	ND	0.0050	1	03/20/2017 10:39
2-Hexanone	ND	0.0050	1	03/20/2017 10:39
Isopropylbenzene	ND	0.0050	1	03/20/2017 10:39
4-Isopropyl toluene	ND	0.0050	1	03/20/2017 10:39
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	03/20/2017 10:39
Methylene chloride	ND	0.0050	1	03/20/2017 10:39
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	03/20/2017 10:39
Naphthalene	ND	0.0050	1	03/20/2017 10:39
n-Propyl benzene	ND	0.0050	1	03/20/2017 10:39
Styrene	ND	0.0050	1	03/20/2017 10:39
1,1,1,2-Tetrachloroethane	ND	0.0050	1	03/20/2017 10:39
1,1,2,2-Tetrachloroethane	ND	0.0050	1	03/20/2017 10:39
Tetrachloroethene	ND	0.0050	1	03/20/2017 10:39
Toluene	ND	0.0050	1	03/20/2017 10:39
1,2,3-Trichlorobenzene	ND	0.0050	1	03/20/2017 10:39
1,2,4-Trichlorobenzene	ND	0.0050	1	03/20/2017 10:39
1,1,1-Trichloroethane	ND	0.0050	1	03/20/2017 10:39
1,1,2-Trichloroethane	ND	0.0050	1	03/20/2017 10:39
Trichloroethene	ND	0.0050	1	03/20/2017 10:39
Trichlorofluoromethane	ND	0.0050	1	03/20/2017 10:39
1,2,3-Trichloropropane	ND	0.0050	1	03/20/2017 10:39
1,2,4-Trimethylbenzene	ND	0.0050	1	03/20/2017 10:39
1,3,5-Trimethylbenzene	ND	0.0050	1	03/20/2017 10:39
Vinyl Chloride	ND	0.0050	1	03/20/2017 10:39
Xylenes, Total	ND	0.0050	1	03/20/2017 10:39

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** AEI Consultants

**WorkOrder:** 1703776

**Date Received:** 3/15/17 16:45

**Extraction Method:** SW5030B

**Date Prepared:** 3/15/17

**Analytical Method:** SW8260B

**Project:** 365948; 10700 Macarthur Boulevard, Oakland

**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Stockpile Sample	1703776-001A	Soil	03/15/2017 09:15	GC10	135581

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	94	70-130		03/20/2017 10:39
Toluene-d8	106	70-130		03/20/2017 10:39
4-BFB	93	70-130		03/20/2017 10:39
Benzene-d6	96	60-140		03/20/2017 10:39
Ethylbenzene-d10	111	60-140		03/20/2017 10:39
1,2-DCB-d4	79	60-140		03/20/2017 10:39

**Analyst(s):** KF



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 3/14/17  
**Date Analyzed:** 3/15/17 - 3/16/17  
**Instrument:** GC18  
**Matrix:** Soil  
**Project:** 365948; 10700 Macarthur Boulevard, Oakland


**WorkOrder:** 1703776  
**BatchID:** 135581  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-135581  
 1703713-009AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0442	0.0050	0.050	-	88	53-116
Benzene	ND	0.0532	0.0050	0.050	-	106	63-137
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.179	0.050	0.20	-	89	41-135
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0528	0.0050	0.050	-	106	77-121
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0482	0.0040	0.050	-	96	67-119
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0501	0.0040	0.050	-	100	58-135
1,1-Dichloroethene	ND	0.0515	0.0050	0.050	-	103	42-145
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-

(Cont.)

NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

<b>Client:</b>	AEI Consultants	<b>WorkOrder:</b>	1703776
<b>Date Prepared:</b>	3/14/17	<b>BatchID:</b>	135581
<b>Date Analyzed:</b>	3/15/17 - 3/16/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC18	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	365948; 10700 Macarthur Boulevard, Oakland	<b>Sample ID:</b>	MB/LCS-135581 1703713-009AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
Diisopropyl ether (DIPE)	ND	0.0511	0.0050	0.050	-	102	52-129
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0498	0.0050	0.050	-	100	53-125
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0479	0.0050	0.050	-	96	58-122
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0548	0.0050	0.050	-	110	76-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0616	0.0050	0.050	-	123	72-132
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-





## Quality Control Report

<b>Client:</b>	AEI Consultants	<b>WorkOrder:</b>	1703776
<b>Date Prepared:</b>	3/14/17	<b>BatchID:</b>	135581
<b>Date Analyzed:</b>	3/15/17 - 3/16/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC18	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	365948; 10700 Macarthur Boulevard, Oakland	<b>Sample ID:</b>	MB/LCS-135581 1703713-009AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	0.126	0.128		0.12	101	102	70-130
Toluene-d8	0.1364	0.136		0.12	109	109	70-130
4-BFB	0.0128	0.0129		0.012	102	103	70-130
Benzene-d6	0.09837	0.0970		0.10	98	97	60-140
Ethylbenzene-d10	0.1129	0.111		0.10	113	111	60-140
1,2-DCB-d4	0.08215	0.0867		0.10	82	87	60-140

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0410	0.0426	0.050	ND	82	85	53-116	3.65	20
Benzene	0.0486	0.0500	0.050	ND	97	100	63-137	2.89	20
t-Butyl alcohol (TBA)	0.153	0.158	0.20	ND	77	79	41-135	2.87	20
Chlorobenzene	0.0487	0.0505	0.050	ND	97	101	77-121	3.62	20
1,2-Dibromoethane (EDB)	0.0444	0.0466	0.050	ND	89	93	67-119	4.85	20
1,2-Dichloroethane (1,2-DCA)	0.0467	0.0481	0.050	ND	93	96	58-135	2.95	20
1,1-Dichloroethene	0.0450	0.0467	0.050	ND	90	93	42-145	3.72	20
Diisopropyl ether (DIPE)	0.0468	0.0482	0.050	ND	94	96	52-129	3.04	20
Ethyl tert-butyl ether (ETBE)	0.0455	0.0472	0.050	ND	91	94	53-125	3.61	20
Methyl-t-butyl ether (MTBE)	0.0439	0.0458	0.050	ND	88	92	58-122	4.37	20
Toluene	0.0489	0.0510	0.050	ND	98	102	76-130	4.21	20
Trichloroethene	0.0497	0.0512	0.050	ND	99	102	72-132	3.09	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	0.129	0.129	0.12		103	103	70-130	0	20
Toluene-d8	0.132	0.134	0.12		106	107	70-130	1.20	20
4-BFB	0.0132	0.0130	0.012		106	104	70-130	1.68	20
Benzene-d6	0.0895	0.0906	0.10		89	91	60-140	1.31	20
Ethylbenzene-d10	0.101	0.103	0.10		101	103	60-140	1.74	20
1,2-DCB-d4	0.0820	0.0849	0.10		82	85	60-140	3.46	20



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1703776

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQulS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**

Jonathan Sanders  
AEI Consultants  
2500 Camino Diablo, Ste.#200  
Walnut Creek, CA 94597  
(925) 478-9698    FAX: (925) 944-2895

Email: jsanders@aeiconsultants.com  
cc/3rd Party: jasmith@aeiconsultants.com;  
PO: 127885  
ProjectNo: 365948; 10700 Macarthur Boulevard,  
Oakland

**Bill to:**

Accounts Payable  
AEI Consultants  
2500 Camino Diablo, Ste. #200  
Walnut Creek, CA 94597  
AccountsPayable@AEIConsultants.com

**Requested TAT: 3 days;**

**Date Received: 03/15/2017**

**Date Logged: 03/15/2017**

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	
1703776-001	Stockpile Sample	Soil	3/15/2017 09:15	<input type="checkbox"/>	A												

**Test Legend:**

1	8260B_S	2		3		4	
5		6		7		8	
9		10		11		12	

**Prepared by: Jena Alfaro**

**Comments:**    Changed to rush on 03/20/17 @ 10:15am per Jeremy's email

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:** AEI CONSULTANTS

**Project:** 365948; 10700 Macarthur Boulevard, Oakland

**Work Order:** 1703776

**Client Contact:** Jonathan Sanders

**QC Level:** LEVEL 2

**Contact's Email:** jsanders@aeiconsultants.com

**Comments:** Changed to rush on 03/20/17 @ 10:15am per Jeremy's email

**Date Logged:** 3/15/2017

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
1703776-001A	Stockpile Sample	Soil	SW8260B (VOCs)	1	16OZ GJ	<input type="checkbox"/>	3/15/2017 9:15	3 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.

5  **McCAMPBELL ANALYTICAL, INC.**  
 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701  
 Telephone: (877) 252-9262 / Fax: (925) 252-9269  
[www.mccampbell.com](http://www.mccampbell.com) [main@mccampbell.com](mailto:main@mccampbell.com)

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	<input checked="" type="checkbox"/> EDD	Write On (DW)		EQUIS	

Report To: Johnathan Sanders and Jeremy Smith Bill To: AEI Consultants  
 Company: AEI Consultants  
 Email: jsanders@aeiconsultants.com  
 Alt Email: jasmith@aeiconsultants.com Tele: (925) 746-6050  
 Project Name/#: 365948  
 Project Location: 10700 Macarthur Boulevard, Oakland PO #127885  
 Sampler Signature: *Miller B. Jr.*

**Analysis Requested**

SAMPLE ID Location / Field Point	Sampling		#Containers	Matrix	Preservative	Analysis Requested																		
	Date	Time				VOCs by 8268																		
Stockpile sample	3/15/17	0915	1	Soil	ICE	X																		

**RUSH**

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.

\* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
<i>Miller B. Jr.</i>	3/15/17	1645	<i>[Signature]</i>	3/15/17	1645

Comments / Instructions  
*Did to rush per email 3/16/17 JS*

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other  
 Preservative Code: 1=4°C 2=HCl 3=H<sub>2</sub>SO<sub>4</sub> 4=HNO<sub>3</sub> 5=NaOH 6=ZnOAc/NaOH 7=None Temp \_\_\_\_\_ °C Initials \_\_\_\_\_



### Sample Receipt Checklist

Client Name: **AEI Consultants**  
 Project Name: **365948; 10700 Macarthur Boulevard, Oakland**  
 WorkOrder No: **1703776** Matrix: Soil  
 Carrier: Client Drop-In

Date and Time Received: **3/15/2017 16:45**  
 Date Logged: **3/15/2017**  
 Received by: **Jena Alfaro**  
 Logged by: **Jena Alfaro**

**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: