By Alameda County Environmental Health 9:55 am, Nov 17, 2016

#### PERJURY STATEMENT

Subject: 1395 MacArthur Boulevard, San Leandro, California

Indoor Air & Sub-Slab Monitoring Report

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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10 November 2016 AGE-Project No. 12-2461

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#### 1.0. INTRODUCTION

Advanced GeoEnvironmental, Inc. has prepared this, *Indoor Air and Sub-Slab Monitoring Report*, for the above-referenced site. The scope of work included the sampling of indoor air in the subject (1395 MacArthur Boulevard) and two adjacent suites (1377 and 1383 MacArthur Boulevard) and the sampling of three sub-slab vapor wells (SS-2 through SS-4) at the subject site; 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

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. Additionally, the field work was performed in accordance with procedures outlined in the AGE-prepared, *Indoor Air Quality Sampling Work Plan*, dated 04 February 2014.

#### 2.1.1. Pre-Field Work Preparations

On 13 October 2016, prior to the start of indoor air sample collection, all suites sampled (1377 [Estudillo Plaza Optometry] 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

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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 October 2016 indoor air sampling event, passive integrated air samples were collected from inside the suites of 1377, 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 an 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 were measured at 28 to 30 in/Hg prior to air sample collection.

Upon can retrieval final vacuum measurements were observed between 5 and 8.5 in/Hg.

The air samples were transported under chain-of-custody procedures to Eurofins Air Toxics (EAT) located in Folsom, California. The indoor air samples were analyzed for VOCs in accordance with EPA Method TO-15.

#### 2.2. SUB-SLAB VAPOR WELL SAMPLING

On 13 October 2016 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 vaportight 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.

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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 EAT. 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 October 2016 investigations.

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

Three indoor air samples (IA-1877 MacArthur, IA-1383 MacArthur and IA-1395 MacArthur) were collected at the site during the 13 October 2016 sampling event. All samples were analyzed for VOCs in accordance with EPA method TO-15. Results are summarized below.

#### IA-1377 MacArthur:

- Ethanol was detected at a concentration of 290 micrograms per cubic meter (μg/m³);
- Acetone was detected at a concentration of 310 µg/m³;
- 2-propanol (IPA) was detected at a concentration of 1,000 μg/m<sup>3</sup>;
- Freon 12 was detected at a concentration of 1.9 μg/m<sup>3</sup>;
- Chloromethane was detected at a concentration of 1.0 μg/m<sup>3</sup>;
- Toluene was detected at a concentration of 2.1 μg/m<sup>3</sup>;
- Tetrachloroethene (PCE) was detected at a concentration of 5.3 μg/m<sup>3</sup>;
- Ethylbenzene was detected at a concentration of 0.88 μg/m³;
- m,p-xylene was detected at a concentration of 2.9 μg/m<sup>3</sup>;
- o-xylene was detected at a concentration of 0.90 μg/m<sup>3</sup>;

#### IA-1383 MacArthur:

- Ethanol was detected at a concentration of 200 μg/m<sup>3</sup>;
- Acetone was detected at a concentration of 6,300 μg/m<sup>3</sup>;
- IPA was detected at a concentration of 1,900 μg/m<sup>3</sup>;
- Freon 12 was detected at a concentration of 2.1 μg/m<sup>3</sup>;
- Toluene was detected at a concentration of 14 μg/m<sup>3</sup>;
- PCE was detected at a concentration of 7.2 μg/m<sup>3</sup>;

#### IA-1395 MacArthur:

- Freon 11 was detected at a concentration of 0.96µg/m³;
- Ethanol was detected at a concentration of 33 μg/m<sup>3</sup>;
- Acetone was detected at a concentration of 340 μg/m³;
- IPA was detected at a concentration of 260 μg/m<sup>3</sup>;
- 2-Butanone (MEK) was detected at a concentration of 5.6 μg/m<sup>3</sup>;
- Tetrahydrofuran was detected at a concentration of 19 μg/m³;
- Heptane was detected at a concentration of 0.98 μg/m<sup>3</sup>;
- Freon 12 was detected at a concentration of 1.9 μg/m³;
- Chloromethane was detected at a concentration of 0.87 μg/m³;

- Carbon Tetrachloride was detected at a concentration of 0.35 μg/m<sup>3</sup>;
- Benzene was detected at a concentration of 0.42 μg/m<sup>3</sup>;
- Toluene was detected at a concentration of 3.1 µg/m³;
- PCE was detected at a concentration of 40 μg/m<sup>3</sup>;
- Ethylbenzene was detected at a concentration of 0.24 µg/m<sup>3</sup>;
- m,p-xylene was detected at a concentration of 0.77 μg/m³;
- o-xylene was detected at a concentration of 0.28 μg/m<sup>3</sup>;

A summary of analytical results from samples collected during the October 2016 sampling event are included in Table 1. The laboratory report (EAT work order number 1610390), 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 9327719330.

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

A total of three (3) sub-slab vapor samples were collected at the site in October 2016 and analyzed for VOCs and IPA. The following is a summary of the results:

- PCE was detected in all three sub-slab vapor samples at a maximum concentration of 20,000 μg/m³ (SS-3); and
- Tracer gas isopropyl alcohol was detected in one of the three samples (SS-2) at a concentration of 79 μg/m³, which is slightly over the detection limit of 56 μg/m³.

No other constituents of concern were detected in the sub-slab samples collected during the October 2016 monitoring event. A summary of the analytical results from the sampling event are included in Table 2. The laboratory report (EAT work order number 1610316), 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 9327719330.

#### 4.0. 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 the March 2015, December 2015 and October 2016 sampling events, significant attenuation appears to be taking place from five feet bsg to just beneath the concrete slab and into the indoor air. Based on sub-slab vapor samples and indoor air samples collected during this round of investigation, a significant attenuation in chlorinated hydrocarbon impact is still occurring between the sub-slab and indoor air (Tables 1 and 2).

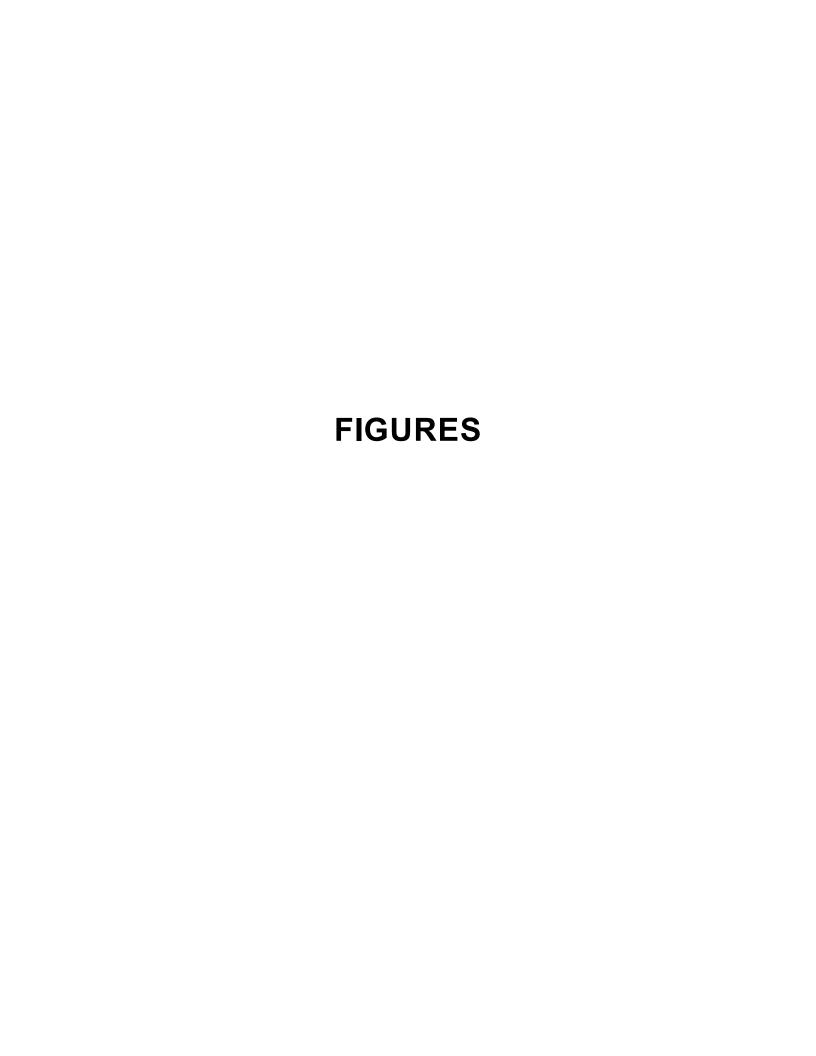
- However, PCE concentrations detected during this event in sub-slab soil-vapor samples SS-2 though SS-4, remain above the Commercial CHHSL for PCE in soil gas. Accumulation of chlorinated hydrocarbon impact below the slab will likely be addressed following active remediation. Additional sampling should be completed following a significant period of remedial operation to evaluate conditions beneath the concrete slab.
- PCE concentrations detected in indoor air samples were slightly higher in all units in comparison to samples collected during the December 2016 sampling event.
- The proposed corrective action, once initiated, will reduce sub-slab soil-vapor concentrations and likely further reduce indoor air impacts.

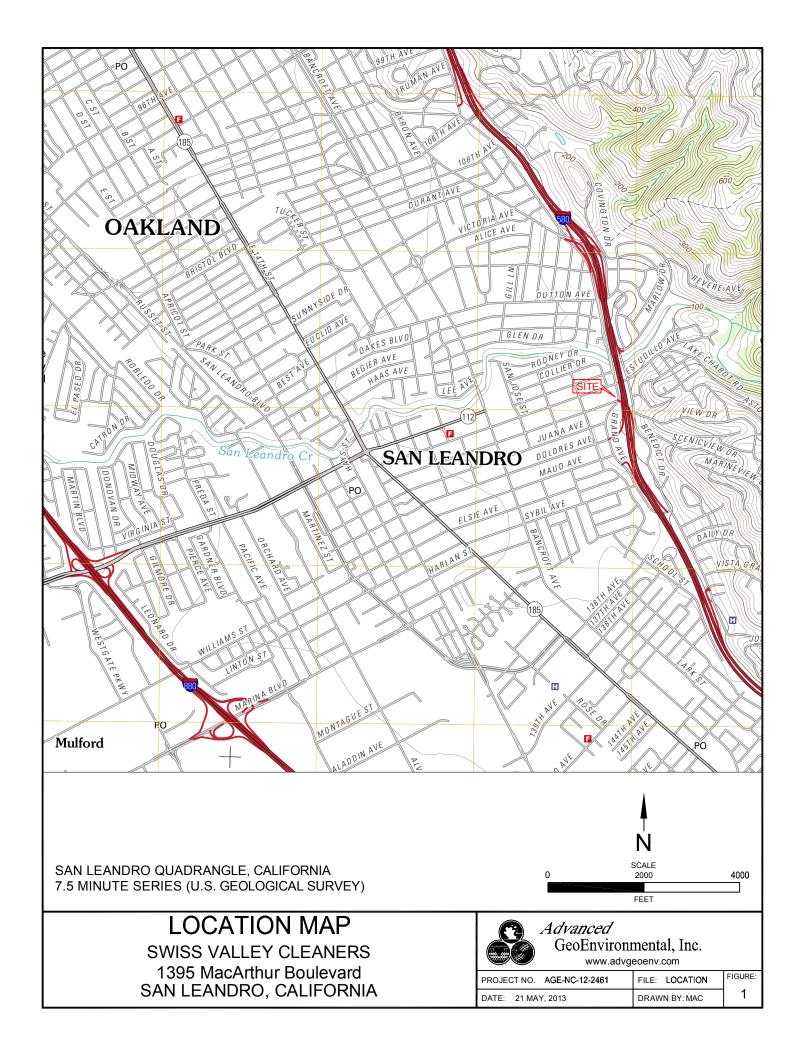
#### 5.0. RECOMMENDATIONS

Based on the results of this investigation, AGE recommends that additional sub-slab and indoor air samples be collected in the summer of 2017, following active soil-vapor remediation.

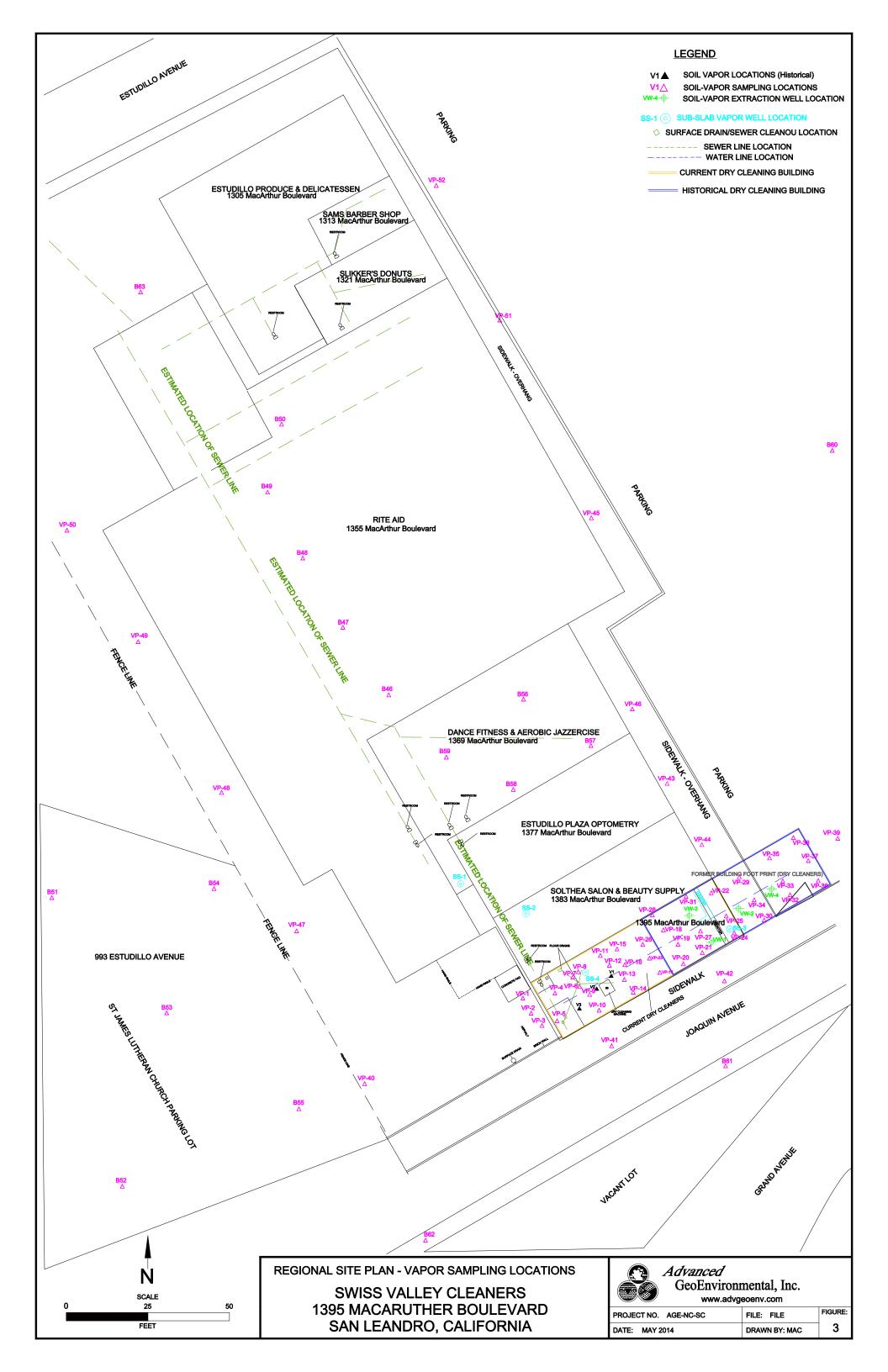
#### 6.0. LIMITATIONS

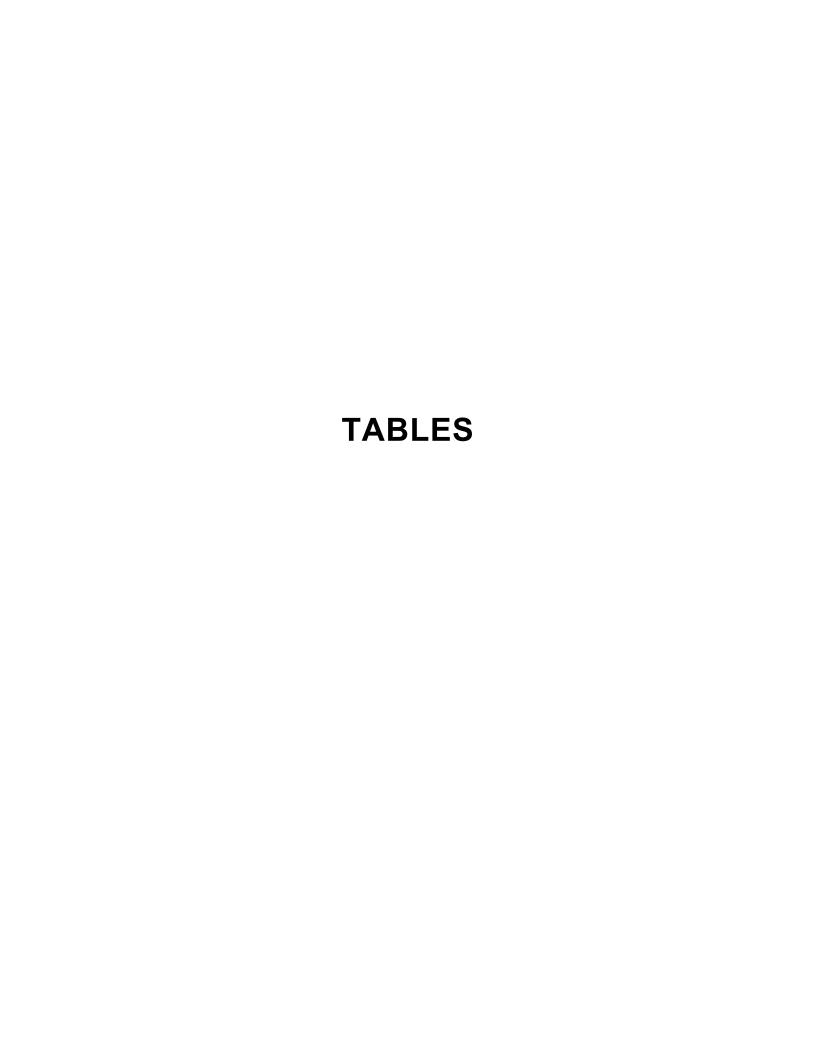
Our professional services were performed using the degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar localities. The findings were based mainly upon analytical results provided by an independent laboratory. Evaluations of the geologic conditions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











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

									TO	-15								
Sample ID	Date	BCE	TCE	1,2-DCA	EDB	Naphthalene	1,4-DCB	Acetone	CT	В	Т	Э	×	Chloromethane	мысра	Ethyl Acetate	TCFM	Chloroform
	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
IA-1395 MacArthur	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
	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
IA-1383 MacArthur	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
	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
IA-1377	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
MacArthur	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

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

									TO-	-15								
Sample ID	Date	PCE	TCE	1,2-DCA	EDB	Naphthalene	1,4-DCB	Acetone	CT	В	Т	Э	×	Chloromethane	рсрем	Ethyl Acetate	TCFM	Chloroform
IA-1369 MacArthur	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	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
SFBRWCI (Comme		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

CT: Carbon Tetrachloride

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

DCDFM: Dichlorodifluoromethane TCFM: Trichlorofluoromethane IPA: Isopropyl Alcohol VC: Vinyl Chloride B: Benzene; T: Toluene; E: Ethyl-benzene; X: Total Xylenes

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

#### SUB-SLAB VAPOR ANALYTICAL RESULTS

## **Swiss Valley Cleaners**

1395 MacArthur Boulevard, San Leandro, California

(micrograms per cubic meter)

				TO-15																			
				Dry	Cleaning	Constitue	ents							Chem	icals fro	om oth	er sou	rces					
Sample ID	Location	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	۸C	IPA	1,2-DCA	В	T	Е	×	1,2-DCP	Ethanol	4-ET	1,2,4-TMB	Ethyl Acetate	Naphthalene	1,3,5-TMB	Acetone	2-Butanone
SS-1	1369 MacArthur	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
30-1	Boulvard	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	1	•	<5.4	<26	<13
		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
SS-2	1383 MacArthur Boulevard	10-30-2015	12,000	<41	<30	<30	<30	<20	<76	<31	<24	<29	<33	<33	<36	<58	<38	<38	1	1	<38	<180	<91
		10-13-2016	15,000	<31	<23	<22	<22	<14	79	<23	<18	<21	<25	<25	<26	<43	<28	<170	1	1	<28	<140	<67
		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
SS-3	1395 MacArthur Boulevard (Front of Suite)	10-30-2015	24,000	67	<46	<46	<46	<29	<110	<46	<37	<43	<50	<50	<53	<87	<56	<56	1	-	<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

#### SUB-SLAB VAPOR ANALYTICAL RESULTS

### **Swiss Valley Cleaners**

#### 1395 MacArthur Boulevard, San Leandro, California

(micrograms per cubic meter)

												T	O-15										
				Dry	Cleaning	Constitue	ents							Chemi	icals fro	om oth	er sou	rces					
Sample ID	Location	Date	PCE	TCE	1,1-DCE	Trans 1,2-DCE	Cis 1,2-DCE	۸C	IPA	1,2-DCA	В	Т	Э	×	1,2-DCP	Ethanol	4-ET	1,2,4-TMB	Ethyl Acetate	Naphthalene	1,3,5-TMB	Acetone	2-Butanone
		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
SS-4	1395 MacArthur Boulevard (Rear of Suite)	10-30-2015	21,000	<48	<48	<47	<47	<30	<120	<48	<38	<45	<51	<51	<55	<89	<58	<58	1	-	<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
CH	HHSLs (Commo	ercial)	1,600	1,300	-	240,000	120,000	95.0	-	360	280	890,000	3,600	6,700,000	•	,	-	-	-	310	-	-	-
SFBR	WCB ESL (Cor	mmercial)	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

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 bulidings constructed with engineere 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

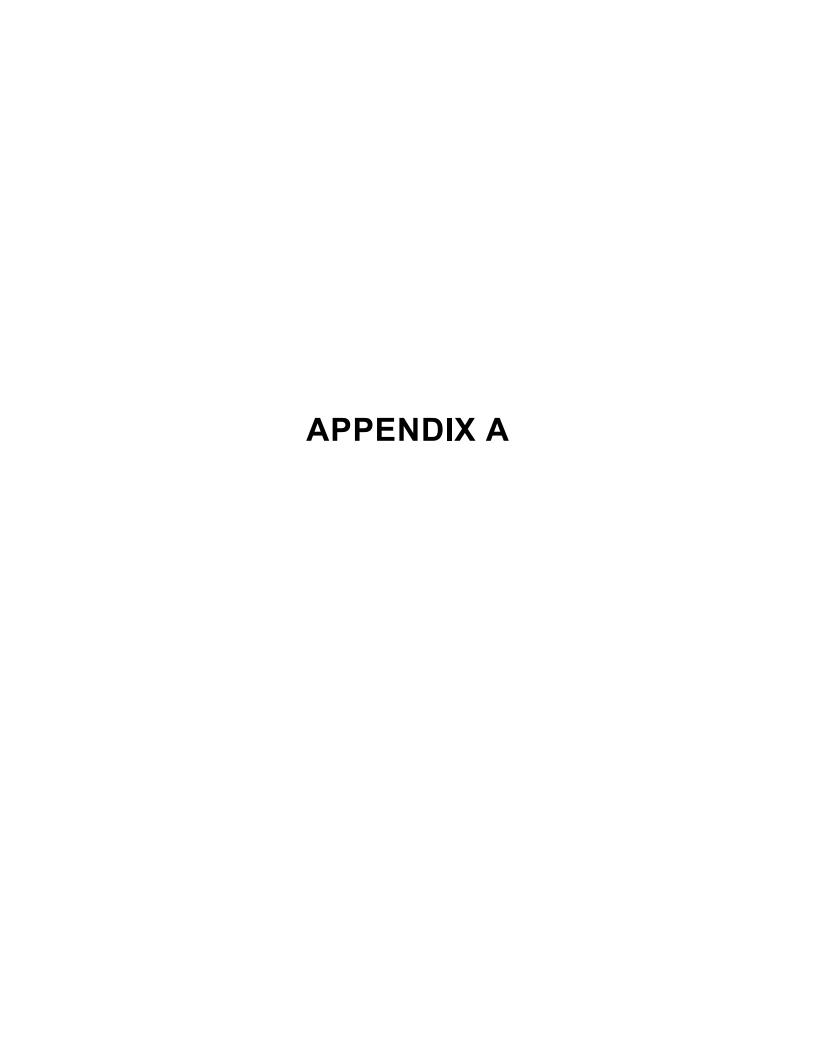
VC: Vinyl Chloride IPA: Isopropyl Alcohol

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

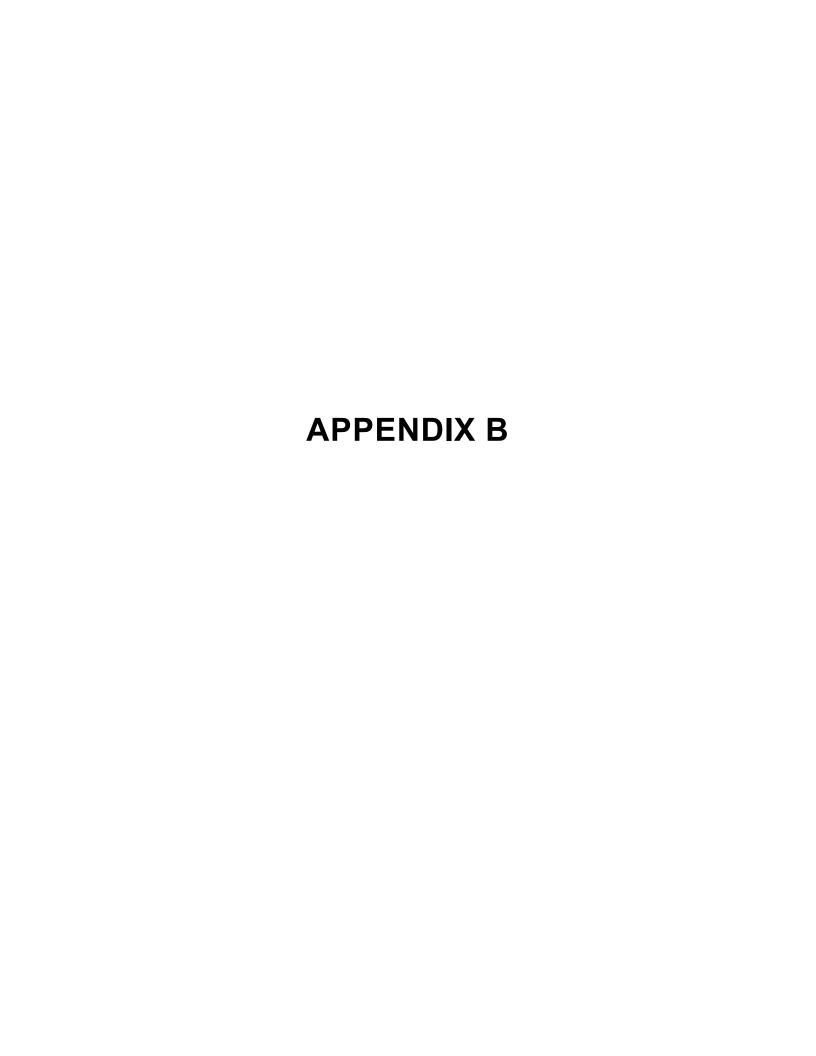
1,2,4-TMB: 1,2,4-Trimethylbenzene

1,3,5-TMB: 1,3,5-Trimethylbenzene



# **Soil Vapor Sampling Field Log**

	Date. 10 ()	<u> </u>	iu Feisorinei.	. DIVICE	
Purge Appara	ius:	200ml/min	low flow pump		
Purge Volume		110	$\sim$		
Purge Time:		1,7	sh second	\$	
	ster Total Volume:	9	5.0L		
Field Point:	35-2 (50	(thea)	Sample ID:	55 Z	= 0.7 p
Canister#:	12459 364	lda P	Purge	Sar	nple )
Manifold#:	30805	Initial	Post	Initial	Post
	Time	1021	lora	1622	10 20
Pres	sure (in Hg)	***	-	29 He	414
		Manifold Leak	Test (10 Minutes)		
Start Time:	1010		End Time:	1020	
Field Point:	SS-3 (F	ont of suc	Sample ID:	=0,2	pom
Canister#:	20049	P	Purge		nple
Manifold#:	100001	Initial	Post	Initial MA	Post
	Time	1046	1017	ZIALIE	1053
Pres	sure (in Hg)			13B 66	711
		Contractive to the contract of	Test (10 Minutes)		
Start Time:	103	<i>O</i> ,	End Time:	11040	
Field Point:	SS-LI ( Rea	rot SUC)	Sample ID:	= 6.7ppm	
Canister#:	27381		Purge		nple
Manifold#:	30966	Initial	Post	Initial \\\	Post
	Time	1112	1113	CANG	11172
Pres	sure (in Hg)			129114	2114
		A 1984, spray of a development as assertance product	Test (10 Minutes)		
Start Time:	fio	0	End Time:	1110	
Field Point:	AMEN		Sample ID:		
Canister#:		P	urge	Sar	nple
Manifold#:		Initial	Post	Initial	Post
· · · · · · · · · · · · · · · · · · ·	Time				
Pres	sure (in Hg)				
maka ka mana a ang may mga		Manifold Leak	Test (10 Minutes)		
Start Time:			End Time:		





10/29/2016 Mr. Daniel Villanueva Advanced GeoEnvironmental 837 Shaw Road

Stockton CA 95215

Project Name: Swiss Valley Cleaners Project #: Swiss Valley Cleaners

Workorder #: 1610390

Dear Mr. Daniel Villanueva

The following report includes the data for the above referenced project for sample(s) received on 10/18/2016 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Rachel Selenis at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Rachel Selenis

**Project Manager** 



#### WORK ORDER #: 1610390

Work Order Summary

CLIENT: Mr. Daniel Villanueva BILL TO: Mr. Daniel Villanueva

Advanced GeoEnvironmental Advanced GeoEnvironmental

837 Shaw Road Stockton, CA 95215 Stockton, CA 95215

PHONE: 209-467-1006 P.O. # Swiss Valley Cleaners

FAX: 209-467-1118 PROJECT # Swiss Valley Cleaners Swiss Valley

**DATE RECEIVED:** 10/18/2016 CONTACT: Cleaners Rachel Selenis

			RECEIPT	FINAL
FRACTION #	NAME	<u>TEST</u>	VAC./PRES.	<b>PRESSURE</b>
01A	IA-1377 MacArthur	Modified TO-15	7.1 "Hg	5 psi
01B	IA-1377 MacArthur	Modified TO-15	7.1 "Hg	5 psi
02A	IA-1395 MacArthur	Modified TO-15	4.9 "Hg	5.1 psi
02B	IA-1395 MacArthur	Modified TO-15	4.9 "Hg	5.1 psi
03A	IA-1383 MacArthur	Modified TO-15	4.5 "Hg	5 psi
03B	IA-1383 MacArthur	Modified TO-15	4.5 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06BB	LCSD	Modified TO-15	NA	NA

	Meide Mayor	
CERTIFIED BY:	0 00	DATE: 10/29/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.



#### LABORATORY NARRATIVE Modified TO-15 Std Full Scan/SIM Advanced GeoEnvironmental Workorder# 1610390

Three 6 Liter Summa Canister (SIM Certified) samples were received on October 18, 2016. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	TO-15	ATL Modifications
ICAL %RSD acceptance criteria	=30% RSD with 2<br compounds allowed out to = 40% RSD</td <td>For SIM only: Project specific; default criteria is <!--=30% RSD with 10% of compounds allowed out to </= 40% RSD</td--></td>	For SIM only: Project specific; default criteria is =30% RSD with 10% of compounds allowed out to </= 40% RSD</td
Daily Calibration	+- 30% Difference	For Std. Full Scan: = 30% Difference with two allowed out up to </=40%.; flag and narrate outliers</td
		For SIM: Project specific; default criteria is = 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers</td
Blank and standards	Zero air	For SIM only: Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

#### **Receiving Notes**

The Chain of Custody (COC) information for sample IA-1383 MacArthur did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

#### **Analytical Notes**

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Dilution was performed on samples IA-1377 MacArthur and IA-1383 MacArthur due to the presence of high level target species.



#### **Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

- B Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
  - J Estimated value.
  - E Exceeds instrument calibration range.
  - S Saturated peak.
  - Q Exceeds quality control limits.
  - U Compound analyzed for but not detected above the reporting limit.
  - UJ- Non-detected compound associated with low bias in the CCV
  - N The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

- a-File was requantified
- b-File was quantified by a second column and detector
- r1-File was requantified for the purpose of reissue



# Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: IA-1377 MacArthur

Lab ID#: 1610390-01A

	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Ethanol	1.8	150 E	3.3	290 E
Acetone	1.8	130	4.2	310
2-Propanol	1.8	420 E	4.3	1000 E

Client Sample ID: IA-1377 MacArthur

Lab ID#: 1610390-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)	
Freon 12	0.070	0.39	0.35	1.9	
Chloromethane	0.18	0.48	0.36	1.0	
Toluene	0.070	0.57	0.26	2.1	
Tetrachloroethene	0.070	0.78	0.48	5.3	
Ethyl Benzene	0.070	0.20	0.30	0.88	
m,p-Xylene	0.14	0.67	0.61	2.9	
o-Xylene	0.070	0.21	0.30	0.90	

Client Sample ID: IA-1395 MacArthur

Lab ID#: 1610390-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.16	0.17	0.90	0.96
Ethanol	0.80	17	1.5	33
Acetone	0.80	140 E	1.9	340 E
2-Propanol	0.80	110 E	2.0	260 E
2-Butanone (Methyl Ethyl Ketone)	0.80	1.9	2.4	5.6
Tetrahydrofuran	0.80	6.6	2.4	19
Heptane	0.16	0.24	0.66	0.98

Client Sample ID: IA-1395 MacArthur

Lab ID#: 1610390-02B

	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)



# Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: IA-1395 MacArthur

Lab ID#: 1610390-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.032	0.39	0.16	1.9
Chloromethane	0.080	0.42	0.17	0.87
Chloroform	0.032	0.080	0.16	0.39
Carbon Tetrachloride	0.032	0.055	0.20	0.35
Benzene	0.080	0.13	0.26	0.42
Toluene	0.032	0.83	0.12	3.1
Tetrachloroethene	0.032	5.8	0.22	40
Ethyl Benzene	0.032	0.055	0.14	0.24
m,p-Xylene	0.064	0.18	0.28	0.77
o-Xylene	0.032	0.064	0.14	0.28

Client Sample ID: IA-1383 MacArthur

Lab ID#: 1610390-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	7.9	110	15	200
Acetone	7.9	2600 E	19	6300 E
2-Propanol	7.9	760 E	19	1900 E

Client Sample ID: IA-1383 MacArthur

Lab ID#: 1610390-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.32	0.43	1.6	2.1
Toluene	0.32	3.8	1.2	14
Tetrachloroethene	0.32	1.1	2.1	7.2



#### Client Sample ID: IA-1377 MacArthur Lab ID#: 1610390-01A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102611 Date of Collection: 10/14/16 11:55:00 A
Dil. Factor: 3.52 Date of Analysis: 10/26/16 02:58 PM

Dii. i dotoi.	J.J2	Date	Ol Allalysis. 10/2	0/ 10 02.30 F W
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.35	Not Detected	0.78	Not Detected
Bromomethane	1.8	Not Detected	6.8	Not Detected
Freon 11	0.35	Not Detected	2.0	Not Detected
Ethanol	1.8	150 E	3.3	290 E
Freon 113	0.35	Not Detected	2.7	Not Detected
Acetone	1.8	130	4.2	310
2-Propanol	1.8	420 E	4.3	1000 E
Carbon Disulfide	1.8	Not Detected	5.5	Not Detected
3-Chloropropene	1.8	Not Detected	5.5	Not Detected
Methylene Chloride	0.70	Not Detected	2.4	Not Detected
Hexane	0.35	Not Detected	1.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1.8	Not Detected	5.2	Not Detected
Tetrahydrofuran	1.8	Not Detected	5.2	Not Detected
Cyclohexane	0.35	Not Detected	1.2	Not Detected
2,2,4-Trimethylpentane	1.8	Not Detected	8.2	Not Detected
Heptane	0.35	Not Detected	1.4	Not Detected
1,2-Dichloropropane	0.35	Not Detected	1.6	Not Detected
1,4-Dioxane	0.35	Not Detected	1.3	Not Detected
Bromodichloromethane	0.35	Not Detected	2.4	Not Detected
cis-1,3-Dichloropropene	0.35	Not Detected	1.6	Not Detected
4-Methyl-2-pentanone	0.35	Not Detected	1.4	Not Detected
trans-1,3-Dichloropropene	0.35	Not Detected	1.6	Not Detected
2-Hexanone	1.8	Not Detected	7.2	Not Detected
Dibromochloromethane	0.35	Not Detected	3.0	Not Detected
Chlorobenzene	0.35	Not Detected	1.6	Not Detected
Styrene	0.35	Not Detected	1.5	Not Detected
Bromoform	0.35	Not Detected	3.6	Not Detected
Cumene	0.35	Not Detected	1.7	Not Detected
Propylbenzene	0.35	Not Detected	1.7	Not Detected
4-Ethyltoluene	0.35	Not Detected	1.7	Not Detected
1,3,5-Trimethylbenzene	0.35	Not Detected	1.7	Not Detected
1,2,4-Trimethylbenzene	0.35	Not Detected	1.7	Not Detected
1,3-Dichlorobenzene	0.35	Not Detected	2.1	Not Detected
alpha-Chlorotoluene	0.35	Not Detected	1.8	Not Detected
1,2-Dichlorobenzene	0.35	Not Detected	2.1	Not Detected
1,2,4-Trichlorobenzene	1.8	Not Detected	13	Not Detected
Hexachlorobutadiene	1.8	Not Detected	19	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates %Recovery Limits



# Client Sample ID: IA-1377 MacArthur

Lab ID#: 1610390-01A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102611 Date of Collection: 10/14/16 11:55:00 A
Dil. Factor: 3.52 Date of Analysis: 10/26/16 02:58 PM

Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130



#### Client Sample ID: IA-1377 MacArthur Lab ID#: 1610390-01B

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102611sim Date of Collection: 10/14/16 11:55:00 A
Dil. Factor: 3.52 Date of Analysis: 10/26/16 02:58 PM

Dil. i actor.	3.32	Date of Analysis. 10/20/10 02:30 F W		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.070	0.39	0.35	1.9
Freon 114	0.070	Not Detected	0.49	Not Detected
Chloromethane	0.18	0.48	0.36	1.0
Vinyl Chloride	0.035	Not Detected	0.090	Not Detected
Chloroethane	0.18	Not Detected	0.46	Not Detected
1,1-Dichloroethene	0.035	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
Methyl tert-butyl ether	0.35	Not Detected	1.3	Not Detected
1,1-Dichloroethane	0.070	Not Detected	0.28	Not Detected
cis-1,2-Dichloroethene	0.070	Not Detected	0.28	Not Detected
Chloroform	0.070	Not Detected	0.34	Not Detected
1,1,1-Trichloroethane	0.070	Not Detected	0.38	Not Detected
Carbon Tetrachloride	0.070	Not Detected	0.44	Not Detected
Benzene	0.18	Not Detected	0.56	Not Detected
1,2-Dichloroethane	0.070	Not Detected	0.28	Not Detected
Trichloroethene	0.070	Not Detected	0.38	Not Detected
Toluene	0.070	0.57	0.26	2.1
1,1,2-Trichloroethane	0.070	Not Detected	0.38	Not Detected
Tetrachloroethene	0.070	0.78	0.48	5.3
1,2-Dibromoethane (EDB)	0.070	Not Detected	0.54	Not Detected
Ethyl Benzene	0.070	0.20	0.30	0.88
m,p-Xylene	0.14	0.67	0.61	2.9
o-Xylene	0.070	0.21	0.30	0.90
1,1,2,2-Tetrachloroethane	0.070	Not Detected	0.48	Not Detected
1,4-Dichlorobenzene	0.070	Not Detected	0.42	Not Detected

#### Container Type: 6 Liter Summa Canister (SIM Certified)

		wethod
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130



#### Client Sample ID: IA-1395 MacArthur Lab ID#: 1610390-02A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102610 Date of Collection: 10/14/16 10:53:00 A
Dil. Factor: 1.61 Date of Analysis: 10/26/16 02:15 PM

Dil. Factor:	1.61	Date	of Analysis: 10/2	6/16 UZ:15 PW
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.16	Not Detected	0.36	Not Detected
Bromomethane	0.80	Not Detected	3.1	Not Detected
Freon 11	0.16	0.17	0.90	0.96
Ethanol	0.80	17	1.5	33
Freon 113	0.16	Not Detected	1.2	Not Detected
Acetone	0.80	140 E	1.9	340 E
2-Propanol	0.80	110 E	2.0	260 E
Carbon Disulfide	0.80	Not Detected	2.5	Not Detected
3-Chloropropene	0.80	Not Detected	2.5	Not Detected
Methylene Chloride	0.32	Not Detected	1.1	Not Detected
Hexane	0.16	Not Detected	0.57	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.80	1.9	2.4	5.6
Tetrahydrofuran	0.80	6.6	2.4	19
Cyclohexane	0.16	Not Detected	0.55	Not Detected
2,2,4-Trimethylpentane	0.80	Not Detected	3.8	Not Detected
Heptane	0.16	0.24	0.66	0.98
1,2-Dichloropropane	0.16	Not Detected	0.74	Not Detected
1,4-Dioxane	0.16	Not Detected	0.58	Not Detected
Bromodichloromethane	0.16	Not Detected	1.1	Not Detected
cis-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
4-Methyl-2-pentanone	0.16	Not Detected	0.66	Not Detected
trans-1,3-Dichloropropene	0.16	Not Detected	0.73	Not Detected
2-Hexanone	0.80	Not Detected	3.3	Not Detected
Dibromochloromethane	0.16	Not Detected	1.4	Not Detected
Chlorobenzene	0.16	Not Detected	0.74	Not Detected
Styrene	0.16	Not Detected	0.68	Not Detected
Bromoform	0.16	Not Detected	1.7	Not Detected
Cumene	0.16	Not Detected	0.79	Not Detected
Propylbenzene	0.16	Not Detected	0.79	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.79	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,3-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
alpha-Chlorotoluene	0.16	Not Detected	0.83	Not Detected
1,2-Dichlorobenzene	0.16	Not Detected	0.97	Not Detected
1,2,4-Trichlorobenzene	0.80	Not Detected	6.0	Not Detected
Hexachlorobutadiene	0.80	Not Detected	8.6	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates Method
Limits



#### Client Sample ID: IA-1395 MacArthur

Lab ID#: 1610390-02A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102610 Date of Collection: 10/14/16 10:53:00 A
Dil. Factor: 1.61 Date of Analysis: 10/26/16 02:15 PM

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	99	70-130



#### Client Sample ID: IA-1395 MacArthur Lab ID#: 1610390-02B

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102610sim Date of Collection: 10/14/16 10:53:00 A
Dil. Factor: 1.61 Date of Analysis: 10/26/16 02:15 PM

			· · · · · · · · · · · · · · · · · · ·	o, 10 0=110 1 III
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.032	0.39	0.16	1.9
Freon 114	0.032	Not Detected	0.10	Not Detected
			-	
Chloromethane	0.080	0.42	0.17	0.87
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
Chloroethane	0.080	Not Detected	0.21	Not Detected
1,1-Dichloroethene	0.016	Not Detected	0.064	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.58	Not Detected
1,1-Dichloroethane	0.032	Not Detected	0.13	Not Detected
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
Chloroform	0.032	0.080	0.16	0.39
1,1,1-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Carbon Tetrachloride	0.032	0.055	0.20	0.35
Benzene	0.080	0.13	0.26	0.42
1,2-Dichloroethane	0.032	Not Detected	0.13	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Toluene	0.032	0.83	0.12	3.1
1,1,2-Trichloroethane	0.032	Not Detected	0.18	Not Detected
Tetrachloroethene	0.032	5.8	0.22	40
1,2-Dibromoethane (EDB)	0.032	Not Detected	0.25	Not Detected
Ethyl Benzene	0.032	0.055	0.14	0.24
m,p-Xylene	0.064	0.18	0.28	0.77
o-Xylene	0.032	0.064	0.14	0.28
1,1,2,2-Tetrachloroethane	0.032	Not Detected	0.22	Not Detected
1,4-Dichlorobenzene	0.032	Not Detected	0.19	Not Detected

#### Container Type: 6 Liter Summa Canister (SIM Certified)

		wethod	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	98	70-130	



#### Client Sample ID: IA-1383 MacArthur Lab ID#: 1610390-03A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102612 Date of Collection: 10/14/16 10:23:00 A
Dil. Factor: 15.8 Date of Analysis: 10/26/16 03:42 PM

Dil. I deter.	13.0	Date	Ol Allalysis. 10/2	0/10 03.42 F W
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	1.6	Not Detected	3.5	Not Detected
Bromomethane	7.9	Not Detected	31	Not Detected
Freon 11	1.6	Not Detected	8.9	Not Detected
Ethanol	7.9	110	15	200
Freon 113	1.6	Not Detected	12	Not Detected
Acetone	7.9	2600 E	19	6300 E
2-Propanol	7.9	760 E	19	1900 E
Carbon Disulfide	7.9	Not Detected	25	Not Detected
3-Chloropropene	7.9	Not Detected	25	Not Detected
Methylene Chloride	3.2	Not Detected	11	Not Detected
Hexane	1.6	Not Detected	5.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	7.9	Not Detected	23	Not Detected
Tetrahydrofuran	7.9	Not Detected	23	Not Detected
Cyclohexane	1.6	Not Detected	5.4	Not Detected
2,2,4-Trimethylpentane	7.9	Not Detected	37	Not Detected
Heptane	1.6	Not Detected	6.5	Not Detected
1,2-Dichloropropane	1.6	Not Detected	7.3	Not Detected
1,4-Dioxane	1.6	Not Detected	5.7	Not Detected
Bromodichloromethane	1.6	Not Detected	10	Not Detected
cis-1,3-Dichloropropene	1.6	Not Detected	7.2	Not Detected
4-Methyl-2-pentanone	1.6	Not Detected	6.5	Not Detected
trans-1,3-Dichloropropene	1.6	Not Detected	7.2	Not Detected
2-Hexanone	7.9	Not Detected	32	Not Detected
Dibromochloromethane	1.6	Not Detected	13	Not Detected
Chlorobenzene	1.6	Not Detected	7.3	Not Detected
Styrene	1.6	Not Detected	6.7	Not Detected
Bromoform	1.6	Not Detected	16	Not Detected
Cumene	1.6	Not Detected	7.8	Not Detected
Propylbenzene	1.6	Not Detected	7.8	Not Detected
4-Ethyltoluene	1.6	Not Detected	7.8	Not Detected
1,3,5-Trimethylbenzene	1.6	Not Detected	7.8	Not Detected
1,2,4-Trimethylbenzene	1.6	Not Detected	7.8	Not Detected
1,3-Dichlorobenzene	1.6	Not Detected	9.5	Not Detected
alpha-Chlorotoluene	1.6	Not Detected	8.2	Not Detected
1,2-Dichlorobenzene	1.6	Not Detected	9.5	Not Detected
1,2,4-Trichlorobenzene	7.9	Not Detected	59	Not Detected
Hexachlorobutadiene	7.9	Not Detected	84	Not Detected

E = Exceeds instrument calibration range.

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates %Recovery Limits



#### Client Sample ID: IA-1383 MacArthur

Lab ID#: 1610390-03A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102612 Date of Collection: 10/14/16 10:23:00 A
Dil. Factor: 15.8 Date of Analysis: 10/26/16 03:42 PM

		Method	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	102	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	98	70-130	



# Client Sample ID: IA-1383 MacArthur Lab ID#: 1610390-03B

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102612sim Date of Collection: 10/14/16 10:23:00 A
Dil. Factor: 15.8 Date of Analysis: 10/26/16 03:42 PM

Dil. i actor.	13.0	Date	OI Allalysis. 10/2	0/ 10 03.72 F W
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.32	0.43	1.6	2.1
Freon 114	0.32	Not Detected	2.2	Not Detected
Chloromethane	0.79	Not Detected	1.6	Not Detected
Vinyl Chloride	0.16	Not Detected	0.40	Not Detected
Chloroethane	0.79	Not Detected	2.1	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.63	Not Detected
trans-1,2-Dichloroethene	1.6	Not Detected	6.3	Not Detected
Methyl tert-butyl ether	1.6	Not Detected	5.7	Not Detected
1,1-Dichloroethane	0.32	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.32	Not Detected	1.2	Not Detected
Chloroform	0.32	Not Detected	1.5	Not Detected
1,1,1-Trichloroethane	0.32	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.32	Not Detected	2.0	Not Detected
Benzene	0.79	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.32	Not Detected	1.3	Not Detected
Trichloroethene	0.32	Not Detected	1.7	Not Detected
Toluene	0.32	3.8	1.2	14
1,1,2-Trichloroethane	0.32	Not Detected	1.7	Not Detected
Tetrachloroethene	0.32	1.1	2.1	7.2
1,2-Dibromoethane (EDB)	0.32	Not Detected	2.4	Not Detected
Ethyl Benzene	0.32	Not Detected	1.4	Not Detected
m,p-Xylene	0.63	Not Detected	2.7	Not Detected
o-Xylene	0.32	Not Detected	1.4	Not Detected
1,1,2,2-Tetrachloroethane	0.32	Not Detected	2.2	Not Detected
1,4-Dichlorobenzene	0.32	Not Detected	1.9	Not Detected

# Container Type: 6 Liter Summa Canister (SIM Certified)

		Wethou	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	95	70-130	



File Name:

# Client Sample ID: Lab Blank Lab ID#: 1610390-04A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

e102607

**Date of Collection: NA** 

0.85

0.46

0.42

1.0

0.49

0.49

0.49

0.49

0.49

0.60

0.52

0.60

3.7

5.3

Not Detected

Method

Dil. Factor:	1.00 Date of Analysis: 10/26/16 11:4		6/16 11:48 AM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,3-Butadiene	0.10	Not Detected	0.22	Not Detected
Bromomethane	0.50	Not Detected	1.9	Not Detected
Freon 11	0.10	Not Detected	0.56	Not Detected
Ethanol	0.50	Not Detected	0.94	Not Detected
Freon 113	0.10	Not Detected	0.77	Not Detected
Acetone	0.50	Not Detected	1.2	Not Detected
2-Propanol	0.50	Not Detected	1.2	Not Detected
Carbon Disulfide	0.50	Not Detected	1.6	Not Detected
3-Chloropropene	0.50	Not Detected	1.6	Not Detected
Methylene Chloride	0.20	Not Detected	0.69	Not Detected
Hexane	0.10	Not Detected	0.35	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.50	Not Detected	1.5	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Cyclohexane	0.10	Not Detected	0.34	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Heptane	0.10	Not Detected	0.41	Not Detected
1,2-Dichloropropane	0.10	Not Detected	0.46	Not Detected
1,4-Dioxane	0.10	Not Detected	0.36	Not Detected
Bromodichloromethane	0.10	Not Detected	0.67	Not Detected
cis-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
4-Methyl-2-pentanone	0.10	Not Detected	0.41	Not Detected
trans-1,3-Dichloropropene	0.10	Not Detected	0.45	Not Detected
2-Hexanone	0.50	Not Detected	2.0	Not Detected

Not Detected

0.10

0.10

0.10

0.10

0.10

0.10

0.10

0.10

0.10

0.10

0.10

0.10

0.50

0.50

**Container Type: NA - Not Applicable** 

Dibromochloromethane

1,3,5-Trimethylbenzene

1,2,4-Trimethylbenzene

1,3-Dichlorobenzene

alpha-Chlorotoluene

1,2-Dichlorobenzene

Hexachlorobutadiene

1.2.4-Trichlorobenzene

Chlorobenzene Styrene

Propylbenzene

4-Ethyltoluene

**Bromoform** 

Cumene

Surrogates	%Recovery	Limits
1 2-Dichloroethane-d4	108	70-130



# Client Sample ID: Lab Blank Lab ID#: 1610390-04A

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102607 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 11:48 AM

		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	99	70-130	



# Client Sample ID: Lab Blank Lab ID#: 1610390-04B

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Dil. Factor:	1.00 Rpt. Limit	Date of Analysis: 10/26/16 11:48 AM Amount Rpt. Limit Amoun		
Dil. Factor:		<del>-</del>		
File Name:	e102607sim	Dat	e of Collection: NA	

Dill I doto!!	1.00	Date	Of Allalysis. 10/2	O/ TO TTTO AIM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.020	Not Detected	0.099	Not Detected
Freon 114	0.020	Not Detected	0.14	Not Detected
Chloromethane	0.050	Not Detected	0.10	Not Detected
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
Chloroethane	0.050	Not Detected	0.13	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
Chloroform	0.020	Not Detected	0.098	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Carbon Tetrachloride	0.020	Not Detected	0.12	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
1,2-Dibromoethane (EDB)	0.020	Not Detected	0.15	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
1,4-Dichlorobenzene	0.020	Not Detected	0.12	Not Detected

		wetnoa	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	107	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	96	70-130	



# Client Sample ID: CCV Lab ID#: 1610390-05A

#### MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102602 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 07:48 AM

Compound	%Recovery	
1,3-Butadiene	86	
Bromomethane	91	
Freon 11	86	
Ethanol	86	
Freon 113	84	
Acetone	88	
2-Propanol	90	
Carbon Disulfide	79	
3-Chloropropene	82	
Methylene Chloride	84	
Hexane	87	
2-Butanone (Methyl Ethyl Ketone)	84	
Tetrahydrofuran	92	
Cyclohexane	85	
2,2,4-Trimethylpentane	88	
Heptane	92	
1,2-Dichloropropane	89	
1,4-Dioxane	88	
Bromodichloromethane	89	
cis-1,3-Dichloropropene	89	
4-Methyl-2-pentanone	92	
trans-1,3-Dichloropropene	85	
2-Hexanone	90	
Dibromochloromethane	90	
Chlorobenzene	85	
Styrene	89	
Bromoform	92	
Cumene	89	
Propylbenzene	88	
4-Ethyltoluene	90	
1,3,5-Trimethylbenzene	91	
1,2,4-Trimethylbenzene	86	
1,3-Dichlorobenzene	85	
alpha-Chlorotoluene	90	
1,2-Dichlorobenzene	89	
1,2,4-Trichlorobenzene	78	
Hexachlorobutadiene	85	

		Method	
Surrogates	%Recovery	Limits	
1.2-Dichloroethane-d4	98	70-130	



# Client Sample ID: CCV Lab ID#: 1610390-05A

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102602 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 07:48 AM

		Wethod	
Surrogates	%Recovery	Limits	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	100	70-130	



# Client Sample ID: CCV Lab ID#: 1610390-05B

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102602sim Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 07:48 AM

Compound	%Recovery	
Freon 12	84	
Freon 114	84	
Chloromethane	87	
Vinyl Chloride	86	
Chloroethane	86	
1,1-Dichloroethene	79	
trans-1,2-Dichloroethene	80	
Methyl tert-butyl ether	83	
1,1-Dichloroethane	86	
cis-1,2-Dichloroethene	79	
Chloroform	80	
1,1,1-Trichloroethane	83	
Carbon Tetrachloride	80	
Benzene	80	
1,2-Dichloroethane	85	
Trichloroethene	80	
Toluene	86	
1,1,2-Trichloroethane	87	
Tetrachloroethene	82	
1,2-Dibromoethane (EDB)	83	
Ethyl Benzene	89	
m,p-Xylene	88	
o-Xylene	87	
1,1,2,2-Tetrachloroethane	88	
1,4-Dichlorobenzene	84	

,, ,,		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	97	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	100	70-130



# Client Sample ID: LCS Lab ID#: 1610390-06A

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102603 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 08:32 AM

Compound         %Recovery         Limits           1,3-Butadiene         106         70-130           Bromomethane         115         70-130           Freon 11         106         70-130           Ethanol         69 Q         70-130           Freon 113         102         70-130           Acetone         106         70-130           2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           Ebutanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           Cyclohexane         109         70-130           Heptane         118         70-130           Heptane         118         70-130           Heptane         118         70-130           Heptane         118         70-130           Heybrid         109         70-130           Bromodichloromethane         118         70-1			Method
Bromomethane         115         70-130           Freon 11         106         70-130           Ethanol         69 Q         70-130           Freon 113         102         70-130           Acetone         106         70-130           2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Helexane         111         70-130           Helexane         111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           1etrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         115         70-130           4-Methyl-2-pentanone         107         70-130           br	Compound	%Recovery	Limits
Bromomethane         115         70-130           Freon 11         106         70-130           Ethanol         69 Q         70-130           Freon 113         102         70-130           Acetone         106         70-130           2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           Ebutanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           Cyclohexane         109         70-130           Leptane         118         70-130           Leptane         118         70-130           Leptane         118         70-130           Leptane         111         70-130           Bromodichloromethane         112         70-130           cis-1,3-Dichloropropene         115         70-130           trans-1,3-Dichloropropene         104         70-130           Lebexanone         1	1,3-Butadiene	106	70-130
Ethanol         69 Q         70-130           Freon 113         102         70-130           Acetone         106         70-130           2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         112         70-130           4-Methyl-2-pentanone         115         70-130           trans-1,3-Dichloropropene         104         70-130           trans-1,3-Dichloropropene         104         70-130           Chlorobenzene         107         70-130		115	70-130
Freon 113         102         70-130           Acetone         106         70-130           2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           - Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           Leptane         118         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropene         112         70-130           4-Methyl-2-pentanone         114         70-130           Erlexanone         107         70-130           2-Hexanone         104         70-130           Dibromochloromethane         112         70-130           Chlorobenzene         108         70-130           Styr	Freon 11	106	70-130
Acetone         106         70-130           2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           Cyclohexane         109         70-130           Leptane         118         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropene         114         70-130           Bromodichloromethane         112         70-130           4-Methyl-2-pentanone         115         70-130           4-Methyl-2-pentanone         115         70-130           4-Haxanoe         104         70-130           Dibromochloromethane         112         70-130           Chlorobenzene         108         70-130 <td>Ethanol</td> <td>69 Q</td> <td>70-130</td>	Ethanol	69 Q	70-130
2-Propanol         106         70-130           Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           Gis-1,3-Dichloropropene         112         70-130           4-Methyl-2-pentanone         115         70-130           4-Hexanone         104         70-130           2-Hexanone         107         70-130           Dibromochloromethane         112         70-130           Chlorobenzene         110         70-130           Bromoform         117         70-130 <td>Freon 113</td> <td>102</td> <td>70-130</td>	Freon 113	102	70-130
Carbon Disulfide         96         70-130           3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           4-Methyl-2-pentanone         112         70-130           trans-1,3-Dichloropropene         104         70-130           2-Hexanone         107         70-130           Dibromochloromethane         112         70-130           Chlorobenzene         108         70-130           Styrene         110         70-130           Bromoform         111         70-130           Propylbenzene         109         70-130     <	Acetone	106	70-130
3-Chloropropene         101         70-130           Methylene Chloride         102         70-130           Hexane         111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         115         70-130           trans-1,3-Dichloropropene         104         70-130           trans-1,3-Dichloropropene         107         70-130           2-Hexanone         107         70-130           Dibromochloromethane         112         70-130           Styrene         110         70-130           Bromoform         117         70-130           Cumene         110         70-130           Propylbenzene         110         70-130	2-Propanol	106	70-130
Methylene Chloride         102         70-130           Hexane         1111         70-130           2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         1111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         112         70-130           4-Methyl-2-pentanone         115         70-130           trans-1,3-Dichloropropene         104         70-130           2-Hexanone         107         70-130           2-Hexanone         107         70-130           Chlorobenzene         108         70-130           Styrene         110         70-130           Styrene         110         70-130           Bromoform         111         70-130           4-Ethyltoluene         111         70-130           1,3,5-Trimethylbenzene         105         70-130	Carbon Disulfide	96	70-130
Hexane	3-Chloropropene	101	70-130
2-Butanone (Methyl Ethyl Ketone)         102         70-130           Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         112         70-130           4-Methyl-2-pentanone         115         70-130           trans-1,3-Dichloropropene         104         70-130           2-Hexanone         107         70-130           2-Hexanone         107         70-130           Chlorobenzene         108         70-130           Styrene         110         70-130           Bromoform         117         70-130           Cumene         111         70-130           Propylbenzene         109         70-130           4-Ethyltoluene         111         70-130           1,3,5-Trimethylbenzene         105         70-130           1,3,5-Trimethylbenzene         105         70-130	Methylene Chloride	102	70-130
Tetrahydrofuran         111         70-130           Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         112         70-130           4-Methyl-2-pentanone         115         70-130           trans-1,3-Dichloropropene         104         70-130           2-Hexanone         107         70-130           2-Hexanone         107         70-130           Chlorobenzene         112         70-130           Styrene         110         70-130           Bromoform         117         70-130           Cumene         111         70-130           Propylbenzene         109         70-130           4-Ethyltoluene         110         70-130           1,3,5-Trimethylbenzene         105         70-130           1,2,4-Trimethylbenzene         105         70-130           1,3-Dichlorobenzene         102         70-130	Hexane	111	70-130
Cyclohexane         109         70-130           2,2,4-Trimethylpentane         105         70-130           Heptane         118         70-130           1,2-Dichloropropane         113         70-130           1,4-Dioxane         109         70-130           Bromodichloromethane         114         70-130           cis-1,3-Dichloropropene         112         70-130           4-Methyl-2-pentanone         115         70-130           trans-1,3-Dichloropropene         104         70-130           2-Hexanone         107         70-130           Chlorobenzene         108         70-130           Styrene         110         70-130           Styrene         110         70-130           Bromoform         117         70-130           Cumene         111         70-130           Propylbenzene         109         70-130           4-Ethyltoluene         111         70-130           1,3,5-Trimethylbenzene         105         70-130           1,2,4-Trimethylbenzene         105         70-130           1,3-Dichlorobenzene         102         70-130           1,2-Dichlorobenzene         107         70-130	2-Butanone (Methyl Ethyl Ketone)	102	70-130
2,2,4-Trimethylpentane       105       70-130         Heptane       118       70-130         1,2-Dichloropropane       113       70-130         1,4-Dioxane       109       70-130         Bromodichloromethane       114       70-130         cis-1,3-Dichloropropene       112       70-130         4-Methyl-2-pentanone       115       70-130         trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Triichlorobenzene       107       70-130	Tetrahydrofuran	111	70-130
Heptane	Cyclohexane	109	70-130
1,2-Dichloropropane       113       70-130         1,4-Dioxane       109       70-130         Bromodichloromethane       114       70-130         cis-1,3-Dichloropropene       112       70-130         4-Methyl-2-pentanone       115       70-130         trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       105       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	2,2,4-Trimethylpentane	105	70-130
1,4-Dioxane       109       70-130         Bromodichloromethane       114       70-130         cis-1,3-Dichloropropene       112       70-130         4-Methyl-2-pentanone       115       70-130         trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Heptane	118	70-130
Bromodichloromethane       114       70-130         cis-1,3-Dichloropropene       112       70-130         4-Methyl-2-pentanone       115       70-130         trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         1,3-Dichlorobenzene       102       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	1,2-Dichloropropane	113	70-130
cis-1,3-Dichloropropene       112       70-130         4-Methyl-2-pentanone       115       70-130         trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	1,4-Dioxane	109	70-130
4-Methyl-2-pentanone       115       70-130         trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         1,2-Dichlorobenzene       102       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Bromodichloromethane	114	70-130
trans-1,3-Dichloropropene       104       70-130         2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         1,2-Dichlorobluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	cis-1,3-Dichloropropene	112	70-130
2-Hexanone       107       70-130         Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	4-Methyl-2-pentanone	115	70-130
Dibromochloromethane       112       70-130         Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	trans-1,3-Dichloropropene	104	70-130
Chlorobenzene       108       70-130         Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	2-Hexanone	107	70-130
Styrene       110       70-130         Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Dibromochloromethane	112	70-130
Bromoform       117       70-130         Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Chlorobenzene	108	70-130
Cumene       111       70-130         Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Styrene	110	70-130
Propylbenzene       109       70-130         4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Bromoform	117	70-130
4-Ethyltoluene       111       70-130         1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Cumene	111	70-130
1,3,5-Trimethylbenzene       110       70-130         1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	Propylbenzene		70-130
1,2,4-Trimethylbenzene       105       70-130         1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	4-Ethyltoluene	111	70-130
1,3-Dichlorobenzene       102       70-130         alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	1,3,5-Trimethylbenzene	110	70-130
alpha-Chlorotoluene       112       70-130         1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130			
1,2-Dichlorobenzene       107       70-130         1,2,4-Trichlorobenzene       88       70-130	1,3-Dichlorobenzene	102	70-130
1,2,4-Trichlorobenzene 88 70-130	alpha-Chlorotoluene		
	1,2-Dichlorobenzene	107	70-130
Hexachlorobutadiene 105 70-130	1,2,4-Trichlorobenzene		70-130
	Hexachlorobutadiene	105	70-130

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable** 

Surrogates %Recovery Limits



4-Bromofluorobenzene

# Client Sample ID: LCS Lab ID#: 1610390-06A

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102603 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 08:32 AM

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	105	70-130

101

70-130



# Client Sample ID: LCSD Lab ID#: 1610390-06AA

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102604 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 09:21 AM

Compound	%Recovery	Method Limits	
1,3-Butadiene	106	70-130	
Bromomethane	112	70-130	
Freon 11	106	70-130	
Ethanol	70	70-130	
Freon 113	104	70-130	
Acetone	107	70-130	
2-Propanol	107	70-130	
Carbon Disulfide	95	70-130	
3-Chloropropene	102	70-130	
Methylene Chloride	103	70-130	
Hexane	110	70-130	
2-Butanone (Methyl Ethyl Ketone)	103	70-130	
Tetrahydrofuran	110	70-130	
Cyclohexane	107	70-130	
2,2,4-Trimethylpentane	105	70-130	
Heptane	114	70-130	
1,2-Dichloropropane	111	70-130	
1,4-Dioxane	107	70-130	
Bromodichloromethane	112	70-130	
cis-1,3-Dichloropropene	110	70-130	
4-Methyl-2-pentanone	114	70-130	
trans-1,3-Dichloropropene	105	70-130	
2-Hexanone	107	70-130	
Dibromochloromethane	112	70-130	
Chlorobenzene	107	70-130	
Styrene	110	70-130	
Bromoform	116	70-130	
Cumene	110	70-130	
Propylbenzene	108	70-130	
4-Ethyltoluene	110	70-130	
1,3,5-Trimethylbenzene	109	70-130	
1,2,4-Trimethylbenzene	103	70-130	
1,3-Dichlorobenzene	102	70-130	
alpha-Chlorotoluene	111	70-130	
1,2-Dichlorobenzene	104	70-130	
1,2,4-Trichlorobenzene	84	70-130	
Hexachlorobutadiene	101	70-130	

		Method
Surrogates	%Recovery	Limits
1.2-Dichloroethane-d4	98	70-130



# Client Sample ID: LCSD Lab ID#: 1610390-06AA

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102604 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 09:21 AM

Surrogates	%Recovery	Limits
Toluene-d8	103	70-130
4-Bromofluorobenzene	102	70-130



# Client Sample ID: LCS Lab ID#: 1610390-06B

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102603sim Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 08:32 AM

		Method	
Compound	%Recovery	Limits	
Freon 12	108	70-130	
Freon 114	108	70-130	
Chloromethane	114	70-130	
Vinyl Chloride	113	70-130	
Chloroethane	112	70-130	
1,1-Dichloroethene	95	70-130	
trans-1,2-Dichloroethene	100	70-130	
Methyl tert-butyl ether	104	70-130	
1,1-Dichloroethane	104	70-130	
cis-1,2-Dichloroethene	95	70-130	
Chloroform	98	70-130	
1,1,1-Trichloroethane	104	70-130	
Carbon Tetrachloride	104	60-140	
Benzene	99	70-130	
1,2-Dichloroethane	102	70-130	
Trichloroethene	100	70-130	
Toluene	107	70-130	
1,1,2-Trichloroethane	107	70-130	
Tetrachloroethene	101	70-130	
1,2-Dibromoethane (EDB)	102	70-130	
Ethyl Benzene	111	70-130	
m,p-Xylene	109	70-130	
o-Xylene	110	70-130	
1,1,2,2-Tetrachloroethane	106	70-130	
1,4-Dichlorobenzene	102	70-130	

		Metnoa
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	101	70-130



# Client Sample ID: LCSD Lab ID#: 1610390-06BB

# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: e102604sim Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/26/16 09:21 AM

		Method
Compound	%Recovery	Limits
Freon 12	106	70-130
Freon 114	107	70-130
Chloromethane	112	70-130
Vinyl Chloride	112	70-130
Chloroethane	111	70-130
1,1-Dichloroethene	94	70-130
trans-1,2-Dichloroethene	98	70-130
Methyl tert-butyl ether	103	70-130
1,1-Dichloroethane	104	70-130
cis-1,2-Dichloroethene	94	70-130
Chloroform	98	70-130
1,1,1-Trichloroethane	103	70-130
Carbon Tetrachloride	103	60-140
Benzene	98	70-130
1,2-Dichloroethane	100	70-130
Trichloroethene	99	70-130
Toluene	105	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	100	70-130
1,2-Dibromoethane (EDB)	102	70-130
Ethyl Benzene	109	70-130
m,p-Xylene	106	70-130
o-Xylene	108	70-130
1,1,2,2-Tetrachloroethane	106	70-130
1,4-Dichlorobenzene	101	70-130

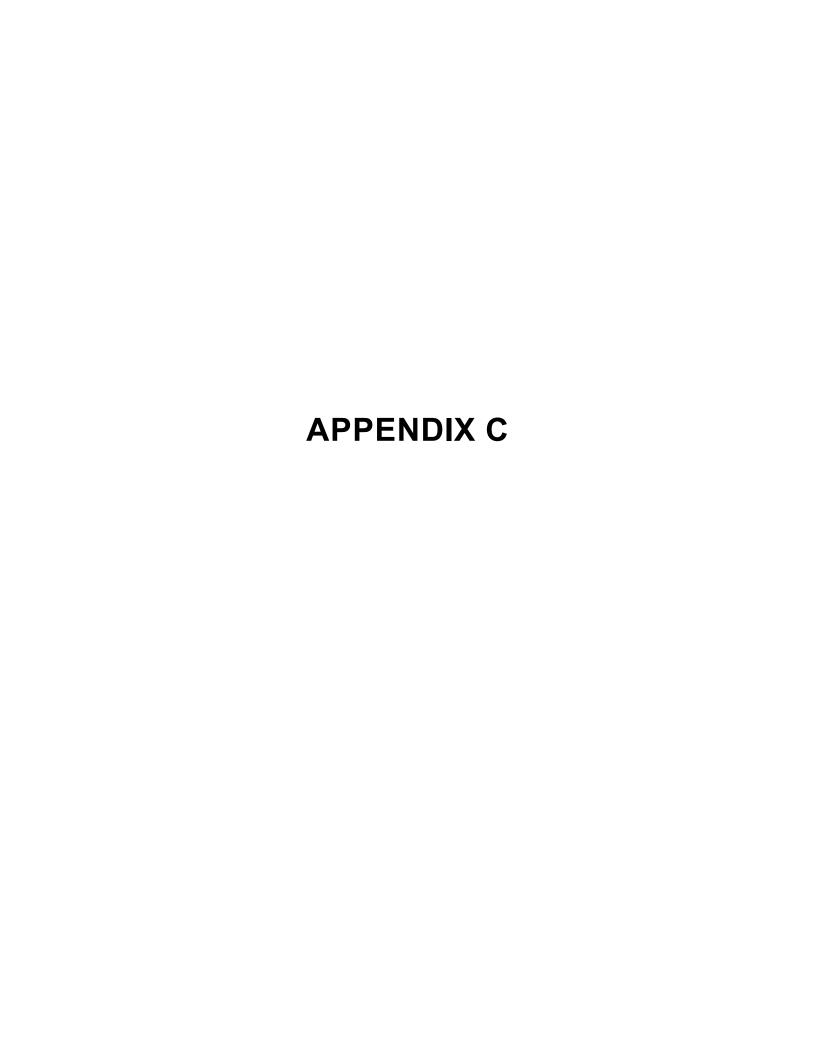
		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	101	70-130



Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of FOLSOM, CA 95630-4719 any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the

(916) 985-1000 FAX (916) 985-1020

and indemnify	Air Toxics Limited adding, or shipping o	against any claim	, demand, or acti	ion, of any kind, related to th	e	Pa	ige	of
W \	seva	Proie	ct Info:	alley cleaners	Turn Around Time:	Lab Use		
Company AGE Email duil	lanverco a	VS(0000 .COV		- / Clamb	Normal	Date:		
Address 837 Show Boity Stucktust		5215 Projec	1# <u>SWISS</u>	Valley Cleane	2 Rush	Press	urization (	Gas:
Phone 259-467-1000 Fax 209-46	~·~ <u>·</u>	Proiec	t Name Juliss	Valley Claver	specify		N <sub>2</sub> H	
	***************************************	Date	Time			ster Pre	ssure/Vac	
Lab I.D. Field Sample I.D. (Location)	Can #		of Collection	Analyses Reques	i	Final	Receipt	Final (psi)
Ula IA-1377 MacArthol	N0600	10-13-	1187	70-15	30	8.5	<del> </del>	(psi)
020 IA-1395 MacArthor	00408	1961340	1053	TA-15	30	Ce Ce		
03a IA-1383 MacArthor	5439212	10-14-16		70-10	78	5		
1003 P(4C)// 1000	Pflotur	10-14-16	100	T0-05	10	\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>		
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rounique of the leading of the lead of the	colved by. (signa	luiej Dale/Hil	16					
Lab Shipper Name Air Bill #	Т	emp (°C)	Condition	Custody Se	eals Intact?	Work	Order #	
Use On Trac		NA	Grood	Yes No	o (None	16	10390	<u>5</u>
Only	I			Percentage		10	10000	Z





10/26/2016 Mr. Daniel Villanueva Advanced GeoEnvironmental 837 Shaw Road

Stockton CA 95215

Project Name: Swiss Valley Cleaners

Project #:

Workorder #: 1610316

Dear Mr. Daniel Villanueva

The following report includes the data for the above referenced project for sample(s) received on 10/14/2016 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Rachel Selenis at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Rachel Selenis

**Project Manager** 



#### WORK ORDER #: 1610316

Work Order Summary

CLIENT: Mr. Daniel Villanueva BILL TO: Mr. Daniel Villanueva

Advanced GeoEnvironmental Advanced GeoEnvironmental

837 Shaw Road Stockton, CA 95215 Stockton, CA 95215

PHONE: 209-467-1006 P.O. #

FAX: 209-467-1118 PROJECT # Swiss Valley Cleaners

**DATE RECEIVED:** 10/14/2016 **CONTACT:** Rachel Selenis **DATE COMPLETED:** 10/26/2016

RECEIPT **FINAL** FRACTION# **NAME** TEST VAC./PRES. **PRESSURE** 01A SS-2 TO-15 3.1 "Hg 15.3 psi 8 "Hg 02A SS-3 TO-15 14.6 psi 2.6 "Hg SS-4 TO-15 14.9 psi 03A 04A Lab Blank TO-15 NA NA 05A **CCV** TO-15 NA NA TO-15 06A LCS NA NA 06AA **LCSD** TO-15 NA NA

	Meide Mayor	
CERTIFIED BY:	0 00	DATE: 10/26/16

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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#### LABORATORY NARRATIVE EPA Method TO-15 Advanced GeoEnvironmental Workorder# 1610316

Three 1 Liter Summa Canister samples were received on October 14, 2016. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

#### **Receiving Notes**

There were no receiving discrepancies.

# **Analytical Notes**

Dilution was performed on samples SS-2, SS-3 and SS-4 due to the presence of high level target species.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

#### **Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

- B Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
  - J Estimated value.
  - E Exceeds instrument calibration range.
  - S Saturated peak.
  - Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
  - UJ- Non-detected compound associated with low bias in the CCV
  - N The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



# **Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN**

Client Sample ID: SS-2 Lab ID#: 1610316-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	23	32	56	79
Tetrachloroethene	5.7	2200	39	15000
Client Sample ID: SS-3				
Lab ID#: 1610316-02A				
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	14	3000	92	20000
Client Sample ID: SS-4				
Lab ID#: 1610316-03A				
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	7.4	2800	50	19000



# Client Sample ID: SS-2 Lab ID#: 1610316-01A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102522 Date of Collection: 10/13/16 10:22:00 A
Dil. Factor: 11.4 Date of Analysis: 10/25/16 11:53 PM

Dil. Factor:	11.4	Date of Analysis: 10/25/16 11:53 PM		
	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Freon 12	5.7	Not Detected	28	Not Detected
Freon 114	5.7	Not Detected	40	Not Detected
Chloromethane	57	Not Detected	120	Not Detected
Vinyl Chloride	5.7	Not Detected	14	Not Detected
1,3-Butadiene	5.7	Not Detected	13	Not Detected
Bromomethane	57	Not Detected	220	Not Detected
Chloroethane	23	Not Detected	60	Not Detected
Freon 11	5.7	Not Detected	32	Not Detected
Ethanol	23	Not Detected	43	Not Detected
Freon 113	5.7	Not Detected	44	Not Detected
1,1-Dichloroethene	5.7	Not Detected	23	Not Detected
Acetone	57	Not Detected	140	Not Detected
2-Propanol	23	32	56	79
Carbon Disulfide	23	Not Detected	71	Not Detected
3-Chloropropene	23	Not Detected	71	Not Detected
Methylene Chloride	57	Not Detected	200	Not Detected
Methyl tert-butyl ether	23	Not Detected	82	Not Detected
trans-1,2-Dichloroethene	5.7	Not Detected	22	Not Detected
Hexane	5.7	Not Detected	20	Not Detected
1,1-Dichloroethane	5.7	Not Detected	23	Not Detected
2-Butanone (Methyl Ethyl Ketone)	23	Not Detected	67	Not Detected
cis-1,2-Dichloroethene	5.7	Not Detected	22	Not Detected
Tetrahydrofuran	5.7	Not Detected	17	Not Detected
Chloroform	5.7	Not Detected	28	Not Detected
1,1,1-Trichloroethane	5.7	Not Detected	31	Not Detected
Cyclohexane	5.7	Not Detected	20	Not Detected
Carbon Tetrachloride	5.7	Not Detected	36	Not Detected
2,2,4-Trimethylpentane	5.7	Not Detected	27	Not Detected
Benzene	5.7	Not Detected	18	Not Detected
1,2-Dichloroethane	5.7	Not Detected	23	Not Detected
Heptane	5.7	Not Detected	23	Not Detected
Trichloroethene	5.7	Not Detected	31	Not Detected
1,2-Dichloropropane	5.7	Not Detected	26	Not Detected
1,4-Dioxane	23	Not Detected	82	Not Detected
Bromodichloromethane	5.7	Not Detected	38	Not Detected
cis-1,3-Dichloropropene	5.7	Not Detected	26	Not Detected
4-Methyl-2-pentanone	5.7	Not Detected	23	Not Detected
Toluene	5.7	Not Detected	21	Not Detected
trans-1,3-Dichloropropene	5.7	Not Detected	26	Not Detected
1,1,2-Trichloroethane	5.7	Not Detected	31	Not Detected
Tetrachloroethene	5.7	2200	39	15000
2-Hexanone	23	Not Detected	93	Not Detected



# Client Sample ID: SS-2 Lab ID#: 1610316-01A

#### EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102522 Date of Collection: 10/13/16 10:22:00 A
Dil. Factor: 11.4 Date of Analysis: 10/25/16 11:53 PM

	* * * * * * * * * * * * * * * * * * * *	Date of Analysis: 10/20/10 11:00 1 iii		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.7	Not Detected	48	Not Detected
1,2-Dibromoethane (EDB)	5.7	Not Detected	44	Not Detected
Chlorobenzene	5.7	Not Detected	26	Not Detected
Ethyl Benzene	5.7	Not Detected	25	Not Detected
m,p-Xylene	5.7	Not Detected	25	Not Detected
o-Xylene	5.7	Not Detected	25	Not Detected
Styrene	5.7	Not Detected	24	Not Detected
Bromoform	5.7	Not Detected	59	Not Detected
Cumene	5.7	Not Detected	28	Not Detected
1,1,2,2-Tetrachloroethane	5.7	Not Detected	39	Not Detected
Propylbenzene	5.7	Not Detected	28	Not Detected
4-Ethyltoluene	5.7	Not Detected	28	Not Detected
1,3,5-Trimethylbenzene	5.7	Not Detected	28	Not Detected
1,2,4-Trimethylbenzene	5.7	Not Detected	28	Not Detected
1,3-Dichlorobenzene	5.7	Not Detected	34	Not Detected
1,4-Dichlorobenzene	5.7	Not Detected	34	Not Detected
alpha-Chlorotoluene	5.7	Not Detected	30	Not Detected
1,2-Dichlorobenzene	5.7	Not Detected	34	Not Detected
1,2,4-Trichlorobenzene	23	Not Detected	170	Not Detected
Hexachlorobutadiene	23	Not Detected	240	Not Detected
TPH ref. to Gasoline (MW=100)	570	Not Detected	2300	Not Detected

# Container Type: 1 Liter Summa Canister

••		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	104	70-130	
1,2-Dichloroethane-d4	88	70-130	
4-Bromofluorobenzene	96	70-130	



# Client Sample ID: SS-3 Lab ID#: 1610316-02A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102532 Date of Collection: 10/13/16 10:48:00 A
Dil. Factor: 27.2 Date of Analysis: 10/26/16 08:11 AM

DII. Factor.	21.2	Date	OI Alialysis. 10/2	0/10 00.11 AW
_	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Freon 12	14	Not Detected	67	Not Detected
Freon 114	14	Not Detected	95	Not Detected
Chloromethane	140	Not Detected	280	Not Detected
Vinyl Chloride	14	Not Detected	35	Not Detected
1,3-Butadiene	14	Not Detected	30	Not Detected
Bromomethane	140	Not Detected	530	Not Detected
Chloroethane	54	Not Detected	140	Not Detected
Freon 11	14	Not Detected	76	Not Detected
Ethanol	54	Not Detected	100	Not Detected
Freon 113	14	Not Detected	100	Not Detected
1,1-Dichloroethene	14	Not Detected	54	Not Detected
Acetone	140	Not Detected	320	Not Detected
2-Propanol	54	Not Detected	130	Not Detected
Carbon Disulfide	54	Not Detected	170	Not Detected
3-Chloropropene	54	Not Detected	170	Not Detected
Methylene Chloride	140	Not Detected	470	Not Detected
Methyl tert-butyl ether	54	Not Detected	200	Not Detected
trans-1,2-Dichloroethene	14	Not Detected	54	Not Detected
Hexane	14	Not Detected	48	Not Detected
1,1-Dichloroethane	14	Not Detected	55	Not Detected
2-Butanone (Methyl Ethyl Ketone)	54	Not Detected	160	Not Detected
cis-1,2-Dichloroethene	14	Not Detected	54	Not Detected
Tetrahydrofuran	14	Not Detected	40	Not Detected
Chloroform	14	Not Detected	66	Not Detected
1,1,1-Trichloroethane	14	Not Detected	74	Not Detected
Cyclohexane	14	Not Detected	47	Not Detected
Carbon Tetrachloride	14	Not Detected	86	Not Detected
2,2,4-Trimethylpentane	14	Not Detected	64	Not Detected
Benzene	14	Not Detected	43	Not Detected
1,2-Dichloroethane	14	Not Detected	55	Not Detected
Heptane	14	Not Detected	56	Not Detected
Trichloroethene	14	Not Detected	73	Not Detected
1,2-Dichloropropane	14	Not Detected	63	Not Detected
1,4-Dioxane	54	Not Detected	200	Not Detected
Bromodichloromethane	14	Not Detected	91	Not Detected
cis-1,3-Dichloropropene	14	Not Detected	62	Not Detected
• •	14	Not Detected	62 56	Not Detected
4-Methyl-2-pentanone	14	Not Detected	50 51	Not Detected
Toluene	14	Not Detected	62	Not Detected
trans-1,3-Dichloropropene	14	Not Detected	62 74	
1,1,2-Trichloroethane				Not Detected
Tetrachloroethene	14	3000	92	20000
2-Hexanone	54	Not Detected	220	Not Detected



# Client Sample ID: SS-3 Lab ID#: 1610316-02A

#### EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102532 Date of Collection: 10/13/16 10:48:00 A
Dil. Factor: 27.2 Date of Analysis: 10/26/16 08:11 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	14	Not Detected	120	Not Detected
1,2-Dibromoethane (EDB)	14	Not Detected	100	Not Detected
Chlorobenzene	14	Not Detected	63	Not Detected
Ethyl Benzene	14	Not Detected	59	Not Detected
m,p-Xylene	14	Not Detected	59	Not Detected
o-Xylene	14	Not Detected	59	Not Detected
Styrene	14	Not Detected	58	Not Detected
Bromoform	14	Not Detected	140	Not Detected
Cumene	14	Not Detected	67	Not Detected
1,1,2,2-Tetrachloroethane	14	Not Detected	93	Not Detected
Propylbenzene	14	Not Detected	67	Not Detected
4-Ethyltoluene	14	Not Detected	67	Not Detected
1,3,5-Trimethylbenzene	14	Not Detected	67	Not Detected
1,2,4-Trimethylbenzene	14	Not Detected	67	Not Detected
1,3-Dichlorobenzene	14	Not Detected	82	Not Detected
1,4-Dichlorobenzene	14	Not Detected	82	Not Detected
alpha-Chlorotoluene	14	Not Detected	70	Not Detected
1,2-Dichlorobenzene	14	Not Detected	82	Not Detected
1,2,4-Trichlorobenzene	54	Not Detected	400	Not Detected
Hexachlorobutadiene	54	Not Detected	580	Not Detected
TPH ref. to Gasoline (MW=100)	1400	Not Detected	5600	Not Detected

# Container Type: 1 Liter Summa Canister

••		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	103	70-130	
1,2-Dichloroethane-d4	89	70-130	
4-Bromofluorobenzene	97	70-130	



# Client Sample ID: SS-4 Lab ID#: 1610316-03A

#### EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102524 Date of Collection: 10/13/16 11:14:00 A
Dil. Factor: 14.7 Date of Analysis: 10/26/16 12:40 AM

Dil. Factor:	14.7	Date of Analysis: 10/26/16 12:40 A		
	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Freon 12	7.4	Not Detected	36	Not Detected
Freon 114	7.4	Not Detected	51	Not Detected
Chloromethane	74	Not Detected	150	Not Detected
Vinyl Chloride	7.4	Not Detected	19	Not Detected
1,3-Butadiene	7.4	Not Detected	16	Not Detected
Bromomethane	74	Not Detected	280	Not Detected
Chloroethane	29	Not Detected	78	Not Detected
Freon 11	7.4	Not Detected	41	Not Detected
Ethanol	29	Not Detected	55	Not Detected
Freon 113	7.4	Not Detected	56	Not Detected
1,1-Dichloroethene	7.4	Not Detected	29	Not Detected
Acetone	74	Not Detected	170	Not Detected
2-Propanol	29	Not Detected	72	Not Detected
Carbon Disulfide	29	Not Detected	92	Not Detected
3-Chloropropene	29	Not Detected	92	Not Detected
Methylene Chloride	74	Not Detected	260	Not Detected
Methyl tert-butyl ether	29	Not Detected	100	Not Detected
trans-1,2-Dichloroethene	7.4	Not Detected	29	Not Detected
Hexane	7.4	Not Detected	26	Not Detected
1,1-Dichloroethane	7.4	Not Detected	30	Not Detected
2-Butanone (Methyl Ethyl Ketone)	29	Not Detected	87	Not Detected
cis-1,2-Dichloroethene	7.4	Not Detected	29	Not Detected
Tetrahydrofuran	7.4	Not Detected	22	Not Detected
Chloroform	7.4	Not Detected	36	Not Detected
1,1,1-Trichloroethane	7.4	Not Detected	40	Not Detected
Cyclohexane	7.4	Not Detected	25	Not Detected
Carbon Tetrachloride	7.4	Not Detected	46	Not Detected
2,2,4-Trimethylpentane	7.4	Not Detected	34	Not Detected
Benzene	7.4	Not Detected	23	Not Detected
1,2-Dichloroethane	7.4	Not Detected	30	Not Detected
Heptane	7.4	Not Detected	30	Not Detected
Trichloroethene	7.4	Not Detected	40	Not Detected
1,2-Dichloropropane	7.4	Not Detected	34	Not Detected
1,4-Dioxane	29	Not Detected	100	Not Detected
Bromodichloromethane	7.4	Not Detected	49	Not Detected
cis-1,3-Dichloropropene	7.4	Not Detected	33	Not Detected
4-Methyl-2-pentanone	7.4	Not Detected	30	Not Detected
Toluene	7.4	Not Detected	28	Not Detected
trans-1,3-Dichloropropene	7.4	Not Detected	33	Not Detected
1,1,2-Trichloroethane	7.4	Not Detected	40	Not Detected
Tetrachloroethene	7.4	2800	50	19000
2-Hexanone	29	Not Detected	120	Not Detected



# Client Sample ID: SS-4 Lab ID#: 1610316-03A

#### EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102524 Date of Collection: 10/13/16 11:14:00 A
Dil. Factor: 14.7 Date of Analysis: 10/26/16 12:40 AM

		Date of 7tharyold: 10/20/10 12:40 7th		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	7.4	Not Detected	63	Not Detected
1,2-Dibromoethane (EDB)	7.4	Not Detected	56	Not Detected
Chlorobenzene	7.4	Not Detected	34	Not Detected
Ethyl Benzene	7.4	Not Detected	32	Not Detected
m,p-Xylene	7.4	Not Detected	32	Not Detected
o-Xylene	7.4	Not Detected	32	Not Detected
Styrene	7.4	Not Detected	31	Not Detected
Bromoform	7.4	Not Detected	76	Not Detected
Cumene	7.4	Not Detected	36	Not Detected
1,1,2,2-Tetrachloroethane	7.4	Not Detected	50	Not Detected
Propylbenzene	7.4	Not Detected	36	Not Detected
4-Ethyltoluene	7.4	Not Detected	36	Not Detected
1,3,5-Trimethylbenzene	7.4	Not Detected	36	Not Detected
1,2,4-Trimethylbenzene	7.4	Not Detected	36	Not Detected
1,3-Dichlorobenzene	7.4	Not Detected	44	Not Detected
1,4-Dichlorobenzene	7.4	Not Detected	44	Not Detected
alpha-Chlorotoluene	7.4	Not Detected	38	Not Detected
1,2-Dichlorobenzene	7.4	Not Detected	44	Not Detected
1,2,4-Trichlorobenzene	29	Not Detected	220	Not Detected
Hexachlorobutadiene	29	Not Detected	310	Not Detected
TPH ref. to Gasoline (MW=100)	740	Not Detected	3000	Not Detected

# Container Type: 1 Liter Summa Canister

••		Method
Surrogates	%Recovery	Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	96	70-130



# Client Sample ID: Lab Blank Lab ID#: 1610316-04A

# EPA METHOD TO-15 GC/MS FULL SCAN

	Rpt. Limit	Amount	Rpt. Limit	Amount
Dil. Factor:	1.00	Dat	e of Analysis: 10/25	/16 03:17 PM
File Name:	3102509	Dat	e of Collection: NA	

DII. Factor.	1.00	Date	OI Alialysis. 10/2	7/10 03.17 F WI
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 12 Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
			19	
Bromomethane	5.0	Not Detected		Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
	0.50	Not Detected	2.7	Not Detected
1,1,2-Trichloroethane				
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected



# Client Sample ID: Lab Blank Lab ID#: 1610316-04A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	3102509	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/25/16 03:17 PM

	Date 01 / (ilaly 010: 10/20/10 00:17 1 iii		5/ 10 00111 1 III
Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
0.50	Not Detected	4.2	Not Detected
0.50	Not Detected	3.8	Not Detected
0.50	Not Detected	2.3	Not Detected
0.50	Not Detected	2.2	Not Detected
0.50	Not Detected	2.2	Not Detected
0.50	Not Detected	2.2	Not Detected
0.50	Not Detected	2.1	Not Detected
0.50	Not Detected	5.2	Not Detected
0.50	Not Detected	2.4	Not Detected
0.50	Not Detected	3.4	Not Detected
0.50	Not Detected	2.4	Not Detected
0.50	Not Detected	2.4	Not Detected
0.50	Not Detected	2.4	Not Detected
0.50	Not Detected	2.4	Not Detected
0.50	Not Detected	3.0	Not Detected
0.50	Not Detected	3.0	Not Detected
0.50	Not Detected	2.6	Not Detected
0.50	Not Detected	3.0	Not Detected
2.0	Not Detected	15	Not Detected
2.0	Not Detected	21	Not Detected
50	Not Detected	200	Not Detected
	(ppbv)  0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.	(ppbv)         (ppbv)           0.50         Not Detected           0.50         Not Detected	(ppbv)         (ppbv)         (ug/m3)           0.50         Not Detected         4.2           0.50         Not Detected         3.8           0.50         Not Detected         2.3           0.50         Not Detected         2.2           0.50         Not Detected         2.2           0.50         Not Detected         2.1           0.50         Not Detected         5.2           0.50         Not Detected         2.4           0.50         Not Detected         3.0           0.50         Not Detected         3.0 <td< td=""></td<>

		Wethod	
Surrogates	%Recovery	Limits	
Toluene-d8	105	70-130	
1,2-Dichloroethane-d4	92	70-130	
4-Bromofluorobenzene	98	70-130	



# Client Sample ID: CCV Lab ID#: 1610316-05A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102508 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/25/16 02:51 PM

Compound	%Recovery
Freon 12	97
Freon 114	104
Chloromethane	90
Vinyl Chloride	96
1,3-Butadiene	87
Bromomethane	104
Chloroethane	93
Freon 11	96
Ethanol	80
Freon 113	99
1,1-Dichloroethene	97
Acetone	98
2-Propanol	79
Carbon Disulfide	92
3-Chloropropene	93
Methylene Chloride	94
Methyl tert-butyl ether	89
trans-1,2-Dichloroethene	103
Hexane	91
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	105
cis-1,2-Dichloroethene	100
Tetrahydrofuran	92
Chloroform	101
1,1,1-Trichloroethane	95
Cyclohexane	97
Carbon Tetrachloride	100
2,2,4-Trimethylpentane	99
Benzene	105
1,2-Dichloroethane	96
Heptane	98
Trichloroethene	121
1,2-Dichloropropane	105
1,4-Dioxane	100
Bromodichloromethane	104
cis-1,3-Dichloropropene	106
4-Methyl-2-pentanone	81
Toluene	102
trans-1,3-Dichloropropene	101
1,1,2-Trichloroethane	104
Tetrachloroethene	102
2-Hexanone	85



# Client Sample ID: CCV Lab ID#: 1610316-05A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102508 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/25/16 02:51 PM

Compound	%Recovery	
Dibromochloromethane	102	
1,2-Dibromoethane (EDB)	101	
Chlorobenzene	99	
Ethyl Benzene	98	
m,p-Xylene	97	
o-Xylene	98	
Styrene	97	
Bromoform	102	
Cumene	97	
1,1,2,2-Tetrachloroethane	104	
Propylbenzene	98	
4-Ethyltoluene	94	
1,3,5-Trimethylbenzene	95	
1,2,4-Trimethylbenzene	95	
1,3-Dichlorobenzene	101	
1,4-Dichlorobenzene	100	
alpha-Chlorotoluene	103	
1,2-Dichlorobenzene	99	
1,2,4-Trichlorobenzene	108	
Hexachlorobutadiene	111	
TPH ref. to Gasoline (MW=100)	100	

		Metnoa	
Surrogates	%Recovery	Limits	
Toluene-d8	106	70-130	
1,2-Dichloroethane-d4	91	70-130	
4-Bromofluorobenzene	99	70-130	



# Client Sample ID: LCS Lab ID#: 1610316-06A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102504 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/25/16 12:47 PM

		Method
Compound	%Recovery	Limits
Freon 12	96	70-130
Freon 114	104	70-130
Chloromethane	93	70-130
Vinyl Chloride	94	70-130
1,3-Butadiene	83	70-130
Bromomethane	100	70-130
Chloroethane	91	70-130
Freon 11	95	70-130
Ethanol	80	70-130
Freon 113	93	70-130
1,1-Dichloroethene	92	70-130
Acetone	81	70-130
2-Propanol	82	70-130
Carbon Disulfide	78	70-130
3-Chloropropene	85	70-130
Methylene Chloride	90	70-130
Methyl tert-butyl ether	83	70-130
trans-1,2-Dichloroethene	101	70-130
Hexane	87	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	93	70-130
cis-1,2-Dichloroethene	94	70-130
Tetrahydrofuran	90	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	94	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	98	70-130
Benzene	104	70-130
1,2-Dichloroethane	93	70-130
Heptane	96	70-130
Trichloroethene	117	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	99	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	84	70-130
Toluene	99	70-130
trans-1,3-Dichloropropene	97	70-130
1,1,2-Trichloroethane	102	70-130
Tetrachloroethene	100	70-130
2-Hexanone	100	70-130



# Client Sample ID: LCS Lab ID#: 1610316-06A

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102504 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/25/16 12:47 PM

		Method
Compound	%Recovery	Limits
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	96	70-130
m,p-Xylene	97	70-130
o-Xylene	100	70-130
Styrene	105	70-130
Bromoform	103	70-130
Cumene	98	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	98	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	98	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	110	70-130
Hexachlorobutadiene	113	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

		Metnoa	
Surrogates	%Recovery	Limits	
Toluene-d8	105	70-130	
1,2-Dichloroethane-d4	90	70-130	
4-Bromofluorobenzene	101	70-130	



# Client Sample ID: LCSD Lab ID#: 1610316-06AA

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102505 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/25/16 01:11 PM

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	102	70-130 70-130
Chloromethane	91	70-130 70-130
	94	70-130 70-130
Vinyl Chloride	94 84	70-130 70-130
1,3-Butadiene	_	
Bromomethane	99	70-130
Chloroethane	92	70-130
Freon 11	95	70-130
Ethanol	78	70-130
Freon 113	94	70-130
1,1-Dichloroethene	93	70-130
Acetone	81	70-130
2-Propanol	83	70-130
Carbon Disulfide	78	70-130
3-Chloropropene	84	70-130
Methylene Chloride	90	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	102	70-130
Hexane	86	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	97	70-130
cis-1,2-Dichloroethene	96	70-130
Tetrahydrofuran	88	70-130
Chloroform	95	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	95	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	97	70-130
Benzene	102	70-130
1,2-Dichloroethane	93	70-130
Heptane	98	70-130
Trichloroethene	116	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	100	70-130
Bromodichloromethane	104	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	86	70-130
Toluene	99	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	100	70-130
Tetrachloroethene	100	70-130
	97	70-130
2-Hexanone	31	70-130



# Client Sample ID: LCSD Lab ID#: 1610316-06AA

# EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 3102505 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 10/25/16 01:11 PM

		Method
Compound	%Recovery	Limits
Dibromochloromethane	99	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	96	70-130
o-Xylene	98	70-130
Styrene	104	70-130
Bromoform	103	70-130
Cumene	97	70-130
1,1,2,2-Tetrachloroethane	103	70-130
Propylbenzene	99	70-130
4-Ethyltoluene	96	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	99	70-130
1,3-Dichlorobenzene	100	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	109	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	113	70-130
Hexachlorobutadiene	114	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	106	70-130	
1,2-Dichloroethane-d4	89	70-130	
4-Bromofluorobenzene	100	70-130	



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Project Manager Daniel Villanneum			Project Info:				Turn Arou Time:	0.0000000000000000000000000000000000000	Lab Use Only		
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