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Alameda County Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

SUBJECT: CRAWL SPACE AIR SAMPLING REPORT CERTIFICATION ACEH Case # RO 0000357 Snow Cleaners 2678 Coolidge Avenue Oakland, CA

Dear Mr. Wickham:

You will find enclosed one copy of the following document prepared by P&D Environmental Inc.

Crawl Space Air Sampling Report dated May 9, 2016 (document 0298.R19).

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned work plan for the subject site is true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to call me at (800) 818-7669.

Cordially, Snow Cleaners, Inc.

el m term

Harold Turner President

0298.L100

"SERVING THE CLEANING INDUSTRY FOR OVER SO YEARS"

P&D ENVIRONMENTAL, INC.

55 Santa Clara Ave, Suite 240 Oakland, CA 94610 (510) 658-6916

May 9, 2016 Report 0298.R19

Mr. Harold Turner Snow Cleaners, Inc. 2678 Coolidge Avenue Oakland, CA

SUBJECT: CRAWL SPACE AIR SAMPLING REPORT (CS1 THROUGH CS3 AND AA1) ACDEH Case # RO 0000357 Snow Cleaners 2678 Coolidge Avenue Oakland, CA

Dear Mr. Turner:

P&D Environmental, Inc. (P&D) has prepared this report documenting the collection of crawl space air samples CS1 and CS2 at 3320 Davis Street and CS3 at 2682 Coolidge Avenue and ambient air sample Ambient 1 at 3319 Davis Street in Oakland, California on April 26, 2016. The crawl space and ambient air samples were collected during an 8-hour period during the day. This work was performed in response to a letter from the Alameda County Department of Environmental Health (ACDEH) dated January 20, 2016 requesting that the samples be collected in accordance with procedures set forth in P&D's Subsurface Investigation Work Plan dated November 24, 2009 (document 0298.W4).

A Site Location Map (Figure 1) and a Site Vicinity Map Detail showing the sample collection locations (Figure 2) are attached with this report. All work was performed under the direct supervision of a California professional geologist.

BACKGROUND

Underground Storage Tanks (USTs) associated with the former dry cleaning facility were removed and associated limited excavation of the UST pit was performed by others in 1990. In January, 1994 two groundwater monitoring wells (MW1 and MW2) were installed by others at offsite locations in Davis Street near the former UST pit. P&D subsequently preformed a review of available files for the site, installed an absorbent sock in well MW2 as an interim remedial measure for collection of free product, and collected water samples from the wells on February 20, 2003. Documentation of the well sampling is provided in P&D's March 10, 2003 Groundwater Monitoring and Sampling Report (document 0298.R1).

P&D subsequently collected groundwater grab samples, creek water samples, soil gas samples, and oversaw the installation of groundwater monitoring wells MW3 and MW4 at offsite locations on September 9, 2008. A detailed discussion of the investigation including multiple figures showing

the extent of impacted groundwater and geologic cross sections A-A' through G-G' are provided in P&D's Subsurface Investigation Report dated August 19, 2009 (document 0298.R6).

Documentation of the collection of additional soil gas samples and the collection of crawl space air samples is provided in P&D's March 22, 2010 Soil Gas and Crawl Space Air Investigation Report (document 0298.R8) and P&D's September 15, 2010 Crawl Space Air Investigation Report (document 0298.R10). On September 27 through 29, 2010 P&D oversaw the installation of dual-phase extraction wells DP1 through DP4, and vapor extraction wells VE1 and VE2. The initial monitoring and sampling of the new wells was performed on October 15, 2010 in conjunction with the periodic monitoring and sample results, the report included revised figures showing the extent of petroleum and volatile organic compounds (VOCs) in soil and groundwater. Documentation of the well installation is provided in P&D's Well Installation Report dated December 2, 2010 (document 0298.R11).

On December 13, 2010 a vapor extraction feasibility test was performed at well DP1. During 2011 a discharge permit was obtained from East Bay Municipal Utility District (EBMUD), a groundwater extraction pump was installed in well DP1, and groundwater extraction feasibility testing was performed beginning May 23, 2011 through June 2, 2011 and again from June 8 through June 30, 2011. Documentation of the vapor extraction and groundwater extraction feasibility testing is provided in P&D's April 16, 2012 Vapor Extraction and Groundwater Extraction Feasibility Test Report (document 0298.R13).

Groundwater extraction was resumed on August 28, 2012 and continued until March 21, 2013. During the December 12 and 13, 2012 well sampling event, effervescing was observed in some of the groundwater samples, and the samples were subsequently analyzed for dissolved gases. Documentation of the groundwater extraction and semi-annual well sampling is provided in P&D's March 25, 2013 Semi-Annual Groundwater Monitoring, Sampling and Remediation Status Report (document 0298.R16). Documentation of groundwater well monitoring and sampling on May 14, 2013 is provided in P&D's Groundwater Monitoring and Sampling Report (document 0298.R17).

Following receipt of an Authority To Construct dated June 3, 2013 from the Bay Area Air Quality Management District (BAAQMD) a Soil Vapor Extraction (SVE) system was constructed at the site with initial start up of the SVE system in January 2014 and subsequent restarting and testing of the system in February 2014. Based on elevated vapor concentrations the SVE system operation was discontinued at the end of February 2014. Documentation of the SVE system operation in January and February 2014 and the results of groundwater sampling events that occurred in November and December 2013, June 2014 and July 2015 are provided in P&D's January 18, 2016 Remediation Progress and Groundwater Monitoring Report (document 0298.R18).

Following receipt of a January 20, 2016 letter from the ACDEH that commented on P&D's January 18, 2016 report, P&D restarted the groundwater extraction system on February 1, 2016 with continuous operation of the groundwater treatment system beginning on April 11, 2016. Similarly, the SVE system was restarted on May 6, 2016 with continuous operation of the SVE system beginning on May 11, 2016.

FIELD ACTIVITIES

The building construction at 3320 Davis Street and at 2682 Coolidge Avenue where crawl space air samples were collected on April 26, 2016 (see Figure 2) is not slab on grade. Both structures were observed to have crawl spaces with no visible means of access to the crawl space other than through mesh-covered ventilation holes measuring approximately 4 inches tall and 12 inches long. On April 26, 2016 two air samples (CS1 and CS2) were collected from the crawl space at 3320 Davis Street and one air sample (CS3) was collected from the crawl space at 2682 Coolidge Avenue at locations shown on Figure 2 using procedures described below. In addition, one duplicate crawl space air sample (CS3-DUP) was collected using a stainless steel sampling tee at location CS3, and one ambient air sample was collected with the flow controller intake at a height of approximately 4.5 feet above the ground surface on the rear porch of the property located at 3319 Davis Street, Oakland, California (see Figure 2).

The crawl space air samples and the ambient air sample were collected during business hours into SIM-certified 6-liter Summa canisters equipped with SIM-certified 8-hour flow controllers. The duplicate sample was collected with a SIM-certified stainless steel tee

The building width at 3320 Davis Street is approximately 30 feet, and the building width at 2682 Coolidge Avenue in the vicinity of SG3 is approximately 12 feet wide. A ¹/₄-inch outside diameter polyethylene tube was secured with wire to the end of a steel rod and the steel rod was inserted through a crawl space vent into the crawl space at each sampling location so that the end of the tube was located at each of the crawl space air sample collection locations shown on Figure 2. Following placement of the rod and tubing beneath the building, an air pump was used to purge air at 20 L/min. from each tube for approximately one minute. The end of each tube was then connected to the flow controller inlet and the valve to the Summa canister was then opened for each of the samples.

For the duplicate sample, the end of the tube was connected to the stainless steel tee. After approximately 8 hours, the valves to the Summa canisters were closed, and the Summa canisters were stored in a box and promptly shipped to the laboratory for extraction and analysis. Chain of custody procedures were observed for all sample handling.

WEATHER

Weather data, including precipitation and barometric pressure for the date of crawl space and ambient air sample collection (April 26, 2016), and for the two weeks preceding and twelve days following the sample collection event are provided in Appendix B. Review of the weather data shows that approximately 0.12 inches of precipitation occurred during the 5 days preceding the sample collection event.

The weather station is located between E 25th Street and Wakefield Avenue northwest of the intersection of E 25th Street and 23rd Avenue in Oakland at an elevation of 150 feet above sea level, approximately 0.7 miles to the west-northwest of the subject site. The subject site is located at an elevation of approximately 135 feet above sea level. An internet link to the weather station information is provided in Appendix B.

GEOLOGY AND HYDROGEOLOGY

A detailed discussion of the site geology and hydrogeology is provided in P&D's January 18, 2016 Remediation Progress and Groundwater Monitoring Report (document 0298.R18).

LABORATORY ANALYSIS

The crawl space and ambient air samples were analyzed at Eurofins Air Toxics, Limited in Folsom, California (Air Toxics). The samples were analyzed for Total Petroleum Hydrocarbons as Stoddard solvent (TPH-SS) using EPA Method TO-3. Additionally, the samples were analyzed for methyl-tert-butyl ether (MTBE), benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, and the Haolgenated Volatile Organic Compounds (HVOCs) Tetrachloroethene (PCE), Trichloroethene (TCE), cis-1,2-Dichloroethene (cis-1,2-DCE), trans-1,2-Dichloroethene (trans-1,2-DCE), and vinyl chloride using EPA Method TO-15.

The crawl space and associated ambient air sample results are summarized in Table 1 and copies of all of the laboratory analytical reports and chain of custody documentation are attached with this report as Appendix C. Historical crawl space and associated ambient air sample results are also included in Table 1.

RISK AND HAZARD ANALYSIS

The only complete pathway for contaminant exposure at the subject site is considered to be potential vapor intrusion from soil gas to crawl space air. Risk analysis is the evaluation of the predicted increased incidence of cancer resulting from exposure to Chemicals of Potential Concern (COPCs), and is reported for each COPC as the incremental carcinogenic risk. Hazard analysis is the evaluation of the predicted increased non-cancer adverse health effects resulting from exposure to COPCs, and is reported for each COPC as the hazard quotient. In addition, cumulative incremental carcinogenic risk (the total of the risks posed by all of the COPCs in a sample when all of the individual COPC risks are added together) and hazard indices (the total of the hazards posed by all of the COPCs in a sample when all of the individual COPC hazards are added together) were also calculated for all detected compounds for each sample.

The cumulative incremental risk is calculated as the increased number of cases of cancer that might develop in a population of one million people in addition to the background risk of Americans developing cancer. According to the American Cancer Society the background risk for an American eventually developing cancer during their life time is one chance in two (also expressed as 500,000 per million, or expressed as 5E-01). In determining what is an acceptable level of risk, the California Department of Toxic Substances Control (DTSC) has determined that lifetime incremental cumulative cancer risks posed by a site should not exceed 1 per million without further evaluation. The DTSC recommends that activities to reduce exposure to COPCs be evaluated when the cumulative risk exceeds 100 per million. The DTSC also recommends that further action be evaluated when the hazard quotient exceeds 1. These recommendations are based on conservative (erring on the side of caution) assumptions in determining actions associated with calculated risk or hazard.

The incremental carcinogenic risk and hazard quotient were calculated for each detected compound for each of the indoor and ambient air samples using equations for health risk-based screening levels considering a single chemical for indoor air inhalation provided in section 3.2.3 of the Interim Final (Revision 2) February 2016 San Francisco Bay RWQCB User's Guide: Derivation and Application of Environmental Screening Levels (the User's Guide). The Inhalation Unit Risk factor (IUR) value used for risk calculation and the Reference Concentration (RfC) value used for hazard calculation were obtained from the February 2016 SFRWQCB User's Guide (Revision 2) Table IP-2 Toxicity Values, and were verified to be consistent with the DTSC Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note Number 3 dated January 2016 and the US Environmental Protection Agency Region 9 Regional Screening Level indoor air values for compounds that were detected that are not listed in HHRA Note Number 3.

TPH-SS is not considered to be a carcinogen, and for this reason there is no IUR for TPH-G, and risk is not calculated for TPH-SS. In addition, DTSC does not provide a TPH-SS RfC for hazard evaluation. The TPH-SS RfC of 130 μ g/m3 that was used for calculation of the TPH-SS hazard was obtained from the February 2016 (Revision 2) RWQCB User's Guide Table IP-2 Toxicity Values.

Default exposure values provided in the February 2016 SFRWQCB User's Guide Table IP-3 for a residential exposure scenario of

- Exposure time of 24 hours per day,
- Exposure frequency of 350 days per year, and
- Exposure duration for 26 years

and default exposure values provided in the DTSC HERO Vapor Intrusion Screening Model for Soil Gas VLOOKUP Table (last updated December 2014) of

- Averaging time for carcinogens of 70 years, and
- Averaging time for non-carcinogens of 26 years

were used for evaluation of all of the crawl space air and ambient air samples. The crawl space air and associated ambient air incremental risk calculation results are provided in Table 2A, and the crawl space and associated ambient air hazard quotient calculation results are provided in Table 2B. The crawl space and associated ambient air cumulative incremental carcinogenic risk and hazard index results are summarized in Table 2C. Historical crawl space air sample and associated ambient air cumulative incremental carcinogenic risk and hazard index results are also included in the tables. The historical risk and hazard have been recalculated on the attached tables using the most current values for toxicity and exposure.

DISCUSSION AND RECOMMENDATIONS

Review of Table 1 shows that TPH-SS was detected in all of the crawl space air samples that were collected on April 26, 2016 and that TPH-SS was not detected in the ambient air sample. Review of Table 1 also shows that TCE was only detected in crawl space air sample CS2 at a concentration of 0.38 ug/m³, and that PCE was detected in crawl space air samples CS1 and CS2 at concentrations of 0.26 and 0.99 ug/m³, respectively.

Page 5 of 8 **P&D ENVIRONMENTAL, INC.**

Review of Table 2C shows that the calculated incremental risk for the April 26, 2016 crawl space air sampling event is greater than the calculated incremental risk associated with the ambient air sample. The calculated incremental risk associated with the most recent air sampling event on April 26, 2016 is 12.4 in a million at location CS1, is 14.0 in a million at location CS2, and is 13.3 in a million at location CS3 (CS3-DUP is 13.6 in a million, see Table 2C). By comparison, the calculated incremental risk for the ambient air sample is 5.0 in a million. Review of Table 2C also shows that the hazard identified for crawl space air is more than 1.0 at all crawl space air sample locations. None of the calculated risk values for any of the sampling events have exceeded 100 in a million (see Table 2C).

Review of Tables 2A and 2B shows that the risk and hazard associated with locations CS1 through CS3 is predominantly related to benzene and naphthalene. Similarly, review of Table 2A shows that the calculated risk associated with PCE in sample CS1 and TCE in sample CS2 are each less than 1 in a million. The calculated risk associated with PCE in sample CS2 is 2.08 in a million. Review of Table 2B shows that almost all of the hazard in all of the crawl space air samples is associated with the detected TPH-SS.

Naphthalene and benzene have both historically been detected in groundwater at and near the subject site at concentrations exceeding RWQCB February 2016 (Revision 2) Table GW-3 Groundwater Vapor Intrusion Human Health Risk Screening Levels for deep groundwater for a fine-coarse scenario with a residential exposure scenario. Historical evaluation of soil gas samples at a limited number of locations (SG19 through SG23) did not reveal the presence of naphthalene, and similarly naphthalene has not been detected in historical crawl space air samples. Benzene has historically been detected in both soil gas and crawl space air samples. TPH-SS has historically been detected in groundwater , soil gas, and crawl space air samples.

The detected TCE concentration of 0.38 ug/m³ in crawl space air sample CS2 does not exceed the TCE Accelerated Response Action Level (ARAL) for a residential exposure scenario as identified in the RWQCB October 16, 2014 Draft Interim Framework for Assessment of Vapor Intrusion at TCE-Contaminated Sites in the San Francisco Bay Region. The ARAL is intended to be protective of pregnant women based on a hazard quotient of 1 for protection of developing fetuses.

Based on the sample results P&D recommends that the SVE system be increased and the same crawl spaces be re-sampled one month after the SVE system vacuum is increased. P&D also recommends that the sample results be provided to the property owners where the crawl space air samples were collected.

DISTRIBUTION

A copy of this report will be uploaded to the ACDEH and GeoTracker databases.

LIMITATIONS

This report was prepared solely for the use of Snow Cleaners, Inc. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner,

regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely, P&D Environmental, Inc. Paul H. King Professional Geologist #5901 Expires: 12/31/17

Attachments:

 Table 1 - Summary of Crawl Space and Ambient Air Sample Results

Table 2A - Crawl Space and Ambient Air Risk Calculation Results

Table 2B - Crawl Space and Ambient Air Hazard Calculation Results

Table 2C - Crawl Space and Ambient Air Risk and Hazard Calculation Results Summary

Figure 1 - Site Location Map

Figure 2 - Site Vicinity Map Detail Showing Sample Collection Locations

Appendix A - Crawl Space Air Sampling Data Sheet

Appendix B - Weather Information

Appendix C - Laboratory Analytical Reports and Chain of Custody Documentation

PHK/ sjc 0298.R19

TABLES

Table 1 Summary of Crawl Space and Ambient Air Sample Results

Sample ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans1,2DCE	Vinyl Chloride	TPH-SS	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	m,p-Xylenes	o-Xylenes	Naphthalene
CS1	4/26/2016	0.26	ND<0.17	ND<0.12	ND<0.62	ND<0.040	3,500			0.51	2.4	0.82	1.7	0.78	0.48, a
CS1	2/19/2010	0.38	0.44	ND<0.12	ND<0.60	ND<0.039	310			4.7	48	9.4	36	11	ND<4.0
CS1-Lab Duplicate		NA	NA	NA	NA	NA	280								
CS2	4/26/2016	0.99	0.38	ND<0.12	ND<0.60	ND<0.039	1,800			0.55	3.0	0.78	1.7	0.79	0.41, a
CS2	2/19/2010	1.2	3.2	ND<0.13	ND<0.64	ND<0.041	300			5.3	50	9.3	35	10	ND<4.2
CS3	4/26/2016	ND<0.22	ND<0.17	ND<0.13	ND<0.64	ND<0.041	5,800			0.41	1.6	0.58	1.4	0.61	0.71, a
CS3	2/19/2010	0.23	ND<0.17	ND<0.12	ND<0.63	ND<0.040	ND<230			0.65	3.7	0.77	3.6	1.0	ND<4.1
CS3-DUP	4/26/2016	ND<0.22	ND<0.17	ND<0.13	ND<0.64	ND<0.041	5,000			0.42	1.5	0.59	1.4	0.62	0.72, a
CS3-DUP	2/19/2010	ND<0.21	ND<0.17	ND<0.12	ND<0.63	ND<0.040	ND<230			0.64	3.9	0.79	3.7	1.0	ND<4.1
CS4	8/9/2010	ND<0.22	1.3	ND<0.13	ND<0.65	ND<0.042		570	ND<0.59	1.8	4.0	0.37	1.0	0.56	ND<4.3
CS5	8/9/2010	0.36	1.7	ND<0.12	ND<0.61	ND<0.040		530	ND<0.56	1.6	4.1	0.38	1.0	0.56	ND<4.1
CS6	8/9/2010	ND<0.24	0.64	ND<0.14	ND<0.71	ND<0.046		1,000	ND<0.64	3.1	2.9	0.39	1.1	0.65	ND<4.7
CS6-DUP	8/9/2010	ND<0.24	0.64	ND<0.14	ND<0.69	ND<0.045		1,100	ND<0.63	3.1	2.9	0.39	1.1	0.63	ND<4.6
AMBIENT	4/26/2016	ND<0.20	ND<0.16	ND<0.12	ND<0.58	ND<0.037	ND<210			0.46	1.1	0.22	0.74	0.33	ND<3.8
AMBIENT	8/9/2010	ND<0.26	ND<0.21	ND<0.16	ND<0.78	ND<0.050		ND<200	ND<0.71	0.31, a	0.66	ND<0.17	ND<0.34	ND<0.17	ND<5.1
AMBIENT	2/19/2010	ND<0.22	ND<0.17	ND<0.13	ND<0.64	ND<0.041	ND<230			0.56	1.3	0.29	0.98	0.34	ND<4.2
ESL		0.48	0.48	8.3	83	0.0095	140	590	11	0.097	310	1.1	Combin	ed = 100	0.083
Abbreviations and Note PCE = Tetrachloroethene	<u>s:</u>	1													
TCE = Trichloroethene		+													
cis-1,2-DCE = cis-1,2-Di	chloroethene				<u> </u>										
trans-1,2-DCE = trans-1,2															
TPH-SS = Total Petroleu			solvent												
TPH-G = Total Petroleum															
MTBE = Methyl tertiary-	butyl ethe														
ND = Not Detected.															
= Not Analyzed.															
a = Laboratory Analytical	note: Estimated	Value											-		
ESL = Environmental Sci			co Bay – Reg	ional Water Qu	ality Control Bo	ard updated Fe	bruary 2016	(Revision 2),	from Table L	A-1 – Indoor Air	Direct Exposure Hun	an Health Risk	Screening Levels for	Residential Land I	
Values in bold exceed th															
Results and ESLs in micr	ograms per cubic	meter (µg/n	13), unless ot	herwise indica	tec										

Table 2A Crawls Space and Ambient Air Risk Calculation Results

						-										
Equation		Concentration in Air	X Exposure Time X	Exposure Frequency X	Exposure Duration	x	Inhalation Unit Risk Factor	all divided by	Averaging Time for Carcinogens	x	365 X	(24	Calculated Individual Compound Incremental Carcinogenic Risk	Cumulative Carcinogenic Risk	Comments
Units		(ug/m3)	(hrs/day)	(days/yr)	(yrs)		(ug/m3)		(yrs)		(days/yr)		(hr/day)			
Location	Compound															
						S	amples Collected	April 26, 201	6							
CS1 CS1	Benzene Ethylbenzene	0.510 0.820	24 24	350	26		2.90E-05 2.50E-06		70 70		365 365		24 24	5.27E-06 7.30E-07		Residential Exposure
CS1	Naphthalene	0.480	24	350	26		3.40E-05		70		365		24	5.81E-06		
CS1	PCE	0.260	24	350	26	-	5.90E-06		70		365		24	5.46E-07	1.2E-05	
CS2	Benzene	0.550	24	350	26		2.90E-05		70		365		24	5.68E-06	122 05	Residential Exposure
CS2 CS2	Ethylbenzene	0.780	24	350	26	-	2.50E-05		70		365		24	6.95E-07		Residential Exposure
CS2	Naphthalene	0.410	24	350	26		3.40E-05		70		365		24	4.96E-06		
CS2	PCE	0.990	24	350	26	_	5.90E-06		70		365		24	2.08E-06		
CS2	TCE	0.380	24	350	26		4.10E-06		70		365		24	5.55E-07	1.4E-05	
CS3	Benzene	0.41	24	350	26		2.90E-05		70		365		24	4.23E-06		Residential Exposure
CS3	Ethylbenzene	0.580	24	350	26	_	2.50E-06		70		365		24 24	5.16E-07		
CS3	Naphthalene	0.710	24	350	26		3.40E-05		70		365		24	8.60E-06	1.3E-05	
CS3-DUP	Benzene	0.420	24	350	26	-	2.90E-05		70		365		24	4.34E-06		Residential Exposure
CS3-DUP	Ethylbenzene	0.590	24	350	26		2.50E-06		70		365		24	5.25E-07		*
CS3-DUP	Naphthalene	0.720	24	350	26		3.40E-05		70		365		24	8.72E-06	1.4E-05	
AMBIENT	Benzene	0.460	24	350	26		2.90E-05		70		365		24	4.75E-06		Residential Exposure
	Ethylbenzene	0.220	24	350	26		2.50E-06		70		365		24	1.96E-07		Residential Exposure
						-									4.9E-06	
					I	S	amples Collected	August 9, 201	0					I	1	1
CS4	Benzene	1.8	24	350	26		2.90E-05		70		365		24	1.86E-05		Residential Exposure
CS4	Ethylbenzene	0.37	24	350	26	_	2.50E-06		70		365		24	3.29E-07		
CS4	TCE	1.30	24	350	26		4.10E-06		70		365		24	1.90E-06	2.1E-05	
CS5	Benzene	1.6	24	350	26		2.90E-05		70		365		24	1.65E-05		Residential Exposure
CS5	Ethylbenzene	0.38	24	350	26		2.50E-06		70		365		24	3.38E-07		Residential Exposure
CS5	PCE	0.36	24	350	26		5.90E-06		70		365		24	7.56E-07		
CS5	TCE	1.7	24	350	26	_	4.10E-06		70		365		24	2.48E-06	2.0E-05	
															2.0E-03	
CS6 CS6	Benzene Ethylbenzene	3.10 0.39	24 24	350 350	26 26		2.90E-05 2.50E-06		70 70		365 365		24 24	3.20E-05 3.47E-07		Residential Exposure
CS6	TCE	0.64	24	350	26		4.10E-06		70		365		24	9.35E-07		
															3.3E-05	
GG (DI ID	5	2.10		350	24	_	0.007.05				365		2.1	0.007.05		D. 11. 11.D.
CS6-DUP CS6-DUP	Benzene Ethylbenzene	3.10 0.39	24 24	350	26 26		2.90E-05 2.50E-06		70 70		365		24 24	3.20E-05 3.47E-07		Residential Exposure
CS6-DUP	TCE	0.64	24	350	26		4.10E-06		70		365		24	9.35E-07		
															3.3E-05	
AMBIENT	Benzene	0.31	24	350	26	-	2.90E-05		70		365		24	3.20E-06		Residential Exposure
															3.2E-06	
	I	1			1	San	nples Collected Fe	ebruary 19, 20	010	1 TT	I			I	1	1
CS1	Benzene	4.7	24	350	26	+	2.90E-05		70	$\left \right $	365		24	4.85E-05		Residential Exposure
CS1	Ethylbenzene	9.4	24	350	26		2.50E-06		70		365		24	8.37E-06		
CS1	PCE	0.38	24	350	26	_	5.90E-06		70	\square	365		24	7.99E-07		
CS1	TCE	0.44	24	350	26		4.10E-06		70	\vdash	365		24	6.43E-07	5.8E-05	
CS2	Benzene	5.3	24	350	26	_	2.90E-05		70		365		24	5.47E-05		Residential Exposure
CS2 CS2	Ethylbenzene PCE	9.3	24 24	350	26 26	+	2.50E-06 5.90E-06		70 70	+	365 365		24 24	8.28E-06 2.52E-06		
CS2	TCE	3.2	24	350	26		4.10E-06		70		365		24	4.67E-06		
						1									7.0E-05	

Table 2A Crawls Space and Ambient Air Risk Calculation Results

Equation		Concentration in Air	X Exposure Time	X Exposure Frequency X	Exposure Duration	x	Inhalation Unit Risk Factor	all divided by	Averaging Time for Carcinogens	x	365	X	24	Calculated Individual Compound Incremental	Cumulative Carcinogenic Risk	Comments
														Carcinogenic Risk		
Units		(ug/m3)	(hrs/day)	(days/yr)	(yrs)		(ug/m3)		(yrs)		(days/yr)		(hr/day)			
CS3	Benzene	0.65	24	350	26	-	2.90E-05		70		365		24	6.71E-06		Residential Exposure
CS3	Ethylbenzene	0.77	24	350	26		2.50E-06		70		365		24	6.86E-07		
CS3	PCE	0.23	24	350	26	1	5.90E-06		70	1	365		24	4.83E-07		
															7.9E-06	
CS3-DUP	Benzene	0.64	24	350	26	-	2.90E-05		70		365		24	6.61E-06		Residential Exposure
CS3-DUP	Ethylbenzene	0.79	24	350	26	1	2.50E-06		70		365		24	7.03E-07		
															7.3E-06	
AMBIENT	Benzene	0.56	24	350	26		2.90E-05		70		365		24	5.78E-06		Residential Exposure
AMBIENT	Ethylbenzene	0.29	24	350	26		2.50E-06		70		365		24	2.58E-07		
															6.0E-06	
Notes:																
PCE = Tetrac	hloroethene.															
TCE = Trichl	oroethene.															

Table 2B

					Crawl Spa	ace and Ambie	ent Air Hazard Calcu	latio	n Results						
Equation		Concentration in Air X	Exposure X Time	Exposure Frequency	X Exposure Duration	all divided by	Averaging Time for Non-cancer Toxic Effects	X	365	X	24	X Reference Concentration (Rfc)	Calculated Individual Compound Hazard Quotient	Hazard Index	Comments
Units		(ug/m3)	(hrs/day)	(days/yr)	(yrs)		(yrs)		(days/yr)		(hr/day)	(ug/m3)			
Location	Compound														
	L.				1 1	Samples Co	ollected April 26, 20	16			0			0	
001	TDU CC	2,500	24	250	21		26		245		24	1.205.02	2.505.01		D 11 JUD
CS1 CS1	TPH-SS Benzene	3,500 0.51	24 24	350 350	26		26 26		365 365		24 24	1.30E+02 3.00E+00	2.58E+01 1.63E-01		Residential Exposure
CS1 CS1	Toluene	2.4	24 24	350	26	+	26	-	365	-	24	3.00E+00	7.67E-03		
CS1	Ethylbenzene	0.82	24	350	26		26		365	1	24	1.00E+02	7.86E-04		
CS1	m,p-Xylene	1.70	24	350	26		26		365		24	1.00E+02	1.63E-02		
CS1	o-Xylene	0.78	24	350	26		26		365		24	1.00E+02	7.48E-03		
CS1	Naphthalene	0.48	24	350	26		26		365		24	3.00E+00	1.53E-01		
CS1	PCE	0.26	24	350	26		26		365		24	3.50E+01	7.12E-03		
														2.6E+01	
CS2	TPH-SS	1,800	24	350	26	-	26		365		24	1.30E+02	1.33E+01		Residential Exposure
CS2 CS2	Benzene	0.55	24	350	26		26		365		24	3.00E+02	1.76E-01		Residential Exposure
CS2 CS2	Toluene	3	24	350	26		26		365		24	3.00E+00	9.59E-03		
CS2	Ethylbenzene	0.78	24	350	26		26		365		24	1.00E+03	7.48E-04		
CS2	m,p-Xylene	1.70	24	350	26		26		365		24	1.00E+02	1.63E-02		
CS2	o-Xylene	0.79	24	350	26		26		365		24	1.00E+02	7.58E-03		
CS2	Naphthalene	0.41	24	350	26		26		365		24	3.00E+00	1.31E-01		
CS2	PCE	0.99	24	350	26		26		365		24	3.50E+01	2.71E-02		
CS2	TCE	0.38	24	350	26		26		365		24	2.00E+00	1.82E-01	1.4E+01	
						-								1.4E+01	
CS3	TPH-SS	5,800	24	350	26		26		365		24	1.30E+02	4.28E+01		Residential Exposure
CS3	Benzene	0.41	24	350	26		26		365		24	3.00E+00	1.31E-01		Residential Exposure
CS3	Toluene	1.6	24	350	26		26		365		24	3.00E+02	5.11E-03		
CS3	Ethylbenzene	0.58	24	350	26		26		365		24	1.00E+03	5.56E-04		
CS3	m,p-Xylene	1.40	24	350	26		26		365		24	1.00E+02	1.34E-02		
CS3	o-Xylene	0.61	24	350	26		26		365		24	1.00E+02	5.85E-03		
CS3	Naphthalene	0.71	24	350	26		26		365		24	3.00E+00	2.27E-01	4.3E+01	
														4.512±01	
CS3-DUP	TPH-SS	5,000	24	350	26	+	26	-	365	-	24	1.30E+02	3.69E+01		Residential Exposure
CS3-DUP	Benzene	0.42	24	350	26		26		365		24	3.00E+00	1.34E-01		Let the point
CS3-DUP	Toluene	1.5	24	350	26		26		365		24	3.00E+02	4.79E-03		
CS3-DUP	Ethylbenzene	0.59	24	350	26		26		365		24	1.00E+03	5.66E-04		
CS3-DUP	m,p-Xylene	1.40	24	350	26		26		365	-	24	1.00E+02	1.34E-02		
CS3-DUP CS3-DUP	o-Xylene Naphthalene	0.62	24 24	350 350	26		26 26	-	365 365		24 24	1.00E+02 3.00E+00	5.95E-03 2.30E-01		
C33-DUr	ivapiunaiene	0.72	24	550	20		20		303		24	5.00E+00	2.30E-01	3.7E+01	
				2.50						-		0.007.07	4 4872 04		
AMBIENT	Benzene	0.46	24	350	26		26		365		24	3.00E+00	1.47E-01		Residential Exposure
AMBIENT AMBIENT	Toluene Ethylbenzene	0.22	24 24	350 350	26		26 26	-	365 365		24 24	3.00E+02 1.00E+03	3.52E-03 2.11E-04		
AMBIENT	m,p-Xylene	0.22	24	350	26		26		365	-	24	1.00E+03 1.00E+02	2.11E-04 3.16E-03		
AMBIENT	o-Xylene	0.33	24	350	26	-	26	-	365	-	24 24	1.00E+02	3.16E-03		
		5,555		550		1		1		1		1.001102	2.2.00 00	1.6E-01	

Table 2B

Equation		Concentration in Air X	Exposure 2 Time	K Exposure Frequency	X Exposure Duration	all divided Averaging Time by for Non-cancer Toxic Effects	X	365 X	24	X	Reference Concentration (Rfc)	Calculated Individual Compound Hazard Quotient	Hazard Index	Comments
Units		(ug/m3)	(hrs/day)	(days/yr)	(yrs)	(yrs)		(days/yr)	(hr/day)		(ug/m3)			
Location	Compound													
						Samples Collected August 9, 2	010							
CS4	TPH-G	570	24	350	26	26		365	24		5.70E+02	9.59E-01		Residential Exposure
CS4	Benzene	1.8	24	350	26	26	-	365	24		3.00E+00	5.75E-01		
CS4 CS4	Toluene	4.0 0.37	24 24	350 350	26	26		365	24 24		3.00E+02 1.00E+03	1.28E-02 3.55E-04		
CS4	Ethylbenzene m,p-Xylene	1.0	24	350	26 26	26		365 365	24		1.00E+03	9.59E-03		
CS4	o-Xylene	0.56	24	350	26	26		365	24		1.00E+02 1.00E+02	5.37E-03		
CS4	TCE	1.3	24	350	26	26		365	24		2.00E+02	6.23E-01		
													2.2E+00	
CS5	TPH-G	530	24	350	26	26		365	24		5.70E+02	8.92E-01		Residential Exposure
CS5	Benzene	1.6	24	350	26	26		365	24		3.00E+00	5.11E-01		Residential Exposure
CS5	Toluene	4.1	24	350	26	26		365	24		3.00E+02	1.31E-02		
CS5	Ethylbenzene	0.38	24	350	26	26		365	24		1.00E+03	3.64E-04		
CS5	m,p-Xylene	1.0	24	350	26	26		365	24		1.00E+02	9.59E-03		
CS5	o-Xylene	0.56	24	350	26	26		365	24		1.00E+02	5.37E-03		
CS5	PCE	0.36	24	350	26	26		365	24		3.50E+01	9.86E-03		
CS5	TCE	1.7	24	350	26	26	-	365	24		2.00E+00	8.15E-01	2.3E+00	
CS6	TPH-G	1,000	24	350	26	26		365	24		5.70E+02	1.68E+00		Residential Exposure
CS6	Benzene	3.1	24	350	26	26		365	24		3.00E+02	9.91E-01		Residential Exposure
CS6	Toluene	2.9	24	350	26	26		365	24		3.00E+02	9.27E-03		
CS6	Ethylbenzene	0.39	24	350	26	26		365	24		1.00E+03	3.74E-04		
CS6	m,p-Xylene	1.1	24	350	26	26		365	24		1.00E+02	1.05E-02		
CS6	o-Xylene	0.65	24	350	26	26		365	24		1.00E+02	6.23E-03		
CS6	TCE	0.6	24	350	26	26		365	24		2.00E+00	3.07E-01	3.0E+00	
CS6-DUP	TPH-G	1,100	24	350	26	26	-	365	24		5.70E+02	1.85E+00		Residential Exposure
CS6-DUP	Benzene	3.1	24	350	26	26		365	24	<u> </u>	3.00E+00	9.91E-01		
CS6-DUP	Toluene	2.9	24	350	26	26		365	24		3.00E+02	9.27E-03		
CS6-DUP	Ethylbenzene	0.39	24	350	26	26		365	24		1.00E+03	3.74E-04		
CS6-DUP	m,p-Xylene	1.1	24	350	26	26		365	24		1.00E+02	1.05E-02		
CS6-DUP	o-Xylene	0.63	24	350	26	26		365	24		1.00E+02	6.04E-03		
CS6-DUP	TCE	0.6	24	350	26	26		365	24		2.00E+00	3.07E-01	3.2E+00	
AMBIENT	Benzene	0.31	24	350	26	26		365	24		3.00E+00	9.91E-02		Residential Exposure
AMBIENT	Toluene	0.66	24	350	26	26		365	24		3.00E+00 3.00E+02	2.11E-02		Residential Exposure
*		0100			20	20	-		21				1.0E-01	

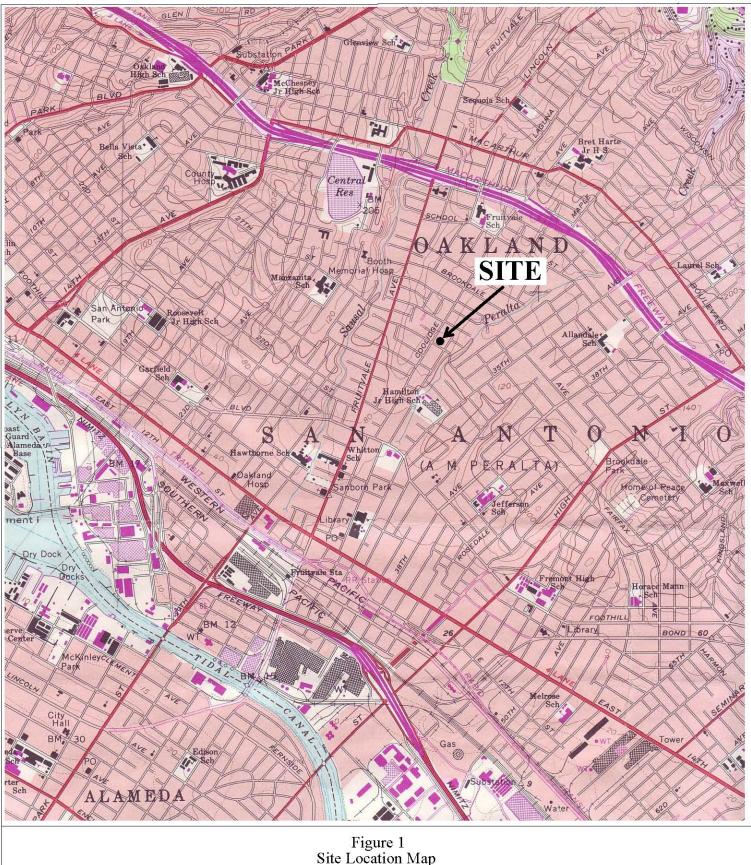
Table 2B

					Crawl Space and Ar	nbient Air Hazard Calcu	lation Results							
Equation		Concentration in Air X	Exposure X Time	Exposure Frequency	X Exposure all divic Duration by	led Averaging Time for Non-cancer Toxic Effects	X 365	X	24	x	Reference Concentration (Rfc)	Calculated Individual Compound Hazard Quotient	Hazard Index	Comments
Units		(ug/m3)	(hrs/day)	(days/yr)	(yrs)	(yrs)	(days/yr))	(hr/day)		(ug/m3)			
Location	Compound													
					Somulas	Collected February 19,	2010							
					Samples	onected repruary 19,	2010							
CS1	TPH-SS	310	24	350	26	26	365		24		1.30E+02	2.29E+00		Residential Exposure
CS1	Benzene	4.7	24	350	26	26	365		24		3.00E+00	1.50E+00		
CS1	Toluene	48	24	350	26	26	365	-	24		3.00E+02	1.53E-01		
CS1	Ethylbenzene	9.4	24	350	26	26	365	+	24		1.00E+03	9.01E-03		
CS1 CS1	m,p-Xylene o-Xylene	36	24 24	350 350	26 26	26 26	365 365	_	24 24		1.00E+02 1.00E+02	3.45E-01 1.05E-01		
CS1 CS1	PCE	0.38	24	350	26	26	365		24		3.50E+01	1.04E-02		
CS1	TCE	0.44	24	350	26	26	365		24		2.00E+00	2.11E-01		
001	102	0.11	21	5500	20	20	000		21		21002100	Diffib of	4.6E+00	
CS2	TPH-SS	300	24	350	26	26	365		24		1.30E+02	2.21E+00		Residential Exposure
CS2	Benzene	5.3	24	350	26	26	365		24		3.00E+00	1.69E+00		
CS2	Toluene	50	24	350	26	26	365	_	24		3.00E+02	1.60E-01		
CS2	Ethylbenzene	9.3	24	350	26	26	365	_	24		1.00E+03	8.92E-03		
CS2 CS2	m,p-Xylene o-Xylene	35	24 24	350 350	26	26	365 365	_	24 24		1.00E+02 1.00E+02	3.36E-01 9.59E-02		
CS2 CS2	PCE	1.2	24	350	26	26	365	_	24		3.50E+01	9.59E-02 3.29E-02		
CS2 CS2	TCE	3.2	24	350	26	26	365	_	24		2.00E+00	1.53E+00		
001	101	للمدة لي	21	330	20	20	500		2.		2.002100	1002100	6.1E+00	
		0.55	2.1	2.50			0.45				0.007.00	0.0072.04		
CS3 CS3	Benzene Toluene	0.65 3.7	24 24	350 350	26 26	26 26	365 365		24 24		3.00E+00 3.00E+02	2.08E-01 1.18E-02		Residential Exposure
CS3	Ethylbenzene	0.77	24 24	350	26	26	365		24		1.00E+02	7.38E-04		
CS3	m,p-Xylene	3.6	24	350	26	26	365	_	24		1.00E+02	3.45E-02		
CS3	o-Xylene	1.0	24	350	26	26	365		24		1.00E+02	9.59E-02		
CS3	PCE	0.23	24	350	26	26	365		24		3.50E+01	6.30E-03		
													2.7E-01	
CS3-DUP	Benzene	0.64	24	350	26	26	365		24		3.00E+00	2.05E-01		Residential Exposure
CS3-DUP	Toluene	3.9	24	350	26	26	365	+	24	1	3.00E+00	1.25E-02		residential Exposure
CS3-DUP	Ethylbenzene	0.79	24	350	26	26	365	+	24		1.00E+02	7.58E-04		
CS3-DUP	m,p-Xylene	3.7	24	350	26	26	365	1	24	1	1.00E+02	3.55E-02		
CS3-DUP	o-Xylene	1.0	24	350	26	26	365		24		1.00E+02	9.59E-03		
													2.6E-01	
AMBIENT	Benzene	0.56	24	350	26	26	365	+	24		3.00E+00	1.79E-01		Residential Exposure
AMBIENT	Toluene	1.3	24	350	26	26	365		24	1	3.00E+02	4.16E-03		an entre and
AMBIENT	Ethylbenzene	0.29	24	350	26	26	365		24		1.00E+03	2.78E-04		
AMBIENT	m,p-Xylene	0.98	24	350	26	26	365		24		1.00E+02	9.40E-03		
AMBIENT	o-Xylene	0.34	24	350	26	26	365		24		1.00E+02	3.26E-03		
								+		+			2.0E-01	
Notes:														
	al Petroleum Hydrocarbo	ons as Gasoline						_		1				
PCE = Tetrach								_						
TCE = Trichlo	roethene									1				

Table 2C Crawl Space and Ambient Air Risk and Hazard Calculation Results Summary

	Calculated	Calculated	Calculated		
	Cumulative Incremental	Cumulative Incremental	Cumulative Incremental	Calculated	Recommendations Based on
Air Sample	Carcinogenic	Carcinogenic Risk	Carcinogenic Risk	Hazard	DTSC-Recommended
Designation	Risk	Alternate Description	Alternate Description	Index	Guidance for Action or Response
x					
Location		-			
			Samples Collecte	d April 26, 2016	
CS1	1.24E-05	0.0000124	12.4 in a million	26	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
CS2	1.40E-05	0.0000140	14.0 in a million	14	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
CS3	1.33E-05	0.0000133	13.3 in a million	43	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
CS3-DUP	1.36E-05	0.0000136	13.6 in a million	37	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
	11502 05	0.0000100		57	
AMBIENT	4.95E-06	0.00000495	5.0 in a million	0.16	Not Applicable - Ambient Air
			Samples Collecte	d August 9, 2010	
			<u> </u>		
CS4	2.08E-05	0.0000208	20.8 in a million	2.2	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
CS5	2.01E-05	0.0000201	20.1 in a million	2.3	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
000	LIGILI 00	010000201	2011 III U IIIIIIOII	2.0	Dradate need for action in the grouter and the animon, and nature grouter and the
CS6	3.33E-05	0.0000333	33.3 in a million	3.0	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
CS6-DUP	3.33E-05	0.0000333	33.3 in a million	3.2	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
C30-D01	5.55E-05	0.0000555	55.5 III a IIIIII0II	5.4	Evaluate need for action - risk greater than 1 in a minion, and nazard greater than 1.0.
AMBIENT	3.20E-06	0.00000320	3.2 in a million	0.10	Not Applicable - Ambient Air
			Samples Collected	February 19, 2010	
			Sumples concered	r obrum y 19, 2010	
CS1	5.84E-05	0.0000584	58.4 in a million	4.6	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
CS2	7.02E-05	0.0000702	70.2 in a million	6.1	Evaluate need for action - risk greater than 1 in a million, and hazard greater than 1.0.
0.52	7.02E-03	0.0000702	70.2 III a IIIIII0II	0.1	Evaluate need for action - risk greater than 1 in a minion, and nazard greater than 1.0.
CS3	7.88E-06	0.00000788	7.9 in a million	0.27	Evaluate need for action - risk greater than 1 in a million.
CS3-DUP	7.31E-06	0.00000731	7.3 in a million	0.26	Products and for action with empty days 1 in a willing
CS3-DUP	7.51E-00	0.00000731	7.5 in a million	0.26	Evaluate need for action - risk greater than 1 in a million.
AMBIENT	6.04E-06	0.00000604	6.0 in a million	0.20	Not Applicable - Ambient Air
Notes:					
	IATRIX FOR VAPOR INTRU				
<u>Risk</u>	Response	Activities			
Less than 1 in a million	No Further Action	None			
1 to 100 in a million	Evaluate Need	Possible Actions			
	for Action	o Additional Data Collection			
		o Monitoring			
		o Additional Risk Characterizatio	n		
		o Mitigation			
		o Source Remediation			
More than 100 in a million	Response	o Vapor Intrusion Mitigation			
	Action Needed	o Source Remediation			

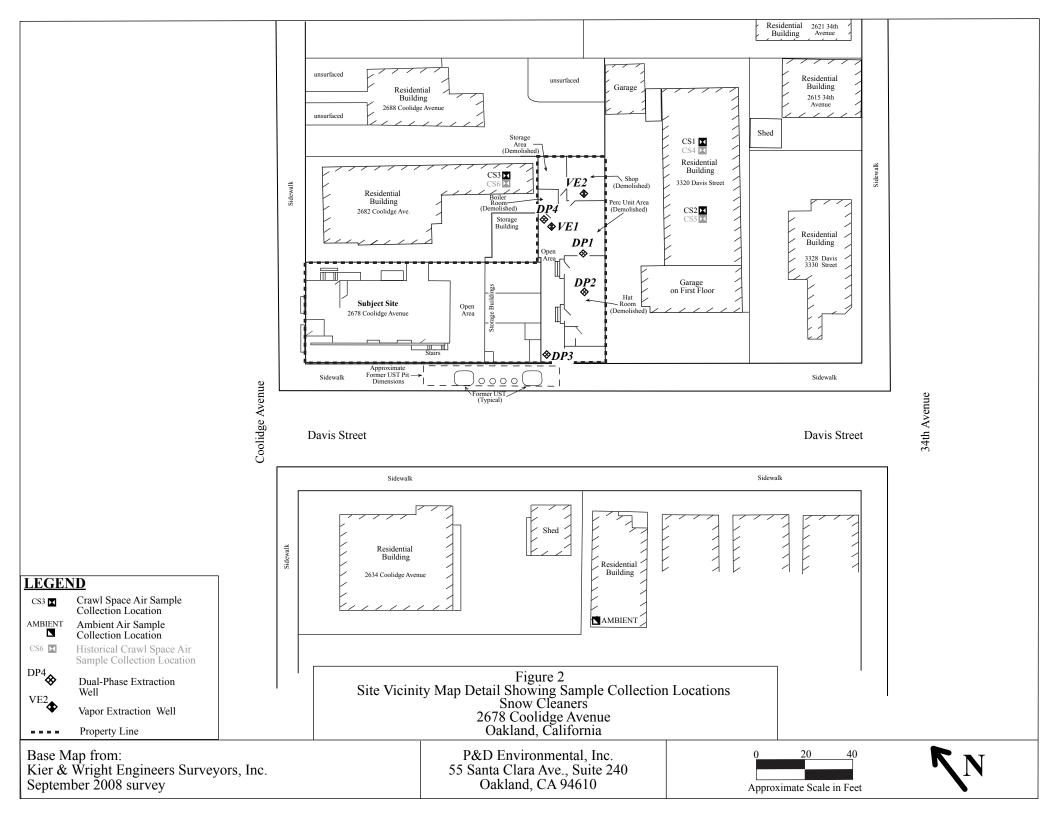
FIGURES



Site Location Map Snow Cleaners 2678 Coolodge Avenue Oakland, California

Base Map From: U.S. Geological Survey Oakland East, California 7.5-Minute Quadrangle Photorevised 1980

P&D Environmental, Inc. 55 Santa Clara Ave., Suite 240 Oakland, CA 94610 0 1,000 2,000 Approximate Scale In Feet



APPENDIX A

Crawl Space Air Sampling Data Sheet

2678 CA 298 4/26/16 = MLBD	BLIDGE AVE.	, OAKLAND			
4/26/16 e MLBD					
e MLBD					
		10 State In State Institut Security of			
low Controller #	Canister #	Sample Canister Initial Vacuum Check (In. Hg) and time	Begin sample collection vacuum (In. Hg) and time	End sample collection vacuum (In. Hg) and time	NOTES
933	34237	vac - 30	vac - 30	vac -5	PURGE VOLUME
		time 0801	time 085740	time 171702	201/MIN FOR
					IMINUTE
3854	25244	vac - 30	vac - 30	vac - 4.5	
		time 0805	time 085912	time 171751	
152/7	14124	2.5	20		
13261	17107				
		time 0820	time 091500	time 17 do de	
24 500	32962	100 a 2a	100 - 30	-5	
57500	00100		time	time 17 2000	
		unio v e A	11500	1 auce	
		vac	vac	vac	
		time	time	time	
· · · · · · · · · · · · · · · · · · ·		vac	vac	vac	
		time	time	time	
	ř				
		vac	vac	vac	
		time	time .	time	
				-	
			vac	vac	
		ume	lime	ume	
		vac	vac	vac	
		time	time	time	
		vac	vac	vac	
		time	time	time	
		vac	vac	vac	
		time	time	time	
		the second s			
		ume	ume	une	
4378	11892	vac - 30	vac - 21	vac -2	
1010	1101~	time 0203	time 081445	time 180650	
		time 0803	time 081443	time 180630	
	3854		1 1	ime 0801 ime 085740 3854 252444 vac -30 ime 05267 14124 vac -30 ime 05267 33962 vac -30 ime 040 33962 vac vac vac 14124 vac vac vac vac 14124 vac vac vac vac 14125 14124 vac vac vac 14125 14124	ime 0201 ime 085740 ime 171702 3854 252444 vac -30 vac -30 ime 171751 05267 14124 vac -30 vac -30 vac -4.5 05267 14124 vac -30 vac -30 vac -6 05267 14124 vac -30 vac -30 vac -6 05267 14124 vac -30 vac -30 vac -6 05200 10001500 time 1717000 time 1717000 time 1717000 34500 33962 vac -30 vac -5 time 04200 time 1717000 34500 33962 vac -30 vac vac vac vac -5 100 100 vac vac vac vac vac vac -5 101 vac vac vac vac vac vac vac 101 vac vac vac

APPENDIX B

Weather Information

https://www.wunderground.com/personal-weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160412/e20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160508/mcustom/weather-station/dashboard?ID=KCAOAKLA51#history/s20160508/mcustom/weather-station/weather-

About This Weather Station

Weather Station ID: KCAOAKLA51 Station Name: Highland Terrace Latitude / Longitude: N 37 ° 47 ' 31 ", W 122 ° 13 ' 44 " Elevation: 150 City: Oakland State: CA Hardware: Davis Vantage Vue (Wireless) Software: Cumulus v1.9.4

Weather History Table

April 12, 2016 - May 8, 2016

2016	Tempera	ture		Dew Poir	nt		Humidit	у		Speed			Pressure			Precip. Accum
Apr	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
12	61.9 °F	55.6 °F	51.7 °F	52.5 °F	49.6 °F	47.6 °F	93 %	81 %	66 %	11 mph	3 mph	15 mph	30.26 in	30.22 in	30.17 in	0 in
13	63 °F	56 °F	49 °F	51.5 °F	47.4 °F	42.4 °F	89 %	74 %	50 %	12 mph	2 mph	16 mph	30.25 in	30.17 in	30.1 in	0 in
14	63 °F	55.7 °F	47.9 °F	52.1 °F	46.7 °F	41 °F	95 %	73 %	51 %	9 mph	3 mph	20 mph	30.19 in	30.14 in	30.08 in	0.17 in
15	71.2 °F	58.8 °F	48 °F	46.1 °F	42.3 °F	38.5 °F	77 %	57 %	33 %	11 mph	3 mph	16 mph	30.18 in	30.14 in	30.09 in	0 in
16	81.6 °F	65.7 °F	52.5 °F	51.2 °F	44.2 °F	35.4 °F	82 %	51 %	20 %	7 mph	1 mph	15 mph	30.13 in	30.09 in	30.05 in	0 in
17	83.6 °F	67.9 °F	54.4 °F	53.2 °F	46.9 °F	40.6 °F	77 %	49 %	31 %	8 mph	2 mph	10 mph	30.07 in	30.03 in	30 in	0 in
18	83.9 °F	68.1 °F	55.1 °F	54.2 °F	45.7 °F	39.1 °F	66 %	46 %	33 %	9 mph	2 mph	10 mph	30.08 in	30.05 in	30.02 in	0 in
19	80.1 °F	66.6 °F	56.6 °F	51.1 °F	41.9 °F	31.3 °F	61 %	43 %	18 %	5 mph	1 mph	11 mph	30.05 in	29.98 in	29.91 in	0 in
20	72.6 °F	62.7 °F	52.8 °F	56.7 °F	46.1 °F	35.6 °F	87 %	57 %	29 %	9 mph	2 mph	14 mph	29.99 in	29.96 in	29.93 in	0 in
21	68.7 °F	61.7 °F	57.2 °F	57.6 °F	55.1 °F	52.7 °F	91 %	80 %	61 %	15 mph	3 mph	18 mph	29.96 in	29.92 in	29.89 in	0 in
22	60.7 °F	58.2 °F	52.9 °F	55.5 °F	50.8 °F	44.3 °F	93 %	77 %	59 %	17 mph	6 mph	24 mph	30.13 in	29.98 in	29.83 in	0.12 in
23	65.1 °F	57.1 °F	48.5 °F	52 °F	48.7 °F	46 °F	92 %	74 %	57 %	12 mph	2 mph	16 mph	30.23 in	30.18 in	30.13 in	0 in
24	68.4 °F	58.2 °F	51.4 °F	50.3 °F	47 °F	39.1 °F	89 %	68 %	49 %	11 mph	3 mph	21 mph	30.15 in	30.06 in	29.98 in	0 in
25	65.7 °F	56.1 °F	47.6 °F	45.1 °F	38.4 °F	33.2 °F	78 %	53 %	32 %	13 mph	4 mph	18 mph	30.07 in	30.04 in	30.01 in	0 in
26	64.3 °F	55.6 °F	48.5 °F	48.8 °F	45.3 °F	41.6 °F	89 %	69 %	47 %	11 mph	2 mph	16 mph	30.1 in	30.08 in	30.05 in	0 in
27	64.6 °F	55.1 °F	48.6 °F	53.6 °F	47.2 °F	41.4 °F	94 %	76 %	55 %	18 mph	3 mph	18 mph	30.07 in	29.97 in	29.87 in	0.09 ir
28	68.2 °F	58.2 °F	48.9 °F	52 °F	48.1 °F	44.1 °F	87 %	70 %	51 %	12 mph	3 mph	14 mph	30.01 in	29.95 in	29.89 in	0 in
29	67.9 °F	57.7 °F	51 °F	51.9 °F	48.9 °F	46.5 °F	89 %	74 %	54 %	16 mph	4 mph	17 mph	30.08 in	30.01 in	29.93 in	0 in
30	80.3 °F	66.7 °F	53.5 °F	49.5 °F	43.3 °F	38 °F	77 %	46 %	24 %	12 mph	3 mph	19 mph	29.97 in	29.9 in	29.83 in	0 in
2016	T			Dew Poir						Owned			Deserves			Precip
	Tempera		Law			Law	Humidit	•	Law	Speed	A	Curch	Pressure		Law	Accun
May	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Gust	High	Avg	Low	Sum
1	81.3 °F	66 °F	53.5 °F	53.6 °F	48.4 °F	40.9 °F	92 %	55 %	29 %	11 mph	3 mph	18 mph	29.98 in	29.9 in	29.82 in	0 in
2	66.3 °F	57.9 °F	52.7 °F	54.2 °F	51.7 °F	49.9 °F	92 %	81 %	64 %	9 mph	3 mph	12 mph	30.09 in	30.03 in	29.98 in	0 in
3	70.2 °F	59 °F	53 °F	55.4 °F	52.1 °F	49.8 °F	91 %	79 %	55 %	8 mph	2 mph	11 mph	30.07 in	30 in	29.93 in	0 in
4	66.4 °F	58.6 °F	54.1 °F	53.3 °F	51.7 °F	50.4 °F	90 %	78 %	59 %	13 mph	2 mph	14 mph	29.96 in	29.92 in	29.87 in	0 in
5	64.9 °F	59.9 °F	55.6 °F	54.2 °F	52.4 °F	51 °F	88 %	77 %	64 %	8 mph	3 mph	13 mph	29.92 in	29.9 in	29.87 in	0 in
6	57.8 °F	55.6 °F	54 °F	52.8 °F	51.9 °F	50.8 °F	93 %	87 %	81 %	6 mph	2 mph	10 mph	29.93 in	29.9 in	29.86 in	0.09 ir
7	60.7 °F	56.8 °F	54.3 °F	55.3 °F	53 °F	51.4 °F	93 %	87 %	80 %	7 mph	1 mph	10 mph	30.01 in	29.96 in	29.91 in	0.15 in
3	67.1 °F	58.8 °F	54.6 °F	55.8 °F	53.4 °F	51 °F	95 %	83 %	66 %	9 mph	2 mph	14 mph	30.02 in	29.99 in	29.97 in	0.03 ir
5	64.9 °F	59.9 °F	55.6 °F	54.2 °F	52.4 °F	51 °F	88 %	77 %	64 %	8 mph	3 mph	13 mph	29.92 in	29.9 in	29.87 in	0 in
6	57.8 °F	55.6 °F	54 °F	52.8 °F	51.9 °F	50.8 °F	93 %	87 %	81 %	6 mph	2 mph	10 mph	29.93 in	29.9 in	29.86 in	0.09 ir
7	60.7 °F	56.8 °F	54.3 °F	55.3 °F	53 °F	51.4 °F	93 %	87 %	80 %	7 mph	1 mph	10 mph	30.01 in	29.96 in	29.91 in	0.15 ir
3	67.1 °F	58.8 °F	54.6 °F	55.8 °F	53.4 °F	51 °F	95 %	83 %	66 %	9 mph	2 mph	14 mph	30.02 in	29.99 in	29.97 in	0.03 ir

APPENDIX C

Laboratory Analytical Reports and Chain of Custody Documentation

- Air Toxics Workorder # 1604616A CS1 Through CS3, CS3-DUP, and AMBIENT TO-15 Results
- Air Toxics Workorder # 1604616B CS1 Through CS3, CS3-DUP, and AMBIENT TO-3 Results



5/3/2016 Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland CA 94610

Project Name: SNOW CLEANERS 2678 COOLIDGE AVE OAKLAND Project #: 0298 Workorder #: 1604616A

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 4/28/2016 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kga Vych

Kyle Vagadori Project Manager

180 Blue Ravine Road, Suite B Folsom, CA 95630



WORK ORDER #: 1604616A

Work Order Summary

CLIENT:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610	BILL TO:	Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland, CA 94610
PHONE:	510-658-6916	P.O. #	
FAX:	510-834-0772	PROJECT #	0298 SNOW CLEANERS 2678
DATE RECEIVED:	04/28/2016	CONTACT:	COOLIDGE AVE OAKLAND Kyle Vagadori
DATE COMPLETED:	05/03/2016	continent	Kyle vagadoli

			RECEIPT	FINAL
FRACTION #	NAME	<u>TEST</u>	VAC./PRES.	PRESSURE
01A	CS1	Modified TO-15	4.3 "Hg	5 psi
01B	CS1	Modified TO-15	4.3 "Hg	5 psi
02A	CS2	Modified TO-15	3.7 "Hg	4.9 psi
02B	CS2	Modified TO-15	3.7 "Hg	4.9 psi
03A	CS3	Modified TO-15	5.1 "Hg	5 psi
03B	CS3	Modified TO-15	5.1 "Hg	5 psi
04A	CS3-DUP	Modified TO-15	5.3 "Hg	4.9 psi
04B	CS3-DUP	Modified TO-15	5.3 "Hg	4.9 psi
05A	AMBIENT	Modified TO-15	2.2 "Hg	5.1 psi
05B	AMBIENT	Modified TO-15	2.2 "Hg	5.1 psi
06A	Lab Blank	Modified TO-15	NA	NA
06B	Lab Blank	Modified TO-15	NA	NA
07A	CCV	Modified TO-15	NA	NA
07B	CCV	Modified TO-15	NA	NA
08A	LCS	Modified TO-15	NA	NA
08AA	LCSD	Modified TO-15	NA	NA
08B	LCS	Modified TO-15	NA	NA
08BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:

layes

DATE: 05/03/16

DECEIDT

TTNLA T

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. 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

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LABORATORY NARRATIVE Modified TO-15 Full Scan/SIM P & D Environmental Workorder# 1604616A

Five 6 Liter Summa Canister (SIM Certified) samples were received on April 28, 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 liters 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.

Requirement TO-15 ATL Modifications ICAL %RSD acceptance </=30% RSD with 2 For Full Scan: criteria 30% RSD with 4 compounds allowed out to < 40% RSD compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD **Daily Calibration** +- 30% Difference For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers Blank and standards Zero air Nitrogen Method Detection Limit Follow 40CFR Pt.136 The MDL met all relevant requirements in Method App. B TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for Naphthalene, Benzene and Vinyl Chloride that are below the Reporting Limit but greater than the Method Detection Limit. Results are reported as qualified with high probability for false positive.

The results for each sample in this report were acquired from two separate data files originating from



the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Definition of Data Qualifying Flags

Nine 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.
- CN See case narrative explanation

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: CS1

Lab ID#: 1604616A-01A

Compound	Rpt. Limit	Amount	Rpt. Limit	Amount
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Naphthalene	0.78	0.092 J	4.1	0.48 J

Client Sample ID: CS1

Lab ID#: 1604616A-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.031	0.038	0.21	0.26
Benzene	0.078	0.16	0.25	0.51
Toluene	0.031	0.63	0.12	2.4
Ethyl Benzene	0.031	0.19	0.14	0.82
m,p-Xylene	0.062	0.40	0.27	1.7
o-Xylene	0.031	0.18	0.14	0.78

Client Sample ID: CS2

Lab ID#: 1604616A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)	
Naphthalene	0.76	0.078 J	4.0	0.41 J	

Client Sample ID: CS2

Lab ID#: 1604616A-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Tetrachloroethene	0.030	0.14	0.21	0.99
Trichloroethene	0.030	0.071	0.16	0.38
Benzene	0.076	0.17	0.24	0.55
Toluene	0.030	0.79	0.11	3.0
Ethyl Benzene	0.030	0.18	0.13	0.78
m,p-Xylene	0.061	0.38	0.26	1.7
o-Xylene	0.030	0.18	0.13	0.79



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

Client Sample ID: CS3

Lab ID#: 1604616A-03A

Compound	Rpt. Limit	Amount	Rpt. Limit	Amount
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Naphthalene	0.80	0.14 J	4.2	0.71 J

Client Sample ID: CS3

Lab ID#: 1604616A-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.13	0.26	0.41
Toluene	0.032	0.43	0.12	1.6
Ethyl Benzene	0.032	0.13	0.14	0.58
m,p-Xylene	0.064	0.31	0.28	1.4
o-Xylene	0.032	0.14	0.14	0.61

Client Sample ID: CS3-DUP

Lab ID#: 1604616A-04A

	Rpt. Limit	Amount	Rpt. Limit	Amount	
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)	
Naphthalene	0.81	0.14 J	4.2	0.72 J	

Client Sample ID: CS3-DUP

Lab ID#: 1604616A-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.081	0.13	0.26	0.42
Toluene	0.032	0.40	0.12	1.5
Ethyl Benzene	0.032	0.14	0.14	0.59
m,p-Xylene	0.065	0.32	0.28	1.4
o-Xylene	0.032	0.14	0.14	0.62

Client Sample ID: AMBIENT

Lab ID#: 1604616A-05A

No Detections Were Found.



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

Client Sample ID: AMBIENT

Lab ID#: 1604616A-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.073	0.14	0.23	0.46
Toluene	0.029	0.28	0.11	1.1
Ethyl Benzene	0.029	0.050	0.13	0.22
m,p-Xylene	0.058	0.17	0.25	0.74
o-Xylene	0.029	0.076	0.13	0.33



Client Sample ID: CS1 Lab ID#: 1604616A-01A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v050214	Date of Collection: 4/26/16 5:17:00 PN			
Dil. Factor:	1.56	Date of Analysis: 5/2/16 06:48 PM			
Compound	Rpt. Limit	Amount	Rpt. Limit	Amount	
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)	
Naphthalene	0.78	0.092 J	4.1	0.48 J	

J = Estimated value.

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130



Client Sample ID: CS1 Lab ID#: 1604616A-01B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050214sim 1.56	Date of Collection: 4/26/16 5:17:00 F Date of Analysis: 5/2/16 06:48 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.031	Not Detected	0.12	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.62	Not Detected
Tetrachloroethene	0.031	0.038	0.21	0.26
Trichloroethene	0.031	Not Detected	0.17	Not Detected
Vinyl Chloride	0.016	Not Detected	0.040	Not Detected
Benzene	0.078	0.16	0.25	0.51
Toluene	0.031	0.63	0.12	2.4
Ethyl Benzene	0.031	0.19	0.14	0.82
m,p-Xylene	0.062	0.40	0.27	1.7
o-Xylene	0.031	0.18	0.14	0.78

		Method	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	102	70-130	
4-Bromofluorobenzene	109	70-130	



Client Sample ID: CS2 Lab ID#: 1604616A-02A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: Dil. Factor:				of Collection: 4/26/16 5:17:00 PM of Analysis: 5/2/16 07:24 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)	
Naphthalene	0.76	0.078 J	4.0	0.41 J	

J = Estimated value.

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	103	70-130



Client Sample ID: CS2 Lab ID#: 1604616A-02B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050215sim 1.52	Date of Collection: 4/26/16 5:17:00 PM Date of Analysis: 5/2/16 07:24 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.030	Not Detected	0.12	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.60	Not Detected
Tetrachloroethene	0.030	0.14	0.21	0.99
Trichloroethene	0.030	0.071	0.16	0.38
Vinyl Chloride	0.015	Not Detected	0.039	Not Detected
Benzene	0.076	0.17	0.24	0.55
Toluene	0.030	0.79	0.11	3.0
Ethyl Benzene	0.030	0.18	0.13	0.78
m,p-Xylene	0.061	0.38	0.26	1.7
o-Xylene	0.030	0.18	0.13	0.79

		Method	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	104	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	107	70-130	



Client Sample ID: CS3 Lab ID#: 1604616A-03A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v050216	Date of Collection: 4/2		
Dil. Factor:	1.61	Date of Analysis: 5/2/1		
Compound	Rpt. Limit	Amount	Rpt. Limit	Amount
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Naphthalene	0.80	0.14 J	4.2	0.71 J

J = Estimated value.

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	109	70-130



Client Sample ID: CS3 Lab ID#: 1604616A-03B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050216sim 1.61		Date of Collection: 4/26/16 5:20:00 PM Date of Analysis: 5/2/16 08:00 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)	
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected	
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected	
Tetrachloroethene	0.032	Not Detected	0.22	Not Detected	
Trichloroethene	0.032	Not Detected	0.17	Not Detected	
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected	
Benzene	0.080	0.13	0.26	0.41	
Toluene	0.032	0.43	0.12	1.6	
Ethyl Benzene	0.032	0.13	0.14	0.58	
m,p-Xylene	0.064	0.31	0.28	1.4	
o-Xylene	0.032	0.14	0.14	0.61	

		Method	
Surrogates	%Recovery	Limits	
1,2-Dichloroethane-d4	105	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	110	70-130	



Client Sample ID: CS3-DUP Lab ID#: 1604616A-04A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v050217	Date of Collection: 4/26/16		
Dil. Factor:	1.62	Date of Analysis: 5/2/16 09:		
Compound	Rpt. Limit	Amount	Rpt. Limit	Amount
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Naphthalene	0.81	0.14 J	4.2	0.72 J

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J = Estimated value.

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	106	70-130



Client Sample ID: CS3-DUP Lab ID#: 1604616A-04B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050217sim 1.62	Date of Collection: 4/26/16 5:20:00 PM Date of Analysis: 5/2/16 09:25 PM		
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.032	Not Detected	0.13	Not Detected
trans-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Tetrachloroethene	0.032	Not Detected	0.22	Not Detected
Trichloroethene	0.032	Not Detected	0.17	Not Detected
Vinyl Chloride	0.016	Not Detected	0.041	Not Detected
Benzene	0.081	0.13	0.26	0.42
Toluene	0.032	0.40	0.12	1.5
Ethyl Benzene	0.032	0.14	0.14	0.59
m,p-Xylene	0.065	0.32	0.28	1.4
o-Xylene	0.032	0.14	0.14	0.62

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	110	70-130



Client Sample ID: AMBIENT Lab ID#: 1604616A-05A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v050218	Date of Collection: 4/26/16		
Dil. Factor:	1.46	Date of Analysis: 5/2/16 10		
Compound	Rpt. Limit	Amount	Rpt. Limit	Amount
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Naphthalene	0.73	Not Detected	3.8	Not Detected

Sumerates	1/ Decement	Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130



Client Sample ID: AMBIENT Lab ID#: 1604616A-05B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:			of Collection: 4/26/16 6:06:00 PM of Analysis: 5/2/16 10:00 PM	
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.029	Not Detected	0.12	Not Detected
trans-1,2-Dichloroethene	0.15	Not Detected	0.58	Not Detected
Tetrachloroethene	0.029	Not Detected	0.20	Not Detected
Trichloroethene	0.029	Not Detected	0.16	Not Detected
Vinyl Chloride	0.015	Not Detected	0.037	Not Detected
Benzene	0.073	0.14	0.23	0.46
Toluene	0.029	0.28	0.11	1.1
Ethyl Benzene	0.029	0.050	0.13	0.22
m,p-Xylene	0.058	0.17	0.25	0.74
o-Xylene	0.029	0.076	0.13	0.33

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	105	70-130



Client Sample ID: Lab Blank Lab ID#: 1604616A-06A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v050208a	Date of Collection: NA		6 11:38 AM
Dil. Factor:	1.00	Date of Analysis: 5/2/16 11:38 A		
Compound	Rpt. Limit	Amount	Rpt. Limit	Amount
	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Naphthalene	0.50	Not Detected	2.6	Not Detected

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	98	70-130



Client Sample ID: Lab Blank Lab ID#: 1604616A-06B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050208sima 1.00		of Collection: NA of Analysis: 5/2/1	6 11:38 AM
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
Benzene	0.050	0.0028 J	0.16	0.0090 J
Toluene	0.020	Not Detected	0.075	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

J = Estimated value.

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	102	70-130



Toluene-d8

4-Bromofluorobenzene

Air Toxics

Client Sample ID: CCV Lab ID#: 1604616A-07A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	v050203	Date of Collec	tion: NA
Dil. Factor:	1.00	Date of Analysis: 5/2/16 07:21 AN	
Compound		%Recovery	
Naphthalene		75	
Container Type: NA - Not A	Applicable		
			Method
Surrogates		%Recovery	Limits
1,2-Dichloroethane-d4		105	70-130

103 107 70-130

70-130

Page	20	of	25
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Client Sample ID: CCV Lab ID#: 1604616A-07B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050203sim 1.00	Date of Collection: NA Date of Analysis: 5/2/16 07	:21 AM
Compound		%Recovery	
cis-1,2-Dichloroethene		108	
trans-1,2-Dichloroethene		107	
Tetrachloroethene		105	
Trichloroethene		106	
Vinyl Chloride		113	
Benzene		108	
Toluene		111	
Ethyl Benzene		110	
m,p-Xylene		110	
o-Xylene		112	

		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	108	70-130



Client Sample ID: LCS Lab ID#: 1604616A-08A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: Dil. Factor:	v050205 1.00		
Compound			
Naphthalene		63	60-140
Container Type: NA - Not App	olicable		
Surrogates		%Recovery	Method Limits
1,2-Dichloroethane-d4		106	70-130
Toluene-d8		102	70-130
4-Bromofluorobenzene		104	70-130



Client Sample ID: LCSD Lab ID#: 1604616A-08AA MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: Dil. Factor:	v050206 1.00	Date of Collect Date of Analys	tion: NA is: 5/2/16 10:07 AM
Compound		%Recovery	
Naphthalene		60	60-140
Container Type: NA - Not Ap	plicable		Method
Surrogates		%Recovery	Limits
1,2-Dichloroethane-d4		105	70-130
Toluene-d8		101	70-130
4-Bromofluorobenzene		99	70-130



Client Sample ID: LCS Lab ID#: 1604616A-08B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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File Name: Dil. Factor:	v050205sim 1.00	Date of Collec Date of Analy	ction: NA sis: 5/2/16 09:25 AM
Compound		%Recovery	Method Limits
cis-1,2-Dichloroethene		91	70-130
trans-1,2-Dichloroethene		94	70-130
Tetrachloroethene		90	70-130
Trichloroethene		90	70-130
Vinyl Chloride		100	70-130
Benzene		92	70-130
Toluene		94	70-130
Ethyl Benzene		93	70-130
m,p-Xylene		90	70-130
o-Xylene		95	70-130

······		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	108	70-130



Client Sample ID: LCSD Lab ID#: 1604616A-08BB MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name: Dil. Factor:	v050206sim 1.00	Date of Collection: NA Date of Analysis: 5/2/16 10:07 AM				
Compound		%Recovery	Method Limits			
cis-1,2-Dichloroethene		90	70-130			
trans-1,2-Dichloroethene		94	70-130			
Tetrachloroethene		89	70-130			
Trichloroethene		90	70-130			
Vinyl Chloride		99	70-130			
Benzene		92	70-130			
Toluene		94	70-130			
Ethyl Benzene		92	70-130			
m,p-Xylene		88	70-130			
o-Xylene		92	70-130			

·····		Method
Surrogates	%Recovery	Limits
1,2-Dichloroethane-d4	106	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	105	70-130

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5/5/2016 Mr. Paul King P & D Environmental 55 Santa Clara Suite 240 Oakland CA 94610

Project Name: SNOW CLEANERS 2678 COOLIDGE AVE OAKLAND Project #: 0298 Workorder #: 1604616B

Dear Mr. Paul King

The following report includes the data for the above referenced project for sample(s) received on 4/28/2016 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-3 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kga Vych

Kyle Vagadori Project Manager

180 Blue Ravine Road, Suite B Folsom, CA 95630



WORK ORDER #: 1604616B

Work Order Summary

CLIENT:	Mr. Paul King	BILL TO:	Mr. Paul King
	P & D Environmental		P & D Environmental
	55 Santa Clara		55 Santa Clara
	Suite 240		Suite 240
	Oakland, CA 94610		Oakland, CA 94610
PHONE:	510-658-6916	P.O. #	
FAX:	510-834-0772	PROJECT #	0298 SNOW CLEANERS 2678
DATE RECEIVED:	04/28/2016	CONTACT:	COOLIDGE AVE OAKLAND Kyle Vagadori
DATE COMPLETED:	05/05/2016	continent	ityle v ugudoli

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	CS1	Modified TO-3	4.3 "Hg	5 psi
02A	CS2	Modified TO-3	3.7 "Hg	4.9 psi
03A	CS3	Modified TO-3	5.1 "Hg	5 psi
04A	CS3-DUP	Modified TO-3	5.3 "Hg	4.9 psi
05A	AMBIENT	Modified TO-3	2.2 "Hg	5.1 psi
06A	Lab Blank	Modified TO-3	NA	NĂ
07A	LCS	Modified TO-3	NA	NA
07AA	LCSD	Modified TO-3	NA	NA

CERTIFIED BY:

layes

05/05/16 DATE:

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. 180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

🎲 eurofins

LABORATORY NARRATIVE Modified TO-3 P & D Environmental Workorder# 1604616B

Five 6 Liter Summa Canister (SIM Certified) samples were received on April 28, 2016. The laboratory performed analysis for volatile organic compounds in air via modified EPA Method TO-3 using gas chromatography with flame ionization detection. The method involves concentrating up to 200 mL of sample. The concentrated aliquot is then dry purged to remove water vapor prior to entering the chromatographic system.

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

Requirement	ТО-3	ATL Modifications
Daily Calibration Standard Frequency	Prior to sample analysis and every 4 - 6 hrs	Prior to sample analysis and after the analytical batch = 20 samples.</td
Initial Calibration Calculation	4-point calibration using a linear regression model	5-point calibration using average Response Factor
Initial Calibration Frequency	Weekly	When daily calibration standard recovery is outside 75 - 125 %, or upon significant changes to procedure or instrumentation
Moisture Control	Nafion system	Sorbent system
Minimum Detection Limit (MDL)	Calculated using the equation $DL = A+3.3S$, where A is intercept of calibration line and S is the standard deviation of at least 3 reps of low level standard	40 CFR Pt. 136 App. B
Preparation of Standards	Levels achieved through dilution of gas mixture	Levels achieved through loading various volumes of the gas mixture

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

- B Compound present in laboratory blank greater than reporting limit.
- 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 detection limit.
- M Reported value may be biased due to apparent matrix interferences.

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-3 GC/FID

Client Sample ID: CS1

Lab ID#: 1604616B-01A

Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Stoddard Solvent	0.039	0.23	0.60	3.5
Client Sample ID: CS2				
Lab ID#: 1604616B-02A				
Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Stoddard Solvent	0.038	0.22	0.31	1.8
Client Sample ID: CS3				
Lab ID#: 1604616B-03A				
Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Stoddard Solvent	0.040	0.23	0.99	5.8
Client Sample ID: CS3-DUP				
Lab ID#: 1604616B-04A				
Compound	Rpt. Limit (ppmv)	Rpt. Limit (ug/L)	Amount (ppmv)	Amount (ug/L)
Stoddard Solvent	0.040	0.24	0.87	5.0

Client Sample ID: AMBIENT

Lab ID#: 1604616B-05A

No Detections Were Found.



Client Sample ID: CS1 Lab ID#: 1604616B-01A MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d050404	Date of Collection: 4/26/16 5:17:0			
Dil. Factor:	1.56	Date of Analysis: 5/4/16 01:17 PM			
Compound	Rpt. Limit	Rpt. Limit	Amount	Amount	
	(ppmv)	(ug/L)	(ppmv)	(ug/L)	
Stoddard Solvent	0.039	0.23	0.60	3.5	

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	99	75-150



Client Sample ID: CS2 Lab ID#: 1604616B-02A MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d050405	Date of Collection: 4/26/16 5:17:0				
Dil. Factor:	1.52	Date of Analysis: 5/4/16 01:56 PM				
Compound	Rpt. Limit	Rpt. Limit	Amount	Amount		
	(ppmv)	(ug/L)	(ppmv)	(ug/L)		
Stoddard Solvent	0.038	0.22	0.31	1.8		

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	99	75-150



Client Sample ID: CS3 Lab ID#: 1604616B-03A MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d050406	Date of Collection: 4/26/16 5:20:			
Dil. Factor:	1.61	Date of Analysis: 5/4/16 02:28 P			
Compound	Rpt. Limit	Rpt. Limit	Amount	Amount	
	(ppmv)	(ug/L)	(ppmv)	(ug/L)	
Stoddard Solvent	0.040	0.23	0.99	5.8	

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	100	75-150



Client Sample ID: CS3-DUP Lab ID#: 1604616B-04A MODIFIED EPA METHOD TO-3 GC/FID

File Name: Dil. Factor:	d050407 1.62		e of Collection: 4/20 e of Analysis: 5/4/1				
Compound	ound Rpt. Limit		• • • • •		Amount (ppmv)	Amount (ug/L)	
Stoddard Solvent	0.040	0.24	0.87	5.0			

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Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	102	75-150



Client Sample ID: AMBIENT Lab ID#: 1604616B-05A MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d050408		26/16 6:06:00 PM		
Dil. Factor:	1.46		/16 03:46 PM		
Compound	Rpt. Limit	Rpt. Limit	Amount	Amount	
	(ppmv)	(ug/L)	(ppmv)	(ug/L)	
Stoddard Solvent	0.036	0.21	Not Detected	Not Detected	

-

Surrogates	%Recovery	Method Limits
Fluorobenzene (FID)	101	75-150



Client Sample ID: Lab Blank Lab ID#: 1604616B-06A MODIFIED EPA METHOD TO-3 GC/FID

File Name:	d050403	Date of Collection: NA							
Dil. Factor:	1.00	Date of Analysis: 5/4/16 12:01 PM							
Compound	Rpt. Limit	Rpt. Limit	Amount	Amount					
	(ppmv)	(ug/L)	(ppmv)	(ug/L)					
Stoddard Solvent	0.025	0.14	Not Detected	Not Detected					

_		Method
Surrogates	%Recovery	Limits
Fluorobenzene (FID)	97	75-150



Client Sample ID: LCS Lab ID#: 1604616B-07A MODIFIED EPA METHOD TO-3 GC/FID

Compound	%Recovery	Method Limits		
Ote defend Only and				
Stoddard Solvent	103	60-140		
Container Type: NA - Not Applicable				
Surrogates	%Recovery	Method Limits		



Client Sample ID: LCSD Lab ID#: 1604616B-07AA MODIFIED EPA METHOD TO-3 GC/FID

File Name: Dil. Factor:	d050415 1.00		Date of Collection: NA Date of Analysis: 5/4/16 08:10 PM					
Compound Stoddard Solvent		%Recovery	Methoo Limits 60-140					
		112						
Container Type: NA - Not A	oplicable							
			Method					
Surrogates		%Recovery	Limits					
Fluorobenzene (FID)		88	75-150					

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