CORNERSTONE EARTH GROUP

Type of Services	**Soil Vapor Quality Evaluation**
Location	**3655 North First Street, and 77, 85 and 99 West Tasman Drive San Jose, California**
Client	**David J. Powers & Associates, Inc.**
Client Address	**1871 The Alameda, Suite 200 San Jose, California 95126**
Project Number	**118-37-3**
Date	**January 22, 2013**

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SECTION 1: INTRODUCTION

This report presents the results of the Soil Vapor Quality Evaluation performed at 3655 North First Street, and 77, 85 and 99 W. Tasman Drive in San Jose, California (Site) as shown on Figures 1 and 2. This work was performed for David J. Powers & Associates (Powers) in accordance with our December 17, 2012 Agreement (Agreement). Cornerstone Earth Group, Inc. (Cornerstone) understands that Powers is assisting Samsung Semiconductor, Inc. (Samsung) through the California Environmental Quality Act (CEQA) process for the expansion of their current facility (approximately 300,000 square feet) in North San Jose. The proposed development includes the demolition of the existing on-Site buildings and the construction of a 10-story building (1,131,491 square feet) with structured parking (1,560 cars).

The Site consists of two parcels (APN 097-53-026 and 027). The parcels were previously agricultural and were developed in the early 1980s with four buildings. The two buildings on parcel 026 were expanded and combined during the 1990s into the existing building at 3655 N. First Street. We recently performed a Phase I Environmental Site Assessment (Phase I ESA, 2012) and Geotechnical Feasibility Study; a Phase I ESA and Phase II Site Investigation were performed by others during the 1990s for Samsung.

1.1 BACKGROUND

Based on the information obtained during the Phase I ESA (Cornerstone 2012), the Site historically was used for agricultural purposes (row crops) since at least the 1930s. The Site was developed in approximately 1984 with the existing commercial buildings. The on-Site buildings at 3655 North First Street and 77 West Tasman Drive were expanded and combined in 1995. These buildings appear to have been occupied by Samsung since 1988.

The 85 West Tasman Drive building was occupied between approximately 1985 and 1996 by Silicon General (*a.k.a.*, Symmetricom and Telecom Solutions). Based on an internet search, Silicon General was a supplier of linear integrated circuits and changed its name to Symmetricom in 1993; Telecom Solutions was a division of Symmetricom. Samsung has occupied the building since approximately 1996.

Between 1985 and 2006, the 99 West Tasman Drive building appears to have been a multi-tenant building. Reported past occupants included Unicorn Microelectronics, Mitsubishi Kasei America (*a.k.a.*, Mitsubishi Chemical), Peer Research, Plasmon Data Systems, Deerfield Realty, Kause Corporation, Trinet Networking and Training, Omni Professional Ltd., and Wichorus, Inc. The building appears to have been occupied by Samsung since 2007.

In 1988, Wahler was retained by Samsung to evaluate soil, soil vapor and ground water quality on a portion of the Site (3655 North First Street and 77 West Tasman Drive). A soil-vapor survey was performed that included the collection of 36 soil vapor samples collected from approximate depths of 5 and 6 feet (Wahler, 1988). Note that sample collection was not performed per today's protocols. However, low concentrations of volatile organic compounds (VOCs) were reported: TCA (23 of 36 samples) – 0.0006 to 0.1 micrograms per liter (µg/L) (residential CHHSL[1] at 991 µg/L and commercial CHHSL at 2,790 µg/L); trichloroethene (TCE, 23 of 36 samples) – 0.003 to 0.4 µg/L (residential CHHSL at 0.528 µg/L and commercial CHHSL at 1.77 µg/L); and perchloroethene (PCE, 36 of 36 samples) – 0.001 to 0.02 µg/L (residential CHHSL at 0.18 µg/L and commercial CHHSL at 0.603 µg/L). Methane also was detected in 36 of 36 samples, with concentrations ranging from 5 to 2,000 µg/L (or 0.3%). The greatest concentration was reported in soil vapor sample C-1; however, methane was detected at much lower concentrations (5 to 46 µg/L) in the other 35 soil vapor samples. The lower explosive limit for methane is 5%. Total petroleum hydrocarbons (TPH) were detected in 4 of the 36 samples at concentrations ranging from 2 to 49 µg/L (residential ESL at 10 µg/L and commercial ESL at 29 µg/L); benzene, toluene and xylenes were not detected.

Three ground water monitoring wells (SAM-1, SAM-2, and SAM-3) were installed in 1986 on the adjacent (off-Site) parcel at 3725 North First Street, and in 1988 two on-Site monitoring wells (SAM-4 and SAM-5) were installed. Ground water reportedly was encountered at approximately 12 to 13 feet below the ground surface. Ground water monitoring wells SAM-1, SAM-4 and SAM-5 were sampled on August 15, 1988. In SAM-5, bis(2-ethylhexyl)phthalate was detected at 58 ppb (ground water ESL at 4 µg/L). No VOCs, pesticides or other semi-VOCs were detected. One of the two on-Site wells (SAM-5) was destroyed in 1995 under permit from the Santa Clara Valley Water District (McLaren Hart, 1995)

A Soil Quality Evaluation was performed by Cornerstone in December, 2012. Nine exploratory borings (SB-1 to SB-9) were advanced across the Site to a maximum depth of approximately 15-feet using truck-mounted hollow-stem auger (SB-1, SB-3 through SB-9) and limited-access Minuteman auger (SB-2) drilling equipment. Soil was sampled from the hollow stem auger borings in approximately 5 foot intervals to the total depth of the borings of approximately 15 feet. Organic vapors were measured in the field using an organic vapor meter (OVM) by placing

[1] California Human Health Screening Levels (CHHSLs) are used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil at concentrations below the corresponding CHHSLs can be assumed not to pose a significant health risk. Please note that the San Francisco Bay Regional Water Quality Control Board (Water Board, 2008) has also developed Environmental Screening Levels (ESLs). The ESLs are a compilation of screening levels for not only risk to human health but a number of other environmental concerns. Per Cal/EPA guidance (January 2005), "The ESLs are intended for use only at sites overseen by that agency". If a CHHSL doesn't exist for a detected compound, Cal/EPA recommends using the Regional Screening Levels (RSLs) developed by the EPA (Region 9, 2012). In the event, there are no CHHSLs or RSLs available, such as for petroleum hydrocarbons, Cal/EPA allows the data to be compared to ESLs.

the tip of the OVM against a freshly split surface immediately after sample collection. Organic vapors were not detected or were detected at concentrations less than 1 part per million by volume (ppm_v) on soil samples collected.

VOCs (including TPH as gasoline) were not detected at or above laboratory reporting limits in the 15 soil samples (Core-N-1 capsules) analyzed (collected at approximate depths of 1 to 1½, 4½ to 5, and 14½ to 15 feet). Several semi-VOCs and PAHs were reported but at low frequencies of detection and low concentrations (below their respective residential CHHSLs, RSLs or ESLs): benz(a)anthracene, benzo(g,h,i)perylene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.

1.2 PURPOSE

The purpose of this work is to evaluate soil vapor quality.

1.3 SCOPE OF WORK

As presented in our Agreement, the scope of work performed included the following:

- Permitting, drilling and logging of seven exploratory borings;
- Installation of 14 dual nested soil vapor probes (approximately 5 and 10 feet) in seven exploratory borings
- Collection of 14 soil vapor samples for laboratory analyses; and
- Preparation of this report

The limitations for this investigation are presented in Section 4.

SECTION 2: SOIL VAPOR QUALITY EVALUATION

2.1 SUBSURFACE INVESTIGATION

Field activities were performed on December 21, 2012. Our field engineer and geologist directed a subsurface exploration, logged in general accordance with the Unified Soil Classification System (ASTM D-2487), and sampled seven exploratory borings (SV-1 to SV-7) to a maximum depth of approximately 10 feet using track-mounted Geoprobe hydraulic drilling equipment equipped with a dual wall casing. Exploratory boring locations are shown on Figure 2.

To provide additional soil quality data, soil samples collected from SV-1 to SV-7 also were evaluated for organic vapors using an organic vapor meter (OVM). Soil samples were continuously collected from the soil vapor probe borings in acetate liners. Holes were drilled into the liners in approximately 1 foot intervals. The tip of the OVM was inserted into the liner

evaluate organic vapor concentrations. Organic vapors were not detected or were detected at concentrations less than 1 ppm_v.

2.1.1 Subsurface Materials and Ground Water

Subsurface materials encountered in the exploratory borings generally consisted of sandy clays to clays within in the upper approximately 10 feet. Approximately 2 to 4 feet of fill material was encountered in all the boring locations. Fill materials consisted of sandy clays with varying amounts of gravel. Increased sand content was observed in the clays at approximately 9 or 10 feet in the soil vapor borings, locally becoming clay with sand or sandy clay. Ground water was not encountered during the field work.

2.2 SOIL VAPOR QUALITY EVALUATION

Protocols presented below follow the general requirements of the April 2012 document entitled, "Advisory – Active Soil Gas Investigations", prepared by the Department of Toxic Substances and Control and Los Angeles and San Francisco Regional Water Quality Control Boards.

2.2.1 Temporary 5-foot and 10-foot Soil Vapor Probe Installation

The soil vapor wells were installed with stainless steel expendable tips and screens affixed to Teflon™ tubing within sand intervals. Each upper sand interval extended from depths of approximately 5 to 5½ feet. Each lower sand interval extended from depths of approximately 10 to 10 ½ feet. The wells were constructed by first placing approximately 3 inches of #2/16 Monterey sand into the bottom of the borehole. The stainless steel tip and tubing was then lowered into the borehole via a tremie pipe. Additional sand was then placed in the borehole via tremie when needed to create an approximately ½ foot sand pack interval around the vapor tip. Approximately ½ foot of dry granular bentonite (Benseal™) was placed on top of the sand pack. Hydrated bentonite was then placed down-hole by the approximate mixing of 50% water to bentonite in less than ½ foot lifts to just below the upper sand interval. Dry granular bentonite was then placed via tremie to support the sand interval that began in each boring at a depth of approximately 5 ½ feet. Approximately 3 inches of sand then was placed on the dry granular bentonite. A stainless steel tip and tubing then was lowered into the borehole via a tremie pipe. Additional sand was then placed in the borehole via tremie when needed to create an approximately ½ foot upper sand pack interval around the vapor tip. Approximately ½ foot of granular bentonite (Benseal™) was placed on top of the sand pack. Hydrated bentonite was then placed down-hole by the approximate mixing of 50% water to bentonite in less than ½ foot lifts to approximately 2 feet below surface. Neat portland cement then was mixed and placed within the borehole and entered the bottom of a 9-inch tall, 5-inch inside diameter vault box set flush with the surface to protect the capped tubing. The Teflon™ tubing was labeled with depth of placement and capped utilizing a vapor-tight Swagelok valve set in the "off" position.

2.2.2 Soil Vapor Sample Collection

Sampling of the temporary vapor probes was performed on January 7 and 8, 2013 by a California registered Professional Geologist. A 167 milliliters-per-minute flow regulator inclusive of a particulate filter was fitted to a vacuum gauge and the shut-off valve and the other end to a "T" fitting. A Summa canister was connected to the "T" fitting. The other end of the "T" fitting was affixed to a digital vacuum gauge and a 1-liter Summa canister utilized for purging.

A minimum 1-minute vacuum tightness test was performed on the manifold and connections by opening and closing the 1-liter purge canister valve and applying and monitoring a vacuum on the vacuum gauge. The sample shut-off valve on the downhole side of the sampling manifold remained in the "off" position. When gauge vacuum was maintained for at least 1 minute without any decrease, purging began. The downhole shut off valve was opened and approximately one tubing volume of vapor was purged using the 1-liter Summa. The volume of vapor removed was verified by the calculated versus observed pressure drop in the purging Summa canister. The purge volume was calculated based on the length and inner diameter of the sampling probe and the connected sampling tubing and equipment. Assuming the vapor probe was properly sealed, the borehole sand pack vapor space will have equilibrated with the surrounding vapors following the more than 2 week equilibration period. Thus, the sand pack and dry bentonite vapor space was not included in the purge volume calculation.

2.2.3 Soil Vapor Laboratory Analyses

To evaluate soil vapor quality, the soil vapor samples collected from soil vapor probes SV-1 through SV-7 were analyzed for full list VOCs (EPA Test Method TO-15), aliphatic and aromatic total petroleum hydrocarbons (TPHg) (EPA Test Method TO-15), and fixed gases oxygen, nitrogen, carbon dioxide, and methane. Analytical results are summarized in Table B in the tables section of this report. The analytical datasheets are presented in Appendix B. Analytical results are discussed in Section 2.3.

2.2.4 Soil Vapor Sample Integrity Evaluation

Isopropyl alcohol (2-propanol, 91 percent) was utilized as a leak detection compound during sampling by applying approximately 10 to 15 drops to cotton gauze and placing the moistened gauze near the borehole and allowing to equilibrate within the shroud. Sampling began by opening the Summa canister valve. Immediately upon opening the sampling valve, the shroud was placed over and enclosed the atmosphere of the borehole and entire sampling train including all connections.

A data logging PID was utilized during sampling to monitor the atmosphere inside the shroud through a bulk-head fitting. The logged data (at minimum 30 second intervals) was corrected to parts per million by volume isopropyl alcohol concentrations and utilized to evaluate the integrity of the sampling train.

2-propanol only was detected in 2 of 15 samples collected above its laboratory reporting limits, which ranged from <11 micrograms per cubic meter ($\mu g/m^3$) to <520 $\mu g/m^3$. At SV-6D5.25 and

SV-7D10.25 2-propanol was detected at 32 µg/m^3 and 120 µg/m^3, respectively. The calculated maximum approximate leakage rate based on the detected concentrations of 2-propanol was 0.19%. The maximum possible leakage rate based on the elevated detection limits was 0.76%. This data indicates that the sample trains were tight and no significant leakage occurred.

To confirm the isopropyl alcohol atmosphere, one confirmation sample was collected from the shroud atmosphere by utilizing a 250mL Summa and micro flow controller. Laboratory analyses of the shroud atmosphere sample collected during initial sampling of SV-6D5.25 on January 8, 2013 contained 2-propanol at 44,000 µg/m^3. During the same sampling time period (approximately 2 minutes), the shroud atmosphere was measured by the PID to contain approximately 39,800 µg/m^3 (approximately 10 percent relative percent difference [RPD] below the laboratory reported value). The PID appeared to slightly underestimate the shroud atmosphere.

2.3 DISCUSSION OF RESULTS – SOIL VAPOR

The reported analytical data were compared to the following screening levels: residential and commercial CHHSLs and ESLs. Detected compounds are presented in Table A (VOCs), Table B (petroleum hydrocarbons) and Table C (Oxygen, Methane, Nitrogen and Carbon Dioxide) in the table section of this report.

Benzene was detected in 14 of 14 soil vapor samples at concentrations ranging between 21 µg/m^3 (SV-5 D5.25) and 280 µg/m^3 (SV-1 D10.5). Benzene was detected in 11 of 14 soil vapor samples at concentrations exceeding the residential CHHSL of 85 µg/m^3. However, benzene only was detected in 1 of 14 soil vapor samples at a concentration equal to the commercial CHHSL (280 µg/m^3).

Chloroform was detected in 13 of 14 soil vapor samples at concentrations up to 600 µg/m^3 (SV-4 5.25). A CHHSL has not been established for chloroform in soil vapor. Chloroform was detected in 3 of 14 soil vapor samples at concentrations exceeding the residential ESL (460 µg/m^3); chloroform was not detected at concentrations exceeding the commercial ESL (1,500 µg/m^3).

Toluene was detected in 13 of 14 soil vapor samples at concentrations ranging between 28 µg/m^3 (SV-6 D10.25) to 140 µg/m^3 (SV-6 D5.25). The residential and commercial CHHSLs for toluene are 320,000 µg/m^3 and 890,000 µg/m^3, respectively.

Ethyl benzene was detected in 6 of 14 soil vapor samples at concentrations ranging between 19 µg/m^3 (SV-5 D10.25) to 50 µg/m^3 (SV-1 D5.25). The residential and commercial CHHSLs for ethyl benzene are 1,100 µg/m^3 and 3,600 µg/m^3, respectively.

Total xylenes were detected in 11 of 14 soil vapor samples at concentrations ranging between 20 µg/m^3 (SV-6D10.25) to 332 µg/m^3 (SV-6 D5.25). The residential and commercial CHHSLs for xylenes are 740,000 µg/m^3 and 2,100,000 µg/m^3, respectively.

Total petroleum hydrocarbons in the gasoline range (TPHg, the sum of aliphatic and aromatic hydrocarbons) were detected at concentrations up to 5,540 µg/m^3 (SV-7 D5.25). Aliphatic hydrocarbons were reported in 8 of 14 soil vapor samples at concentrations ranging between 140 µg/m^3 (SV-5 D10.25) to 2,500 µg/m^3 (SV-7 D5.25). Aromatic hydrocarbons were reported in 5 of 14 samples at concentrations ranging from 110 µg/m^3 (SV-5 D10.25) to 920 µg/m^3 (SV-6 D5.25). Therefore, the TPHg detections appear mainly due to the presence of aliphatic hydrocarbons, which have a lower toxicity than the aromatic hydrocarbons. There is no CHHSL established for TPHg. The residential and commercial ESL for TPHg are 10,000 µg/m^3 and 29,000 µg/m^3, respectively.

Laboratory analyses of soil vapor samples collected from depths of approximately 5 and 10 feet from probes SV-1 through SV-7 detected low concentrations of several other VOCs, including bromodichloromethane (maximum 42 µg/m^3; commercial ESL at 460 µg/m^3) and styrene (maximum 8.4 µg/m^3; commercial ESL at 530,000 µg/m^3).

Several other VOCs were detected in the soil vapor samples including: 4-ethyltoluene, 2-propanol, carbon disulfide, heptane, ethanol, cyclohexane, hexane, tetrahydrofuran, 2,2,4-trimethylpentane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and 1,2,4-trimethylbenzene. No CHHSLs or ESLs are established for these compounds.

Laboratory analyses of soil vapor samples collected from depths of approximately 5 and 10 feet from probes SV-1 through SV-7 detected oxygen at concentrations ranging between 6 and 16 percent; methane at concentrations ranging between 0.00078 to 0.0092 percent; nitrogen between 80 to 90 percent; and carbon dioxide between 1 and 7.1 percent.

SECTION 3: CONCLUSIONS

3.1 SOIL VAPOR QUALITY

Laboratory analyses of soil vapor samples collected during this investigation did not detect VOCs at concentrations exceeding the commercial CHHSLs. In addition, during field work, soil samples collected from borings SV-1 to SV-7 also were evaluated for organic vapors using an organic vapor meter (OVM). Organic vapors were not detected or were detected at concentrations less than 1 ppm_v.

In addition, note that a Soil Quality Evaluation also was performed by Cornerstone in December, 2012. Nine exploratory borings (SB-1 to SB-9) were advanced across the Site to a maximum depth of approximately 15-feet. Soil was sampled from the hollow stem auger borings in approximately 5 foot intervals to the total depth of the borings of approximately 15 feet. Organic vapors were measured in the field using an OVM; organic vapors were not detected or were detected at concentrations less than 1 ppm_v. VOCs (including TPHg) were not detected at or above laboratory reporting limits in the 15 soil samples (Core-N-1 capsules) analyzed (collected at approximate depths of 1 to 1½, 4½ to 5, and 14½ to 15 feet).

During this investigation, benzene was detected in14 of 14 soil vapor samples; one sample was reported with a concentration equal to the commercial CHHSL (SV-1D10.25). TPHg was

detected in 8 of 24 samples; toluene was detected in 13 of 14 samples; ethyl benzene was detected in 6 of 14 samples; and total xylenes were detected in 11 of 14 samples. The source of this widespread soil vapor impact is unclear. Based on the information obtained during the Phase I Environmental Site Assessment (Cornerstone, December 2012), no hazardous material incidents were reported in the Site vicinity that would be likely to significantly impact the Site.

In addition, chloroform was detected in 14 of 14 soil vapor samples; in our opinion, the likely source is laboratory contamination.

Because soil vapor quality can vary over time, for a higher level of comfort consideration should be given to resampling the soil vapor monitoring wells.

Prior to construction activities, the soil vapor wells must be appropriately decommissioned under permit by the Santa Clara Valley Water District.

Due to the occupancy of the on-Site structures, this sampling did not evaluate sub-slab vapor. In the absence of this additional characterization data, Cornerstone conservatively recommends the monitoring of Site soils for potential VOC vapors during the removal of building slabs.

SECTION 4: LIMITATIONS

Cornerstone performed this investigation to support David J. Powers and Associates, Inc. in evaluation of soil vapor quality at the Site. David J. Powers and Associates, Inc. understand that the extent of soil quality data obtained is based on the reasonable limits of time and budgetary constraints. In addition, the chemical information presented in this report can change over time and is only valid at the time of this investigation and for the locations sampled.

This report, an instrument of professional service, was prepared for the sole use of David J. Powers and Associates, Inc. and may not be reproduced or distributed without written authorization from Cornerstone.

Cornerstone makes no warranty, expressed or implied, except that our services have been performed in accordance with the environmental principles generally accepted at this time and location.

SECTION 5: REFERENCES

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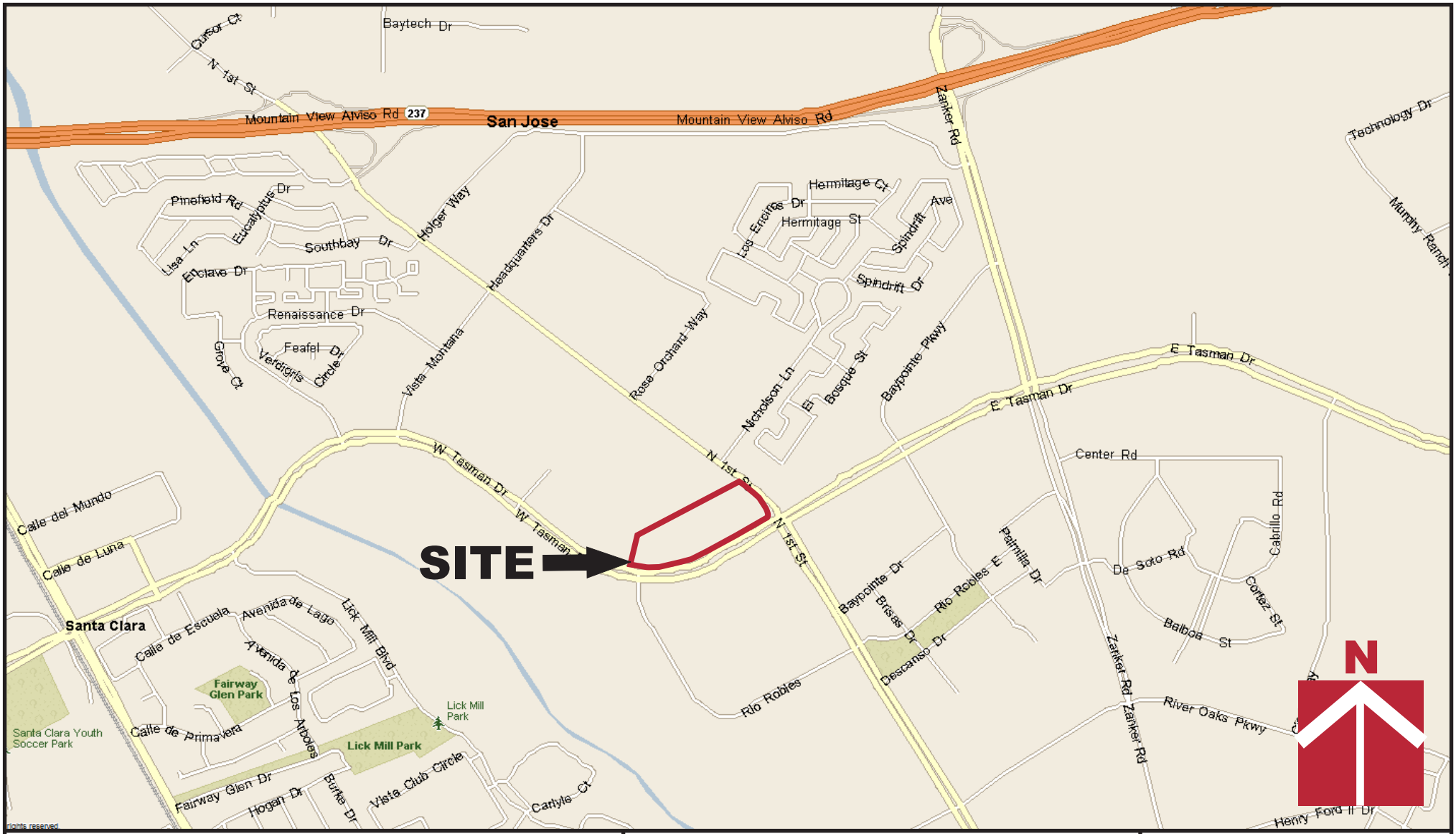

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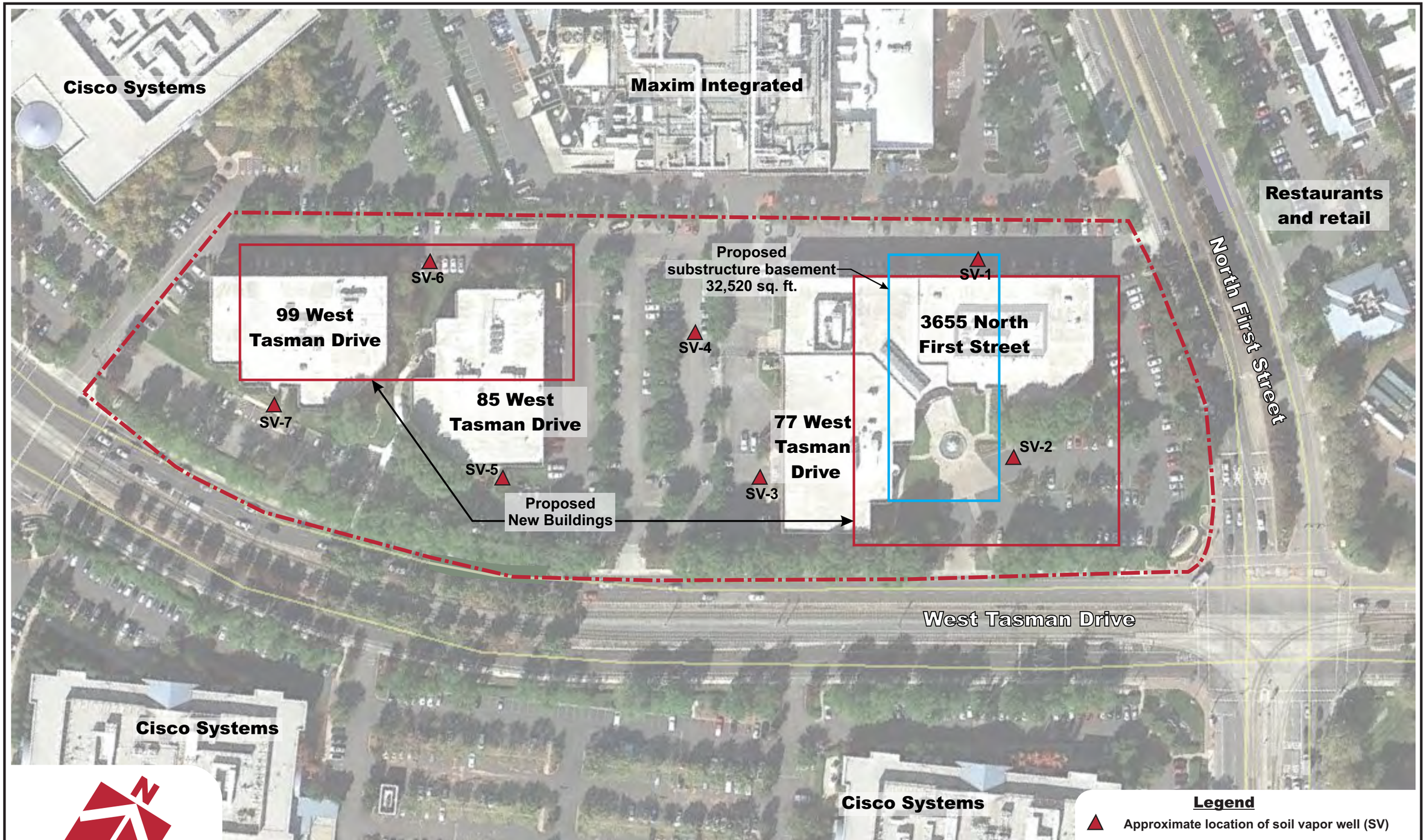
Vicinity Map

Samsung Semiconductor Corporate Headquarters
3655 North First Street
San Jose, CA

Project Number	118-37-3
Figure Number	Figure 1
Date	January 2013
Drawn By	RRN



Base by Google Earth, dated 10/31/2011

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Site Plan showing Soil Vapor

Samsung Semiconductor Corporate Headquarters
3655 North First Street
San Jose, CA

Project Number	118-37-3
Figure Number	Figure 2B
Date	January 2013
Drawn By	RRN

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ANALYTICAL DATA SUMMARY TABLES

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Table A. Analytical Results of Selected Soil Vapor Samples - VOCs

(Concentrations in µg/m^3)

Sample Location	Sample ID	Date	Depth (feet)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2,2,4- Trimethylpentane	2-Propanol	4-Ethyltoluene	4-Methyl-2-pentanone	Benzene	Bromodichloromethane	Carbon Disulfide	Chloroform	Cyclohexane	Ethanol	Ethyl Benzene	Heptane	Hexane	Total Xylenes	Propylbenzene	Styrene	Tetrahydrofuran	Toluene
SV-1	SV-1D5.25	1/7/13	5¼	170	74	96	<23	120	<9.7	96	28	84	260	26	<18	50	16	83	311	21	<10	<7.0	120
	SV-1D10.5		10½	<72	<72	<68	<140	<72	<60	280	<98	<180	160	<50	<110	<63	<60	76	<63	<72	<62	<43	98
SV-2	SV-2D5.25	1/7/13	5¼	100	69	67	<140	92	<57	180	<93	<170	370	<48	<100	<60	<57	82	228	<68	<59	<41	130
	SV-2D10.25		10¼	<260	<260	<250	<520	<260	<220	210	<360	<660	<260	<180	<400	<230	<220	<190	<230	<260	<220	<160	<200
SV-3	SV-3D5.25	1/8/13	5¼	<92	<92	<87	<180	<92	130	99	<120	<230	260	<64	<140	<81	<76	<66	100	<92	<79	<55	90
	SV-3D10.25		10¼	<98	<98	<93	<200	<98	<82	220	<130	<250	230	<68	<150	<86	<82	<70	95	<98	<85	<59	87
SV-4	SV-4D5.25	1/8/13	5¼	34	17	<15	<32	31	<13	70	52	100	530	16	<24	22	<13	19	86	<16	<14	<9.6	90
	SV-4D5.25R		5¼	54	23	12	<24	43	<10	68	57	95	600	<8.5	<19	28	<10	<8.7	113	<12	<10	9.6	99
	SV-4D10.25		10¼	<27	<27	37	<54	<27	<22	160	<37	200	490	39	<41	<24	<22	<19	<24	<27	<23	<16	62
SV-5	SV-5D5.25	1/8/13	5¼	120	48	<5.3	<11	75	<4.7	21	16	30	120	<3.9	9.5	22	<4.7	<4.0	154	12	<4.9	9.4	50
	SV-5D10.25		10¼	36	11	14	<11	25	<4.7	47	42	81	580	24	<8.6	19	<4.7	11	105	5.9	<4.9	4.5	40
SV-6	SV-6D5.25	1/8/13	5¼	170	98	110	32	140	<6.2	110	26	150	300	38	<11	48	<6.2	55	332	20	8.4	17	140
	SV-6D10.25		10¼	19	<16	31	<31	<16	<13	100	<21	79	93	50	<24	<14	<13	81	20	<16	<14	17	28
SV-7	SV-7D5.25	1/8/13	5¼	160	97	140	<31	130	<13	120	<21	180	290	35	<24	47	<13	27	260	22	<13	18	120
	SV-7D10.25		10¼	36	23	58	120	26	<14	150	<22	100	120	15	<25	<15	<14	36	54	<16	<14	<9.9	34
Residential CHHSL[1]				NE	NE	NE	NE	NE	NE	85	NE	NE	NE	NE	NE	1,100	NE	NE	740,000	NE	NE	NE	320,000
Commercial CHHSL[1]				NE	NE	NE	NE	NE	NE	280	NE	NE	NE	NE	NE	3,600	NE	NE	2,100,000	NE	NE	NE	890,000
Residential ESL				NE	NE	NE	NE	NE	NE	84	140	NE	460	NE	NE	980	NE	NE	21,000	NE	190,000	NE	63,000
Commercial ESL				NE	NE	NE	NE	NE	NE	280	460	NE	1,500	NE	NE	3,300	NE	NE	58,000	NE	530,000	NE	180,000

1 California Human Health Screening Level (CHHSL) - Table 2 Soil Gas Screening Numbers for Volatile Chemicals Below Buildings Constructed with Engineered Fill Below Sub-Slab Gravel

2 Environmental Screening Level (ESL) - San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) - May 2008

NE Not Established

< Not detected at or above laboratory detection limit

BOLD Concentration exceeds CHHSL or ESL

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Table B. Analytical Results of Selected Soil Vapor Samples - Hydrocarbons

(Concentrations in µg/m^3)

Sample Location	Sample ID	Date	Depth (feet)	C5-C6 Aliphatic Hydrocarbons	C6-C8 Alphiatic Hydrocarbons	C8-C10 Alphiatic Hydrocarbons	C10-C12 Alphiatic Hydrocarbons	C8-C10 Aromatic Hydrocarbons	C10-C12 Aromatic Hydrocarbons	Total Petroleum Hydrocarbons in gasoline range (TPHg)
SV-1	SV-1D5.25	1/7/13	5¼	490	1,500	400	840	830	<260	4,060
	SV-1D10.5		10½	<940	<1,200	<1,700	<2,000	<1,400	<1,600	<2,000
SV-2	SV-2D5.25		5¼	<900	<1,100	<1,600	<1,900	<1,400	<1,500	<1,900
	SV-2D10.25		10¼	<3,400	<4,300	<6,200	<7,400	<5,200	<5,800	<7,400
SV-3	SV-3D5.25	1/8/13	5¼	<1,200	<1,500	<2,200	<2,600	<1,800	<2,000	<2,600
	SV-3D10.25		10¼	<1,300	<1,600	<2,300	<2,800	<2,000	<2,200	<2,800
SV-4	SV-4D5.25		5¼	<210	<270	<380	<450	<320	<360	<450
	SV-4D5.25R		5¼	<160	<200	<290	790	<240	<270	790
	SV-4D10.25		10¼	440	700	<640	<770	<540	<600	1,140
SV-5	SV-5D5.25		5¼	<74	<94	<130	890	490	<120	1,380
	SV-5D10.25		10¼	210	360	140	310	110	<120	1,130
SV-6	SV-6D5.25		5¼	860	760	380	2,400	920	<170	5,320
	SV-6D10.25		10¼	1,900	920	<370	470	<310	<350	3,290
SV-7	SV-7D5.25		5¼	950	910	420	2,500	760	<350	5,540
	SV-7D10.25		10¼	640	600	<390	1,200	<330	<370	2,440
Residential ESL[1]				10,000	10,000	10,000	10,000	10,000	10,000	10,000
Commercial ESL[1]				29,000	29,000	29,000	29,000	29,000	29,000	29,000

1 No CHHSL established for TPHg; Environmental Screening Level (ESL) - San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) - May 2008

< Not detected at or above laboratory detection limit

CORNERSTONE EARTH GROUP

Table C. Analytical Results of Selected Soil Vapor Samples - Oxygen, Methane, Nitrogen, and Carbon Dioxide
(Concentrations in percent)

Sample Location	Sample ID	Date	Depth (feet)	Oxygen	Methane	Nitrogen	Carbon Dioxide
SV-1	SV-1D5.25	1/7/13	5¼	13	<0.00064	84	2.7
	SV-1D10.5		10½	14	0.00078	83	2.8
SV-2	SV-2D5.25		5¼	13	<0.00064	83	3.9
	SV-2D10.25		10¼	14	0.00095	83	3.2
SV-3	SV-3D5.25	1/8/13	5¼	14	0.0026	82	3.5
	SV-3D10.25		10¼	16	0.0017	80	3.4
SV-4	SV-4D5.25		5¼	13	<0.00064	85	2.3
	SV-4D5.25R		5¼	14	<0.00064	84	2.2
	SV-4D10.25		10¼	8.4	0.0017	86	5.3
SV-5	SV-5D5.25		5¼	6	<0.00064	87	7.1
	SV-5D10.25		10¼	4.4	<0.00064	90	5.5
SV-6	SV-6D5.25		5¼	12	0.0014	86	1.6
	SV-6D10.25		10¼	12	0.0034	86	1
SV-7	SV-7D5.25		5¼	2.9	0.0092	94	2.9
	SV-7D10.25		10¼	10	0.0044	87	2.9

CORNERSTONE EARTH GROUP

APPENDIX A – SOIL SAMPLING PROTOCOL AND EXPLORATORY BORING LOGS

Subsurface Investigation. Field activities were performed on December 21, 2012. Our field engineer and geologist directed a subsurface exploration, logged in general accordance with the Unified Soil Classification System (ASTM D-2487), and sampled seven exploratory borings (SV-1 to SV-7) to a maximum depth of approximately 10 feet using track-mounted Geoprobe hydraulic drilling equipment equipped with a dual wall casing. Exploratory boring locations are shown on Figure 2.

To provide additional soil quality data, soil samples collected from SV-1 to SV-7 also were evaluated for organic vapors using an organic vapor meter (OVM). Soil samples were continuously collected from the soil vapor probe borings in acetate liners. Holes were drilled into the liners in approximately 1 foot intervals. The tip of the OVM was inserted into the liner evaluate organic vapor concentrations. Organic vapors were not detected or were detected at concentrations less than 1 ppm_v.

Equipment Decontamination. All sampling equipment was cleaned in a solution of laboratory grade detergent and steam cleaned prior to use at each sample point.

Soil Vapor Well SV-1

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.66 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		3 inches asphalt concrete					(2) .25" diameter Teflon tubes with swagelok valves
			Sandy Clay with Gravel (CL) soft to medium stiff, moist, light brown, >15% fine to medium sand, >15% fine angular gravel, moderate plasticity					Vault box set in Portland Cement to 2'
	2.5		**Clay (CL)** medium stiff to stiff, moist, olive gray, <5% fine sand, some silt, moderate to high plasticity			<1		2.25" Diameter borehole
						<1		Hydrated Bentonite 2-4.5'
	5.0							Dry Bentonite 4.5-5.0'
								AMS Dedicated Tip in 2/16 Sand
						<1		Dry Bentonite 5.5-6.0'
	7.5		trace fine gravel					Hydrated Bentonite 6-9.75'
			color change to light brown					
	10.0		**Clay with Sand (CL)** medium stiff, moist, light brown, <15% fine sand, moderate plasticity			<1		Dry Bentonite 9.75-10.25'
								AMS Dedicated Tip in 2/16 Sand
			Bottom of Boring at 10.7 feet.					
	12.5							
	15.0							

Soil Vapor Well SV-2

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.5 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		9 inches asphalt concrete					(2) .25" diameter Teflon tubes with swagelok valves
			Sandy Clay with Gravel (CL) soft to medium stiff, moist, light brown, >15% fine to medium sand, >15% fine to coarse angular gravel, moderate plasticity					Vault box set in Portland Cement to 2'
	2.5		**Clay (CL)** stiff, moist, olive gray, <5% fine sand, moderate to high plasticity			<1		2.25" Diameter borehole
								Hydrated Bentonite 2-4.3'
						<1		Dry Bentonite 4.3-4.8'
	5.0							AMS Dedicated Tip in 2/16 Sand
						<1		Dry Bentonite 5.5-6.0'
	7.5							Hydrated Bentonite 6-9.5'
			color changes to light brown, slight increase in sand content					
	10.0					<1		Dry Bentonite 9.5-10.0'
								AMS Dedicated Tip in 2/16 Sand
			Bottom of Boring at 10.5 feet.					
	12.5							
	15.0							

Soil Vapor Well SV-3

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.5 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		4 inches asphalt concrete					(2) .25" diameter Teflon tubes with swagelok valves
			Clay with Sand (CL) soft to medium stiff, moist, light brown, >15% fine to medium sand, 10% fine gravel, moderate plasticity					Vault box set in Portland Cement to 2'
			Clay (CL) medium stiff, moist, olive gray, <5% fine sand, moderate to high plasticity			<1		2.25" Diameter borehole
	2.5							Hydrated Bentonite 2-4.5'
	5.0					<1		Dry Bentonite 4.5-5.0'
								AMS Dedicated Tip in 2/16 Sand
								Dry Bentonite 5.5-6.0'
	7.5		color change to light brown			<1		Hydrated Bentonite 6-9.5'
	10.0		**Clay with Sand (CL)** medium stiff, moist, light brown, >15% fine to medium sand, some light gray sandy mottles, moderate plasticity					Dry Bentonite 9.5-10.0'
								AMS Dedicated Tip in 2/16 Sand
			Bottom of Boring at 10.5 feet.					
	12.5							
	15.0							

Soil Vapor Well SV-4

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.66 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		4 inches asphalt concrete					(2) .25" diameter Teflon tubes with swagelok valves
			Silty Clay (CL-ML) stiff, moist, light brown, <15% fine sand, low plasticity			<1		Vault box set in Portland Cement to 2'
	2.5							2.25" Diameter borehole
						<1		Hydrated Bentonite 2-4.5'
	5.0		**Silty Clay (CL-ML)** stiff, moist, light brown, <15% fine sand, some gray silt mottles, low plasticity					Dry Bentonite 4.5-5.0'
								AMS Dedicated Tip in 2/16 Sand
						<1		Dry Bentonite 5.5-6.0'
	7.5							Hydrated Bentonite 6-9.75'
	10.0		Bottom of Boring at 10.7 feet.			<1		Dry Bentonite 9.75-10.25'
								AMS Dedicated Tip in 2/16 Sand
	12.5							
	15.0							

Soil Vapor Well SV-5

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.66 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		**Clay with Sand (CL)** soft to medium stiff, moist, olive gray, >15% fine to medium sand, some roots, trace gravel, moderate plasticity					(2) .25" diameter Teflon tubes with swagelok valves Vault box set in Portland Cement to 2'
	2.5		**Silty Clay (CL-ML)** stiff, moist, light brown, <10% fine sand, some gray silt mottles, low plasticity			<1		2.25" Diameter borehole Hydrated Bentonite 2-4.5'
	5.0					<1		Dry Bentonite 4.5-5.0' AMS Dedicated Tip in 2/16 Sand
	7.5		color change to light brown to brown, slight increase in sand content, some light gray sandy mottles			<1		Dry Bentonite 5.5-6.0' Hydrated Bentonite 6-9.75'
	10.0		Bottom of Boring at 10.7 feet.			<1		Dry Bentonite 9.75-10.25' AMS Dedicated Tip in 2/16 Sand
	12.5							
	15.0							

Soil Vapor Well SV-6

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.5 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		4 inches asphalt concrete					(2) .25" diameter Teflon tubes with swagelok valves
			Clayey Sand with Gravel (SC) [Baserock] olive gray, <20% fines, <65% medium sand, >15% angular gravel					Vault box set in Portland Cement to 2'
			Clay (CL) medium stiff, moist, olive gray, <5% fine sand, moderate to high plasticity			<1		2.25" Diameter borehole
	2.5							Hydrated Bentonite 2-4.5'
						<1		
	5.0							Dry Bentonite 4.5-5.0'
								AMS Dedicated Tip in 2/16 Sand
						<1		Dry Bentonite 5.5-6.0'
	7.5		color change to light brown					Hydrated Bentonite 6-9.5'
			Clay with Sand (CL) soft to medium stiff, moist, light brown, 15 to 25% fine to medium sand, 10% fine gravel, moderate plasticity			<1		Dry Bentonite 9.5-10.0'
	10.0							AMS Dedicated Tip in 2/16 Sand
			Bottom of Boring at 10.5 feet.					
	12.5							
	15.0							

Soil Vapor Well SV-7

CORNERSTONE EARTH GROUP

PROJECT NAME Samsung Semiconductor Corporate Headquarters
PROJECT NUMBER 118-37-3
PROJECT LOCATION San Jose, CA

DATE STARTED 12/21/12 **DATE COMPLETED** 12/21/12
GROUND ELEVATION _____ **BORING DEPTH** 10.5 ft.
DRILLING CONTRACTOR Ross Tinline / Penecore
BORING DIAMETER 0.19 ft
DRILLING METHOD Geoprobe 6610-D
GROUND WATER LEVELS:
LOGGED BY R. Tinline
AT TIME OF DRILLING Not Encountered
PERMIT NUMBER Not Applicable **INSPECTOR** _____
AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0.0		5 inches asphalt concrete					(2) .25" diameter Teflon tubes with swagelok valves
			Clayey Sand with Gravel (SC) [Baserock] olive gray, <20% fines, <65% medium sand, >15% angular gravel					Vault box set in Portland Cement to 2'
			Clay (CL) soft to medium stiff, moist, olive gray, <5% fine sand, moderate to high plasticity			<1		2.25" Diameter borehole
	2.5							Hydrated Bentonite 2-4.5'
	5.0		color change to light brown					Dry Bentonite 4.5-5.0'
								AMS Dedicated Tip in 2/16 Sand
								Dry Bentonite 5.5-6.0'
						<1		
	7.5							Hydrated Bentonite 6-9.5'
			Sandy Clay (CL) medium stiff, moist, light brown, <35% fine to medium sand, moderate plasticity					Dry Bentonite 9.5-10.0'
	10.0					<1		AMS Dedicated Tip in 2/16 Sand
			Bottom of Boring at 10.5 feet.					
	12.5							
	15.0							

CORNERSTONE EARTH GROUP

APPENDIX B – LABORATORY ANALYTICAL REPORTS

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1/16/2013

Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301125A

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1301125A

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-1D5.25	Modified TO-15	17.2 "Hg	15 psi
02A	SV-1D10.5	Modified TO-15	21.6 "Hg	15.4 psi
03A	SV-2D5.25	Modified TO-15	17.6 "Hg	15 psi
04A	SV-2D10.25	Modified TO-15	18.6 "Hg	15 psi
05A	SV-3D5.25	Modified TO-15	17.0 "Hg	15 psi
06A	SV-3D10.25	Modified TO-15	17.8 "Hg	15 psi
07A	SV-4D5.25	Modified TO-15	5.2 "Hg	15 psi
08A	SV-4D5.25R	Modified TO-15	4.4 "Hg	15 psi
09A	SV-4D10.25	Modified TO-15	8.0 "Hg	15 psi
10A	SV-7D5.25	Modified TO-15	20.4 "Hg	15 psi
11A	Lab Blank	Modified TO-15	NA	NA
12A	CCV	Modified TO-15	NA	NA
13A	LCS	Modified TO-15	NA	NA
13AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 01/16/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Cornerstone Earth Group
Workorder# 1301125A

Ten 1 Liter Summa Canister samples were received on January 09, 2013. 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

Samples SV-1D5.25, SV-1D10.5, SV-2D5.25, SV-2D10.25, SV-3D5.25, SV-3D10.25 and SV-7D5.25 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

Dilution was performed on samples SV-1D10.5, SV-2D5.25, SV-2D10.25, SV-3D5.25, SV-3D10.25, SV-4D5.25 and SV-4D10.25 due to the presence of high level non-target species.

The reported result for 4-Ethyltoluene in samples SV-1D5.25, SV-2D5.25, SV-4D5.25, SV-4D5.25R and SV-7D5.25 may be biased high due to co-elution with a non target compound with similar characteristic ions. Both the primary and secondary ion for 4-Ethyltoluene exhibited potential interference.

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 and/or LCS.
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

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

Client Sample ID: SV-1D5.25

Lab ID#: 1301125A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	9.5	27	30	84
Hexane	2.4	24	8.4	83
Chloroform	2.4	53	12	260
Cyclohexane	2.4	7.7	8.2	26
2,2,4-Trimethylpentane	2.4	20	11	96
Benzene	2.4	30	7.6	96
Heptane	2.4	3.8	9.7	16
Bromodichloromethane	2.4	4.1	16	28
Toluene	2.4	33	8.9	120
Ethyl Benzene	2.4	12	10	50
m,p-Xylene	2.4	57	10	240
o-Xylene	2.4	16	10	71
Propylbenzene	2.4	4.2	12	21
4-Ethyltoluene	2.4	24	12	120
1,3,5-Trimethylbenzene	2.4	15	12	74
1,2,4-Trimethylbenzene	2.4	34	12	170

Client Sample ID: SV-1D10.5

Lab ID#: 1301125A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	15	21	51	76
Chloroform	15	32	71	160
Benzene	15	88	47	280
Toluene	15	26	55	98

Client Sample ID: SV-2D5.25

Lab ID#: 1301125A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	14	23	49	82
Chloroform	14	76	68	370
2,2,4-Trimethylpentane	14	14	65	67

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

Client Sample ID: SV-2D5.25

Lab ID#: 1301125A-03A

Benzene	14	55	44	180
Toluene	14	35	52	130
m,p-Xylene	14	37	60	160
o-Xylene	14	16	60	68
4-Ethyltoluene	14	19	68	92
1,3,5-Trimethylbenzene	14	14	68	69
1,2,4-Trimethylbenzene	14	21	68	100

Client Sample ID: SV-2D10.25

Lab ID#: 1301125A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	53	66	170	210

Client Sample ID: SV-3D5.25

Lab ID#: 1301125A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	19	52	91	260
Benzene	19	31	60	99
4-Methyl-2-pentanone	19	32	76	130
Toluene	19	24	70	90
m,p-Xylene	19	24	81	100

Client Sample ID: SV-3D10.25

Lab ID#: 1301125A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Chloroform	20	48	97	230
Benzene	20	69	64	220
Toluene	20	23	75	87
m,p-Xylene	20	22	86	95

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

Client Sample ID: SV-4D5.25

Lab ID#: 1301125A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	13	32	40	100
Hexane	3.2	5.5	11	19
Chloroform	3.2	110	16	530
Cyclohexane	3.2	4.6	11	16
Benzene	3.2	22	10	70
Bromodichloromethane	3.2	7.8	22	52
Toluene	3.2	24	12	90
Ethyl Benzene	3.2	5.1	14	22
m,p-Xylene	3.2	14	14	60
o-Xylene	3.2	6.0	14	26
4-Ethyltoluene	3.2	6.3	16	31
1,3,5-Trimethylbenzene	3.2	3.5	16	17
1,2,4-Trimethylbenzene	3.2	6.9	16	34

Client Sample ID: SV-4D5.25R

Lab ID#: 1301125A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	9.9	30	31	95
Tetrahydrofuran	2.5	3.3	7.3	9.6
Chloroform	2.5	120	12	600
2,2,4-Trimethylpentane	2.5	2.7	12	12
Benzene	2.5	21	7.9	68
Bromodichloromethane	2.5	8.5	16	57
Toluene	2.5	26	9.3	99
Ethyl Benzene	2.5	6.5	11	28
m,p-Xylene	2.5	19	11	81
o-Xylene	2.5	7.5	11	32
4-Ethyltoluene	2.5	8.8	12	43
1,3,5-Trimethylbenzene	2.5	4.6	12	23
1,2,4-Trimethylbenzene	2.5	11	12	54

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

Client Sample ID: SV-4D10.25

Lab ID#: 1301125A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	22	64	68	200
Chloroform	5.5	100	27	490
Cyclohexane	5.5	11	19	39
2,2,4-Trimethylpentane	5.5	8.0	26	37
Benzene	5.5	50	18	160
Toluene	5.5	16	21	62

Client Sample ID: SV-7D5.25

Lab ID#: 1301125A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	13	58	39	180
Hexane	3.2	7.6	11	27
Tetrahydrofuran	3.2	6.2	9.3	18
Chloroform	3.2	59	15	290
Cyclohexane	3.2	10	11	35
2,2,4-Trimethylpentane	3.2	30	15	140
Benzene	3.2	37	10	120
Toluene	3.2	31	12	120
Ethyl Benzene	3.2	11	14	47
m,p-Xylene	3.2	45	14	190
o-Xylene	3.2	16	14	70
Propylbenzene	3.2	4.6	16	22
4-Ethyltoluene	3.2	26	16	130
1,3,5-Trimethylbenzene	3.2	20	16	97
1,2,4-Trimethylbenzene	3.2	33	16	160

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Client Sample ID: SV-1D5.25

Lab ID#: 1301125A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011408**	**Date of Collection: 1/7/13 3:07:00 PM**	
Dil. Factor:	**4.74**	**Date of Analysis: 1/14/13 01:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.4	Not Detected	12	Not Detected
Freon 114	2.4	Not Detected	16	Not Detected
Chloromethane	24	Not Detected	49	Not Detected
Vinyl Chloride	2.4	Not Detected	6.0	Not Detected
1,3-Butadiene	2.4	Not Detected	5.2	Not Detected
Bromomethane	24	Not Detected	92	Not Detected
Chloroethane	9.5	Not Detected	25	Not Detected
Freon 11	2.4	Not Detected	13	Not Detected
Ethanol	9.5	Not Detected	18	Not Detected
Freon 113	2.4	Not Detected	18	Not Detected
1,1-Dichloroethene	2.4	Not Detected	9.4	Not Detected
Acetone	24	Not Detected	56	Not Detected
2-Propanol	9.5	Not Detected	23	Not Detected
Carbon Disulfide	9.5	27	30	84
3-Chloropropene	9.5	Not Detected	30	Not Detected
Methylene Chloride	24	Not Detected	82	Not Detected
Methyl tert-butyl ether	2.4	Not Detected	8.5	Not Detected
trans-1,2-Dichloroethene	2.4	Not Detected	9.4	Not Detected
Hexane	2.4	24	8.4	83
1,1-Dichloroethane	2.4	Not Detected	9.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	9.5	Not Detected	28	Not Detected
cis-1,2-Dichloroethene	2.4	Not Detected	9.4	Not Detected
Tetrahydrofuran	2.4	Not Detected	7.0	Not Detected
Chloroform	2.4	53	12	260
1,1,1-Trichloroethane	2.4	Not Detected	13	Not Detected
Cyclohexane	2.4	7.7	8.2	26
Carbon Tetrachloride	2.4	Not Detected	15	Not Detected
2,2,4-Trimethylpentane	2.4	20	11	96
Benzene	2.4	30	7.6	96
1,2-Dichloroethane	2.4	Not Detected	9.6	Not Detected
Heptane	2.4	3.8	9.7	16
Trichloroethene	2.4	Not Detected	13	Not Detected
1,2-Dichloropropane	2.4	Not Detected	11	Not Detected
1,4-Dioxane	9.5	Not Detected	34	Not Detected
Bromodichloromethane	2.4	4.1	16	28
cis-1,3-Dichloropropene	2.4	Not Detected	11	Not Detected
4-Methyl-2-pentanone	2.4	Not Detected	9.7	Not Detected
Toluene	2.4	33	8.9	120
trans-1,3-Dichloropropene	2.4	Not Detected	11	Not Detected
1,1,2-Trichloroethane	2.4	Not Detected	13	Not Detected
Tetrachloroethene	2.4	Not Detected	16	Not Detected
2-Hexanone	9.5	Not Detected	39	Not Detected

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Client Sample ID: SV-1D5.25

Lab ID#: 1301125A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011408**	**Date of Collection:**	**1/7/13 3:07:00 PM**
Dil. Factor:	**4.74**	**Date of Analysis:**	**1/14/13 01:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.4	Not Detected	20	Not Detected
1,2-Dibromoethane (EDB)	2.4	Not Detected	18	Not Detected
Chlorobenzene	2.4	Not Detected	11	Not Detected
Ethyl Benzene	2.4	12	10	50
m,p-Xylene	2.4	57	10	240
o-Xylene	2.4	16	10	71
Styrene	2.4	Not Detected	10	Not Detected
Bromoform	2.4	Not Detected	24	Not Detected
Cumene	2.4	Not Detected	12	Not Detected
1,1,2,2-Tetrachloroethane	2.4	Not Detected	16	Not Detected
Propylbenzene	2.4	4.2	12	21
4-Ethyltoluene	2.4	24	12	120
1,3,5-Trimethylbenzene	2.4	15	12	74
1,2,4-Trimethylbenzene	2.4	34	12	170
1,3-Dichlorobenzene	2.4	Not Detected	14	Not Detected
1,4-Dichlorobenzene	2.4	Not Detected	14	Not Detected
alpha-Chlorotoluene	2.4	Not Detected	12	Not Detected
1,2-Dichlorobenzene	2.4	Not Detected	14	Not Detected
1,2,4-Trichlorobenzene	9.5	Not Detected	70	Not Detected
Hexachlorobutadiene	9.5	Not Detected	100	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: SV-1D10.5

Lab ID#: 1301125A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011409**	**Date of Collection:**	**1/7/13 3:32:00 PM**
Dil. Factor:	**29.2**	**Date of Analysis:**	**1/14/13 02:08 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	15	Not Detected	72	Not Detected
Freon 114	15	Not Detected	100	Not Detected
Chloromethane	150	Not Detected	300	Not Detected
Vinyl Chloride	15	Not Detected	37	Not Detected
1,3-Butadiene	15	Not Detected	32	Not Detected
Bromomethane	150	Not Detected	570	Not Detected
Chloroethane	58	Not Detected	150	Not Detected
Freon 11	15	Not Detected	82	Not Detected
Ethanol	58	Not Detected	110	Not Detected
Freon 113	15	Not Detected	110	Not Detected
1,1-Dichloroethene	15	Not Detected	58	Not Detected
Acetone	150	Not Detected	350	Not Detected
2-Propanol	58	Not Detected	140	Not Detected
Carbon Disulfide	58	Not Detected	180	Not Detected
3-Chloropropene	58	Not Detected	180	Not Detected
Methylene Chloride	150	Not Detected	510	Not Detected
Methyl tert-butyl ether	15	Not Detected	53	Not Detected
trans-1,2-Dichloroethene	15	Not Detected	58	Not Detected
Hexane	15	21	51	76
1,1-Dichloroethane	15	Not Detected	59	Not Detected
2-Butanone (Methyl Ethyl Ketone)	58	Not Detected	170	Not Detected
cis-1,2-Dichloroethene	15	Not Detected	58	Not Detected
Tetrahydrofuran	15	Not Detected	43	Not Detected
Chloroform	15	32	71	160
1,1,1-Trichloroethane	15	Not Detected	80	Not Detected
Cyclohexane	15	Not Detected	50	Not Detected
Carbon Tetrachloride	15	Not Detected	92	Not Detected
2,2,4-Trimethylpentane	15	Not Detected	68	Not Detected
Benzene	15	88	47	280
1,2-Dichloroethane	15	Not Detected	59	Not Detected
Heptane	15	Not Detected	60	Not Detected
Trichloroethene	15	Not Detected	78	Not Detected
1,2-Dichloropropane	15	Not Detected	67	Not Detected
1,4-Dioxane	58	Not Detected	210	Not Detected
Bromodichloromethane	15	Not Detected	98	Not Detected
cis-1,3-Dichloropropene	15	Not Detected	66	Not Detected
4-Methyl-2-pentanone	15	Not Detected	60	Not Detected
Toluene	15	26	55	98
trans-1,3-Dichloropropene	15	Not Detected	66	Not Detected
1,1,2-Trichloroethane	15	Not Detected	80	Not Detected
Tetrachloroethene	15	Not Detected	99	Not Detected
2-Hexanone	58	Not Detected	240	Not Detected

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Client Sample ID: SV-1D10.5

Lab ID#: 1301125A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011409**	**Date of Collection: 1/7/13 3:32:00 PM**	
Dil. Factor:	**29.2**	**Date of Analysis: 1/14/13 02:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	15	Not Detected	120	Not Detected
1,2-Dibromoethane (EDB)	15	Not Detected	110	Not Detected
Chlorobenzene	15	Not Detected	67	Not Detected
Ethyl Benzene	15	Not Detected	63	Not Detected
m,p-Xylene	15	Not Detected	63	Not Detected
o-Xylene	15	Not Detected	63	Not Detected
Styrene	15	Not Detected	62	Not Detected
Bromoform	15	Not Detected	150	Not Detected
Cumene	15	Not Detected	72	Not Detected
1,1,2,2-Tetrachloroethane	15	Not Detected	100	Not Detected
Propylbenzene	15	Not Detected	72	Not Detected
4-Ethyltoluene	15	Not Detected	72	Not Detected
1,3,5-Trimethylbenzene	15	Not Detected	72	Not Detected
1,2,4-Trimethylbenzene	15	Not Detected	72	Not Detected
1,3-Dichlorobenzene	15	Not Detected	88	Not Detected
1,4-Dichlorobenzene	15	Not Detected	88	Not Detected
alpha-Chlorotoluene	15	Not Detected	76	Not Detected
1,2-Dichlorobenzene	15	Not Detected	88	Not Detected
1,2,4-Trichlorobenzene	58	Not Detected	430	Not Detected
Hexachlorobutadiene	58	Not Detected	620	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: SV-2D5.25

Lab ID#: 1301125A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011410**	**Date of Collection:**	**1/7/13 4:25:00 PM**
Dil. Factor:	**27.9**	**Date of Analysis:**	**1/14/13 02:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	14	Not Detected	69	Not Detected
Freon 114	14	Not Detected	98	Not Detected
Chloromethane	140	Not Detected	290	Not Detected
Vinyl Chloride	14	Not Detected	36	Not Detected
1,3-Butadiene	14	Not Detected	31	Not Detected
Bromomethane	140	Not Detected	540	Not Detected
Chloroethane	56	Not Detected	150	Not Detected
Freon 11	14	Not Detected	78	Not Detected
Ethanol	56	Not Detected	100	Not Detected
Freon 113	14	Not Detected	110	Not Detected
1,1-Dichloroethene	14	Not Detected	55	Not Detected
Acetone	140	Not Detected	330	Not Detected
2-Propanol	56	Not Detected	140	Not Detected
Carbon Disulfide	56	Not Detected	170	Not Detected
3-Chloropropene	56	Not Detected	170	Not Detected
Methylene Chloride	140	Not Detected	480	Not Detected
Methyl tert-butyl ether	14	Not Detected	50	Not Detected
trans-1,2-Dichloroethene	14	Not Detected	55	Not Detected
Hexane	14	23	49	82
1,1-Dichloroethane	14	Not Detected	56	Not Detected
2-Butanone (Methyl Ethyl Ketone)	56	Not Detected	160	Not Detected
cis-1,2-Dichloroethene	14	Not Detected	55	Not Detected
Tetrahydrofuran	14	Not Detected	41	Not Detected
Chloroform	14	76	68	370
1,1,1-Trichloroethane	14	Not Detected	76	Not Detected
Cyclohexane	14	Not Detected	48	Not Detected
Carbon Tetrachloride	14	Not Detected	88	Not Detected
2,2,4-Trimethylpentane	14	14	65	67
Benzene	14	55	44	180
1,2-Dichloroethane	14	Not Detected	56	Not Detected
Heptane	14	Not Detected	57	Not Detected
Trichloroethene	14	Not Detected	75	Not Detected
1,2-Dichloropropane	14	Not Detected	64	Not Detected
1,4-Dioxane	56	Not Detected	200	Not Detected
Bromodichloromethane	14	Not Detected	93	Not Detected
cis-1,3-Dichloropropene	14	Not Detected	63	Not Detected
4-Methyl-2-pentanone	14	Not Detected	57	Not Detected
Toluene	14	35	52	130
trans-1,3-Dichloropropene	14	Not Detected	63	Not Detected
1,1,2-Trichloroethane	14	Not Detected	76	Not Detected
Tetrachloroethene	14	Not Detected	95	Not Detected
2-Hexanone	56	Not Detected	230	Not Detected

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Client Sample ID: SV-2D5.25

Lab ID#: 1301125A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011410**	**Date of Collection:**	**1/7/13 4:25:00 PM**
Dil. Factor:	**27.9**	**Date of Analysis:**	**1/14/13 02:48 PM**

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	110	Not Detected
Chlorobenzene	14	Not Detected	64	Not Detected
Ethyl Benzene	14	Not Detected	60	Not Detected
m,p-Xylene	14	37	60	160
o-Xylene	14	16	60	68
Styrene	14	Not Detected	59	Not Detected
Bromoform	14	Not Detected	140	Not Detected
Cumene	14	Not Detected	68	Not Detected
1,1,2,2-Tetrachloroethane	14	Not Detected	96	Not Detected
Propylbenzene	14	Not Detected	68	Not Detected
4-Ethyltoluene	14	19	68	92
1,3,5-Trimethylbenzene	14	14	68	69
1,2,4-Trimethylbenzene	14	21	68	100
1,3-Dichlorobenzene	14	Not Detected	84	Not Detected
1,4-Dichlorobenzene	14	Not Detected	84	Not Detected
alpha-Chlorotoluene	14	Not Detected	72	Not Detected
1,2-Dichlorobenzene	14	Not Detected	84	Not Detected
1,2,4-Trichlorobenzene	56	Not Detected	410	Not Detected
Hexachlorobutadiene	56	Not Detected	600	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: SV-2D10.25

Lab ID#: 1301125A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011411**	**Date of Collection: 1/7/13 5:00:00 PM**	
Dil. Factor:	**106**	**Date of Analysis: 1/14/13 03:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	53	Not Detected	260	Not Detected
Freon 114	53	Not Detected	370	Not Detected
Chloromethane	530	Not Detected	1100	Not Detected
Vinyl Chloride	53	Not Detected	140	Not Detected
1,3-Butadiene	53	Not Detected	120	Not Detected
Bromomethane	530	Not Detected	2000	Not Detected
Chloroethane	210	Not Detected	560	Not Detected
Freon 11	53	Not Detected	300	Not Detected
Ethanol	210	Not Detected	400	Not Detected
Freon 113	53	Not Detected	410	Not Detected
1,1-Dichloroethene	53	Not Detected	210	Not Detected
Acetone	530	Not Detected	1200	Not Detected
2-Propanol	210	Not Detected	520	Not Detected
Carbon Disulfide	210	Not Detected	660	Not Detected
3-Chloropropene	210	Not Detected	660	Not Detected
Methylene Chloride	530	Not Detected	1800	Not Detected
Methyl tert-butyl ether	53	Not Detected	190	Not Detected
trans-1,2-Dichloroethene	53	Not Detected	210	Not Detected
Hexane	53	Not Detected	190	Not Detected
1,1-Dichloroethane	53	Not Detected	210	Not Detected
2-Butanone (Methyl Ethyl Ketone)	210	Not Detected	620	Not Detected
cis-1,2-Dichloroethene	53	Not Detected	210	Not Detected
Tetrahydrofuran	53	Not Detected	160	Not Detected
Chloroform	53	Not Detected	260	Not Detected
1,1,1-Trichloroethane	53	Not Detected	290	Not Detected
Cyclohexane	53	Not Detected	180	Not Detected
Carbon Tetrachloride	53	Not Detected	330	Not Detected
2,2,4-Trimethylpentane	53	Not Detected	250	Not Detected
Benzene	53	66	170	210
1,2-Dichloroethane	53	Not Detected	210	Not Detected
Heptane	53	Not Detected	220	Not Detected
Trichloroethene	53	Not Detected	280	Not Detected
1,2-Dichloropropane	53	Not Detected	240	Not Detected
1,4-Dioxane	210	Not Detected	760	Not Detected
Bromodichloromethane	53	Not Detected	360	Not Detected
cis-1,3-Dichloropropene	53	Not Detected	240	Not Detected
4-Methyl-2-pentanone	53	Not Detected	220	Not Detected
Toluene	53	Not Detected	200	Not Detected
trans-1,3-Dichloropropene	53	Not Detected	240	Not Detected
1,1,2-Trichloroethane	53	Not Detected	290	Not Detected
Tetrachloroethene	53	Not Detected	360	Not Detected
2-Hexanone	210	Not Detected	870	Not Detected

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Client Sample ID: SV-2D10.25

Lab ID#: 1301125A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011411**	**Date of Collection:**	**1/7/13 5:00:00 PM**
Dil. Factor:	**106**	**Date of Analysis:**	**1/14/13 03:33 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	53	Not Detected	450	Not Detected
1,2-Dibromoethane (EDB)	53	Not Detected	410	Not Detected
Chlorobenzene	53	Not Detected	240	Not Detected
Ethyl Benzene	53	Not Detected	230	Not Detected
m,p-Xylene	53	Not Detected	230	Not Detected
o-Xylene	53	Not Detected	230	Not Detected
Styrene	53	Not Detected	220	Not Detected
Bromoform	53	Not Detected	550	Not Detected
Cumene	53	Not Detected	260	Not Detected
1,1,2,2-Tetrachloroethane	53	Not Detected	360	Not Detected
Propylbenzene	53	Not Detected	260	Not Detected
4-Ethyltoluene	53	Not Detected	260	Not Detected
1,3,5-Trimethylbenzene	53	Not Detected	260	Not Detected
1,2,4-Trimethylbenzene	53	Not Detected	260	Not Detected
1,3-Dichlorobenzene	53	Not Detected	320	Not Detected
1,4-Dichlorobenzene	53	Not Detected	320	Not Detected
alpha-Chlorotoluene	53	Not Detected	270	Not Detected
1,2-Dichlorobenzene	53	Not Detected	320	Not Detected
1,2,4-Trichlorobenzene	210	Not Detected	1600	Not Detected
Hexachlorobutadiene	210	Not Detected	2300	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: SV-3D5.25

Lab ID#: 1301125A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011412**	**Date of Collection:**	**1/8/13 10:18:00 AM**
Dil. Factor:	**37.3**	**Date of Analysis:**	**1/14/13 04:22 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	19	Not Detected	92	Not Detected
Freon 114	19	Not Detected	130	Not Detected
Chloromethane	190	Not Detected	380	Not Detected
Vinyl Chloride	19	Not Detected	48	Not Detected
1,3-Butadiene	19	Not Detected	41	Not Detected
Bromomethane	190	Not Detected	720	Not Detected
Chloroethane	75	Not Detected	200	Not Detected
Freon 11	19	Not Detected	100	Not Detected
Ethanol	75	Not Detected	140	Not Detected
Freon 113	19	Not Detected	140	Not Detected
1,1-Dichloroethene	19	Not Detected	74	Not Detected
Acetone	190	Not Detected	440	Not Detected
2-Propanol	75	Not Detected	180	Not Detected
Carbon Disulfide	75	Not Detected	230	Not Detected
3-Chloropropene	75	Not Detected	230	Not Detected
Methylene Chloride	190	Not Detected	650	Not Detected
Methyl tert-butyl ether	19	Not Detected	67	Not Detected
trans-1,2-Dichloroethene	19	Not Detected	74	Not Detected
Hexane	19	Not Detected	66	Not Detected
1,1-Dichloroethane	19	Not Detected	75	Not Detected
2-Butanone (Methyl Ethyl Ketone)	75	Not Detected	220	Not Detected
cis-1,2-Dichloroethene	19	Not Detected	74	Not Detected
Tetrahydrofuran	19	Not Detected	55	Not Detected
Chloroform	19	52	91	260
1,1,1-Trichloroethane	19	Not Detected	100	Not Detected
Cyclohexane	19	Not Detected	64	Not Detected
Carbon Tetrachloride	19	Not Detected	120	Not Detected
2,2,4-Trimethylpentane	19	Not Detected	87	Not Detected
Benzene	19	31	60	99
1,2-Dichloroethane	19	Not Detected	75	Not Detected
Heptane	19	Not Detected	76	Not Detected
Trichloroethene	19	Not Detected	100	Not Detected
1,2-Dichloropropane	19	Not Detected	86	Not Detected
1,4-Dioxane	75	Not Detected	270	Not Detected
Bromodichloromethane	19	Not Detected	120	Not Detected
cis-1,3-Dichloropropene	19	Not Detected	85	Not Detected
4-Methyl-2-pentanone	19	32	76	130
Toluene	19	24	70	90
trans-1,3-Dichloropropene	19	Not Detected	85	Not Detected
1,1,2-Trichloroethane	19	Not Detected	100	Not Detected
Tetrachloroethene	19	Not Detected	130	Not Detected
2-Hexanone	75	Not Detected	300	Not Detected

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Client Sample ID: SV-3D5.25

Lab ID#: 1301125A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011412**	**Date of Collection:**	**1/8/13 10:18:00 AM**
Dil. Factor:	**37.3**	**Date of Analysis:**	**1/14/13 04:22 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	19	Not Detected	160	Not Detected
1,2-Dibromoethane (EDB)	19	Not Detected	140	Not Detected
Chlorobenzene	19	Not Detected	86	Not Detected
Ethyl Benzene	19	Not Detected	81	Not Detected
m,p-Xylene	19	24	81	100
o-Xylene	19	Not Detected	81	Not Detected
Styrene	19	Not Detected	79	Not Detected
Bromoform	19	Not Detected	190	Not Detected
Cumene	19	Not Detected	92	Not Detected
1,1,2,2-Tetrachloroethane	19	Not Detected	130	Not Detected
Propylbenzene	19	Not Detected	92	Not Detected
4-Ethyltoluene	19	Not Detected	92	Not Detected
1,3,5-Trimethylbenzene	19	Not Detected	92	Not Detected
1,2,4-Trimethylbenzene	19	Not Detected	92	Not Detected
1,3-Dichlorobenzene	19	Not Detected	110	Not Detected
1,4-Dichlorobenzene	19	Not Detected	110	Not Detected
alpha-Chlorotoluene	19	Not Detected	96	Not Detected
1,2-Dichlorobenzene	19	Not Detected	110	Not Detected
1,2,4-Trichlorobenzene	75	Not Detected	550	Not Detected
Hexachlorobutadiene	75	Not Detected	800	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: SV-3D10.25

Lab ID#: 1301125A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011415**	**Date of Collection:**	**1/8/13 10:47:00 AM**
Dil. Factor:	**39.8**	**Date of Analysis:**	**1/14/13 06:38 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	20	Not Detected	98	Not Detected
Freon 114	20	Not Detected	140	Not Detected
Chloromethane	200	Not Detected	410	Not Detected
Vinyl Chloride	20	Not Detected	51	Not Detected
1,3-Butadiene	20	Not Detected	44	Not Detected
Bromomethane	200	Not Detected	770	Not Detected
Chloroethane	80	Not Detected	210	Not Detected
Freon 11	20	Not Detected	110	Not Detected
Ethanol	80	Not Detected	150	Not Detected
Freon 113	20	Not Detected	150	Not Detected
1,1-Dichloroethene	20	Not Detected	79	Not Detected
Acetone	200	Not Detected	470	Not Detected
2-Propanol	80	Not Detected	200	Not Detected
Carbon Disulfide	80	Not Detected	250	Not Detected
3-Chloropropene	80	Not Detected	250	Not Detected
Methylene Chloride	200	Not Detected	690	Not Detected
Methyl tert-butyl ether	20	Not Detected	72	Not Detected
trans-1,2-Dichloroethene	20	Not Detected	79	Not Detected
Hexane	20	Not Detected	70	Not Detected
1,1-Dichloroethane	20	Not Detected	80	Not Detected
2-Butanone (Methyl Ethyl Ketone)	80	Not Detected	230	Not Detected
cis-1,2-Dichloroethene	20	Not Detected	79	Not Detected
Tetrahydrofuran	20	Not Detected	59	Not Detected
Chloroform	20	48	97	230
1,1,1-Trichloroethane	20	Not Detected	110	Not Detected
Cyclohexane	20	Not Detected	68	Not Detected
Carbon Tetrachloride	20	Not Detected	120	Not Detected
2,2,4-Trimethylpentane	20	Not Detected	93	Not Detected
Benzene	20	69	64	220
1,2-Dichloroethane	20	Not Detected	80	Not Detected
Heptane	20	Not Detected	82	Not Detected
Trichloroethene	20	Not Detected	110	Not Detected
1,2-Dichloropropane	20	Not Detected	92	Not Detected
1,4-Dioxane	80	Not Detected	290	Not Detected
Bromodichloromethane	20	Not Detected	130	Not Detected
cis-1,3-Dichloropropene	20	Not Detected	90	Not Detected
4-Methyl-2-pentanone	20	Not Detected	82	Not Detected
Toluene	20	23	75	87
trans-1,3-Dichloropropene	20	Not Detected	90	Not Detected
1,1,2-Trichloroethane	20	Not Detected	110	Not Detected
Tetrachloroethene	20	Not Detected	130	Not Detected
2-Hexanone	80	Not Detected	330	Not Detected

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Client Sample ID: SV-3D10.25

Lab ID#: 1301125A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011415**	**Date of Collection:**	**1/8/13 10:47:00 AM**
Dil. Factor:	**39.8**	**Date of Analysis:**	**1/14/13 06:38 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	20	Not Detected	170	Not Detected
1,2-Dibromoethane (EDB)	20	Not Detected	150	Not Detected
Chlorobenzene	20	Not Detected	92	Not Detected
Ethyl Benzene	20	Not Detected	86	Not Detected
m,p-Xylene	20	22	86	95
o-Xylene	20	Not Detected	86	Not Detected
Styrene	20	Not Detected	85	Not Detected
Bromoform	20	Not Detected	200	Not Detected
Cumene	20	Not Detected	98	Not Detected
1,1,2,2-Tetrachloroethane	20	Not Detected	140	Not Detected
Propylbenzene	20	Not Detected	98	Not Detected
4-Ethyltoluene	20	Not Detected	98	Not Detected
1,3,5-Trimethylbenzene	20	Not Detected	98	Not Detected
1,2,4-Trimethylbenzene	20	Not Detected	98	Not Detected
1,3-Dichlorobenzene	20	Not Detected	120	Not Detected
1,4-Dichlorobenzene	20	Not Detected	120	Not Detected
alpha-Chlorotoluene	20	Not Detected	100	Not Detected
1,2-Dichlorobenzene	20	Not Detected	120	Not Detected
1,2,4-Trichlorobenzene	80	Not Detected	590	Not Detected
Hexachlorobutadiene	80	Not Detected	850	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: SV-4D5.25

Lab ID#: 1301125A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011417**	**Date of Collection:**	**1/8/13 11:12:00 AM**
Dil. Factor:	**6.51**	**Date of Analysis:**	**1/14/13 08:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.2	Not Detected	16	Not Detected
Freon 114	3.2	Not Detected	23	Not Detected
Chloromethane	32	Not Detected	67	Not Detected
Vinyl Chloride	3.2	Not Detected	8.3	Not Detected
1,3-Butadiene	3.2	Not Detected	7.2	Not Detected
Bromomethane	32	Not Detected	130	Not Detected
Chloroethane	13	Not Detected	34	Not Detected
Freon 11	3.2	Not Detected	18	Not Detected
Ethanol	13	Not Detected	24	Not Detected
Freon 113	3.2	Not Detected	25	Not Detected
1,1-Dichloroethene	3.2	Not Detected	13	Not Detected
Acetone	32	Not Detected	77	Not Detected
2-Propanol	13	Not Detected	32	Not Detected
Carbon Disulfide	13	32	40	100
3-Chloropropene	13	Not Detected	41	Not Detected
Methylene Chloride	32	Not Detected	110	Not Detected
Methyl tert-butyl ether	3.2	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	3.2	Not Detected	13	Not Detected
Hexane	3.2	5.5	11	19
1,1-Dichloroethane	3.2	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	38	Not Detected
cis-1,2-Dichloroethene	3.2	Not Detected	13	Not Detected
Tetrahydrofuran	3.2	Not Detected	9.6	Not Detected
Chloroform	3.2	110	16	530
1,1,1-Trichloroethane	3.2	Not Detected	18	Not Detected
Cyclohexane	3.2	4.6	11	16
Carbon Tetrachloride	3.2	Not Detected	20	Not Detected
2,2,4-Trimethylpentane	3.2	Not Detected	15	Not Detected
Benzene	3.2	22	10	70
1,2-Dichloroethane	3.2	Not Detected	13	Not Detected
Heptane	3.2	Not Detected	13	Not Detected
Trichloroethene	3.2	Not Detected	17	Not Detected
1,2-Dichloropropane	3.2	Not Detected	15	Not Detected
1,4-Dioxane	13	Not Detected	47	Not Detected
Bromodichloromethane	3.2	7.8	22	52
cis-1,3-Dichloropropene	3.2	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.2	Not Detected	13	Not Detected
Toluene	3.2	24	12	90
trans-1,3-Dichloropropene	3.2	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.2	Not Detected	18	Not Detected
Tetrachloroethene	3.2	Not Detected	22	Not Detected
2-Hexanone	13	Not Detected	53	Not Detected

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Client Sample ID: SV-4D5.25

Lab ID#: 1301125A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011417**	**Date of Collection: 1/8/13 11:12:00 AM**	
Dil. Factor:	**6.51**	**Date of Analysis: 1/14/13 08:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.2	Not Detected	28	Not Detected
1,2-Dibromoethane (EDB)	3.2	Not Detected	25	Not Detected
Chlorobenzene	3.2	Not Detected	15	Not Detected
Ethyl Benzene	3.2	5.1	14	22
m,p-Xylene	3.2	14	14	60
o-Xylene	3.2	6.0	14	26
Styrene	3.2	Not Detected	14	Not Detected
Bromoform	3.2	Not Detected	34	Not Detected
Cumene	3.2	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.2	Not Detected	22	Not Detected
Propylbenzene	3.2	Not Detected	16	Not Detected
4-Ethyltoluene	3.2	6.3	16	31
1,3,5-Trimethylbenzene	3.2	3.5	16	17
1,2,4-Trimethylbenzene	3.2	6.9	16	34
1,3-Dichlorobenzene	3.2	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.2	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.2	Not Detected	17	Not Detected
1,2-Dichlorobenzene	3.2	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	97	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	83	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: SV-4D5.25R

Lab ID#: 1301125A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011414**	**Date of Collection: 1/8/13 11:26:00 AM**	
Dil. Factor:	**4.95**	**Date of Analysis: 1/14/13 06:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.5	Not Detected	12	Not Detected
Freon 114	2.5	Not Detected	17	Not Detected
Chloromethane	25	Not Detected	51	Not Detected
Vinyl Chloride	2.5	Not Detected	6.3	Not Detected
1,3-Butadiene	2.5	Not Detected	5.5	Not Detected
Bromomethane	25	Not Detected	96	Not Detected
Chloroethane	9.9	Not Detected	26	Not Detected
Freon 11	2.5	Not Detected	14	Not Detected
Ethanol	9.9	Not Detected	19	Not Detected
Freon 113	2.5	Not Detected	19	Not Detected
1,1-Dichloroethene	2.5	Not Detected	9.8	Not Detected
Acetone	25	Not Detected	59	Not Detected
2-Propanol	9.9	Not Detected	24	Not Detected
Carbon Disulfide	9.9	30	31	95
3-Chloropropene	9.9	Not Detected	31	Not Detected
Methylene Chloride	25	Not Detected	86	Not Detected
Methyl tert-butyl ether	2.5	Not Detected	8.9	Not Detected
trans-1,2-Dichloroethene	2.5	Not Detected	9.8	Not Detected
Hexane	2.5	Not Detected	8.7	Not Detected
1,1-Dichloroethane	2.5	Not Detected	10	Not Detected
2-Butanone (Methyl Ethyl Ketone)	9.9	Not Detected	29	Not Detected
cis-1,2-Dichloroethene	2.5	Not Detected	9.8	Not Detected
Tetrahydrofuran	2.5	3.3	7.3	9.6
Chloroform	2.5	120	12	600
1,1,1-Trichloroethane	2.5	Not Detected	14	Not Detected
Cyclohexane	2.5	Not Detected	8.5	Not Detected
Carbon Tetrachloride	2.5	Not Detected	16	Not Detected
2,2,4-Trimethylpentane	2.5	2.7	12	12
Benzene	2.5	21	7.9	68
1,2-Dichloroethane	2.5	Not Detected	10	Not Detected
Heptane	2.5	Not Detected	10	Not Detected
Trichloroethene	2.5	Not Detected	13	Not Detected
1,2-Dichloropropane	2.5	Not Detected	11	Not Detected
1,4-Dioxane	9.9	Not Detected	36	Not Detected
Bromodichloromethane	2.5	8.5	16	57
cis-1,3-Dichloropropene	2.5	Not Detected	11	Not Detected
4-Methyl-2-pentanone	2.5	Not Detected	10	Not Detected
Toluene	2.5	26	9.3	99
trans-1,3-Dichloropropene	2.5	Not Detected	11	Not Detected
1,1,2-Trichloroethane	2.5	Not Detected	14	Not Detected
Tetrachloroethene	2.5	Not Detected	17	Not Detected
2-Hexanone	9.9	Not Detected	40	Not Detected

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Client Sample ID: SV-4D5.25R

Lab ID#: 1301125A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011414**	**Date of Collection:**	**1/8/13 11:26:00 AM**
Dil. Factor:	**4.95**	**Date of Analysis:**	**1/14/13 06:06 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.5	Not Detected	21	Not Detected
1,2-Dibromoethane (EDB)	2.5	Not Detected	19	Not Detected
Chlorobenzene	2.5	Not Detected	11	Not Detected
Ethyl Benzene	2.5	6.5	11	28
m,p-Xylene	2.5	19	11	81
o-Xylene	2.5	7.5	11	32
Styrene	2.5	Not Detected	10	Not Detected
Bromoform	2.5	Not Detected	26	Not Detected
Cumene	2.5	Not Detected	12	Not Detected
1,1,2,2-Tetrachloroethane	2.5	Not Detected	17	Not Detected
Propylbenzene	2.5	Not Detected	12	Not Detected
4-Ethyltoluene	2.5	8.8	12	43
1,3,5-Trimethylbenzene	2.5	4.6	12	23
1,2,4-Trimethylbenzene	2.5	11	12	54
1,3-Dichlorobenzene	2.5	Not Detected	15	Not Detected
1,4-Dichlorobenzene	2.5	Not Detected	15	Not Detected
alpha-Chlorotoluene	2.5	Not Detected	13	Not Detected
1,2-Dichlorobenzene	2.5	Not Detected	15	Not Detected
1,2,4-Trichlorobenzene	9.9	Not Detected	73	Not Detected
Hexachlorobutadiene	9.9	Not Detected	100	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: SV-4D10.25

Lab ID#: 1301125A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011418**	**Date of Collection: 1/8/13 12:14:00 PM**	
Dil. Factor:	**11.0**	**Date of Analysis: 1/14/13 08:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.5	Not Detected	27	Not Detected
Freon 114	5.5	Not Detected	38	Not Detected
Chloromethane	55	Not Detected	110	Not Detected
Vinyl Chloride	5.5	Not Detected	14	Not Detected
1,3-Butadiene	5.5	Not Detected	12	Not Detected
Bromomethane	55	Not Detected	210	Not Detected
Chloroethane	22	Not Detected	58	Not Detected
Freon 11	5.5	Not Detected	31	Not Detected
Ethanol	22	Not Detected	41	Not Detected
Freon 113	5.5	Not Detected	42	Not Detected
1,1-Dichloroethene	5.5	Not Detected	22	Not Detected
Acetone	55	Not Detected	130	Not Detected
2-Propanol	22	Not Detected	54	Not Detected
Carbon Disulfide	22	64	68	200
3-Chloropropene	22	Not Detected	69	Not Detected
Methylene Chloride	55	Not Detected	190	Not Detected
Methyl tert-butyl ether	5.5	Not Detected	20	Not Detected
trans-1,2-Dichloroethene	5.5	Not Detected	22	Not Detected
Hexane	5.5	Not Detected	19	Not Detected
1,1-Dichloroethane	5.5	Not Detected	22	Not Detected
2-Butanone (Methyl Ethyl Ketone)	22	Not Detected	65	Not Detected
cis-1,2-Dichloroethene	5.5	Not Detected	22	Not Detected
Tetrahydrofuran	5.5	Not Detected	16	Not Detected
Chloroform	5.5	100	27	490
1,1,1-Trichloroethane	5.5	Not Detected	30	Not Detected
Cyclohexane	5.5	11	19	39
Carbon Tetrachloride	5.5	Not Detected	35	Not Detected
2,2,4-Trimethylpentane	5.5	8.0	26	37
Benzene	5.5	50	18	160
1,2-Dichloroethane	5.5	Not Detected	22	Not Detected
Heptane	5.5	Not Detected	22	Not Detected
Trichloroethene	5.5	Not Detected	30	Not Detected
1,2-Dichloropropane	5.5	Not Detected	25	Not Detected
1,4-Dioxane	22	Not Detected	79	Not Detected
Bromodichloromethane	5.5	Not Detected	37	Not Detected
cis-1,3-Dichloropropene	5.5	Not Detected	25	Not Detected
4-Methyl-2-pentanone	5.5	Not Detected	22	Not Detected
Toluene	5.5	16	21	62
trans-1,3-Dichloropropene	5.5	Not Detected	25	Not Detected
1,1,2-Trichloroethane	5.5	Not Detected	30	Not Detected
Tetrachloroethene	5.5	Not Detected	37	Not Detected
2-Hexanone	22	Not Detected	90	Not Detected

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Client Sample ID: SV-4D10.25

Lab ID#: 1301125A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011418**	**Date of Collection: 1/8/13 12:14:00 PM**	
Dil. Factor:	**11.0**	**Date of Analysis: 1/14/13 08:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.5	Not Detected	47	Not Detected
1,2-Dibromoethane (EDB)	5.5	Not Detected	42	Not Detected
Chlorobenzene	5.5	Not Detected	25	Not Detected
Ethyl Benzene	5.5	Not Detected	24	Not Detected
m,p-Xylene	5.5	Not Detected	24	Not Detected
o-Xylene	5.5	Not Detected	24	Not Detected
Styrene	5.5	Not Detected	23	Not Detected
Bromoform	5.5	Not Detected	57	Not Detected
Cumene	5.5	Not Detected	27	Not Detected
1,1,2,2-Tetrachloroethane	5.5	Not Detected	38	Not Detected
Propylbenzene	5.5	Not Detected	27	Not Detected
4-Ethyltoluene	5.5	Not Detected	27	Not Detected
1,3,5-Trimethylbenzene	5.5	Not Detected	27	Not Detected
1,2,4-Trimethylbenzene	5.5	Not Detected	27	Not Detected
1,3-Dichlorobenzene	5.5	Not Detected	33	Not Detected
1,4-Dichlorobenzene	5.5	Not Detected	33	Not Detected
alpha-Chlorotoluene	5.5	Not Detected	28	Not Detected
1,2-Dichlorobenzene	5.5	Not Detected	33	Not Detected
1,2,4-Trichlorobenzene	22	Not Detected	160	Not Detected
Hexachlorobutadiene	22	Not Detected	230	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: SV-7D5.25

Lab ID#: 1301125A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011413**	**Date of Collection: 1/8/13 1:36:00 PM**	
Dil. Factor:	**6.31**	**Date of Analysis: 1/14/13 05:30 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.2	Not Detected	16	Not Detected
Freon 114	3.2	Not Detected	22	Not Detected
Chloromethane	32	Not Detected	65	Not Detected
Vinyl Chloride	3.2	Not Detected	8.1	Not Detected
1,3-Butadiene	3.2	Not Detected	7.0	Not Detected
Bromomethane	32	Not Detected	120	Not Detected
Chloroethane	13	Not Detected	33	Not Detected
Freon 11	3.2	Not Detected	18	Not Detected
Ethanol	13	Not Detected	24	Not Detected
Freon 113	3.2	Not Detected	24	Not Detected
1,1-Dichloroethene	3.2	Not Detected	12	Not Detected
Acetone	32	Not Detected	75	Not Detected
2-Propanol	13	Not Detected	31	Not Detected
Carbon Disulfide	13	58	39	180
3-Chloropropene	13	Not Detected	40	Not Detected
Methylene Chloride	32	Not Detected	110	Not Detected
Methyl tert-butyl ether	3.2	Not Detected	11	Not Detected
trans-1,2-Dichloroethene	3.2	Not Detected	12	Not Detected
Hexane	3.2	7.6	11	27
1,1-Dichloroethane	3.2	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	37	Not Detected
cis-1,2-Dichloroethene	3.2	Not Detected	12	Not Detected
Tetrahydrofuran	3.2	6.2	9.3	18
Chloroform	3.2	59	15	290
1,1,1-Trichloroethane	3.2	Not Detected	17	Not Detected
Cyclohexane	3.2	10	11	35
Carbon Tetrachloride	3.2	Not Detected	20	Not Detected
2,2,4-Trimethylpentane	3.2	30	15	140
Benzene	3.2	37	10	120
1,2-Dichloroethane	3.2	Not Detected	13	Not Detected
Heptane	3.2	Not Detected	13	Not Detected
Trichloroethene	3.2	Not Detected	17	Not Detected
1,2-Dichloropropane	3.2	Not Detected	14	Not Detected
1,4-Dioxane	13	Not Detected	45	Not Detected
Bromodichloromethane	3.2	Not Detected	21	Not Detected
cis-1,3-Dichloropropene	3.2	Not Detected	14	Not Detected
4-Methyl-2-pentanone	3.2	Not Detected	13	Not Detected
Toluene	3.2	31	12	120
trans-1,3-Dichloropropene	3.2	Not Detected	14	Not Detected
1,1,2-Trichloroethane	3.2	Not Detected	17	Not Detected
Tetrachloroethene	3.2	Not Detected	21	Not Detected
2-Hexanone	13	Not Detected	52	Not Detected

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Client Sample ID: SV-7D5.25

Lab ID#: 1301125A-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011413**	**Date of Collection: 1/8/13 1:36:00 PM**	
Dil. Factor:	**6.31**	**Date of Analysis: 1/14/13 05:30 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.2	Not Detected	27	Not Detected
1,2-Dibromoethane (EDB)	3.2	Not Detected	24	Not Detected
Chlorobenzene	3.2	Not Detected	14	Not Detected
Ethyl Benzene	3.2	11	14	47
m,p-Xylene	3.2	45	14	190
o-Xylene	3.2	16	14	70
Styrene	3.2	Not Detected	13	Not Detected
Bromoform	3.2	Not Detected	33	Not Detected
Cumene	3.2	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.2	Not Detected	22	Not Detected
Propylbenzene	3.2	4.6	16	22
4-Ethyltoluene	3.2	26	16	130
1,3,5-Trimethylbenzene	3.2	20	16	97
1,2,4-Trimethylbenzene	3.2	33	16	160
1,3-Dichlorobenzene	3.2	Not Detected	19	Not Detected
1,4-Dichlorobenzene	3.2	Not Detected	19	Not Detected
alpha-Chlorotoluene	3.2	Not Detected	16	Not Detected
1,2-Dichlorobenzene	3.2	Not Detected	19	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	94	Not Detected
Hexachlorobutadiene	13	Not Detected	130	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1301125A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
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
Bromomethane	5.0	Not Detected	19	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	0.50	Not Detected	1.8	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
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1301125A-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	85	70-130

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Client Sample ID: CCV

Lab ID#: 1301125A-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:10 AM**	

Compound	%Recovery
Freon 12	95
Freon 114	103
Chloromethane	91
Vinyl Chloride	102
1,3-Butadiene	105
Bromomethane	104
Chloroethane	103
Freon 11	94
Ethanol	106
Freon 113	106
1,1-Dichloroethene	115
Acetone	109
2-Propanol	110
Carbon Disulfide	109
3-Chloropropene	118
Methylene Chloride	100
Methyl tert-butyl ether	118
trans-1,2-Dichloroethene	116
Hexane	122
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	105
cis-1,2-Dichloroethene	112
Tetrahydrofuran	108
Chloroform	96
1,1,1-Trichloroethane	93
Cyclohexane	117
Carbon Tetrachloride	91
2,2,4-Trimethylpentane	114
Benzene	99
1,2-Dichloroethane	86
Heptane	113
Trichloroethene	96
1,2-Dichloropropane	95
1,4-Dioxane	98
Bromodichloromethane	89
cis-1,3-Dichloropropene	105
4-Methyl-2-pentanone	110
Toluene	97
trans-1,3-Dichloropropene	115
1,1,2-Trichloroethane	104
Tetrachloroethene	106
2-Hexanone	124

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Client Sample ID: CCV

Lab ID#: 1301125A-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:10 AM**	

Compound	%Recovery
Dibromochloromethane	105
1,2-Dibromoethane (EDB)	107
Chlorobenzene	101
Ethyl Benzene	115
m,p-Xylene	119
o-Xylene	123
Styrene	124
Bromoform	107
Cumene	123
1,1,2,2-Tetrachloroethane	98
Propylbenzene	113
4-Ethyltoluene	117
1,3,5-Trimethylbenzene	126
1,2,4-Trimethylbenzene	130
1,3-Dichlorobenzene	109
1,4-Dichlorobenzene	112
alpha-Chlorotoluene	111
1,2-Dichlorobenzene	111
1,2,4-Trichlorobenzene	109
Hexachlorobutadiene	102

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: LCS

Lab ID#: 1301125A-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:37 AM**	

Compound	%Recovery
Freon 12	87
Freon 114	94
Chloromethane	91
Vinyl Chloride	96
1,3-Butadiene	96
Bromomethane	99
Chloroethane	96
Freon 11	85
Ethanol	94
Freon 113	98
1,1-Dichloroethene	112
Acetone	99
2-Propanol	100
Carbon Disulfide	121
3-Chloropropene	122
Methylene Chloride	88
Methyl tert-butyl ether	106
trans-1,2-Dichloroethene	121
Hexane	109
1,1-Dichloroethane	93
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	102
Tetrahydrofuran	95
Chloroform	89
1,1,1-Trichloroethane	86
Cyclohexane	106
Carbon Tetrachloride	84
2,2,4-Trimethylpentane	103
Benzene	93
1,2-Dichloroethane	80
Heptane	105
Trichloroethene	92
1,2-Dichloropropane	90
1,4-Dioxane	98
Bromodichloromethane	85
cis-1,3-Dichloropropene	99
4-Methyl-2-pentanone	102
Toluene	90
trans-1,3-Dichloropropene	104
1,1,2-Trichloroethane	94
Tetrachloroethene	94
2-Hexanone	108

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Client Sample ID: LCS

Lab ID#: 1301125A-13A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:37 AM**	

Compound	%Recovery
Dibromochloromethane	94
1,2-Dibromoethane (EDB)	98
Chlorobenzene	93
Ethyl Benzene	103
m,p-Xylene	106
o-Xylene	111
Styrene	113
Bromoform	94
Cumene	111
1,1,2,2-Tetrachloroethane	89
Propylbenzene	102
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	111
1,2,4-Trimethylbenzene	113
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	99
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	98
1,2,4-Trichlorobenzene	92
Hexachlorobutadiene	87

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: LCSD

Lab ID#: 1301125A-13AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:56 AM**	

Compound	%Recovery
Freon 12	87
Freon 114	93
Chloromethane	93
Vinyl Chloride	96
1,3-Butadiene	97
Bromomethane	98
Chloroethane	96
Freon 11	85
Ethanol	96
Freon 113	99
1,1-Dichloroethene	112
Acetone	101
2-Propanol	100
Carbon Disulfide	123
3-Chloropropene	122
Methylene Chloride	90
Methyl tert-butyl ether	107
trans-1,2-Dichloroethene	120
Hexane	111
1,1-Dichloroethane	93
2-Butanone (Methyl Ethyl Ketone)	96
cis-1,2-Dichloroethene	102
Tetrahydrofuran	94
Chloroform	89
1,1,1-Trichloroethane	86
Cyclohexane	107
Carbon Tetrachloride	84
2,2,4-Trimethylpentane	106
Benzene	91
1,2-Dichloroethane	78
Heptane	103
Trichloroethene	89
1,2-Dichloropropane	88
1,4-Dioxane	88
Bromodichloromethane	81
cis-1,3-Dichloropropene	93
4-Methyl-2-pentanone	97
Toluene	88
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	91
Tetrachloroethene	92
2-Hexanone	103

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Client Sample ID: LCSD

Lab ID#: 1301125A-13AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:56 AM**	

Compound	%Recovery
Dibromochloromethane	90
1,2-Dibromoethane (EDB)	95
Chlorobenzene	91
Ethyl Benzene	101
m,p-Xylene	105
o-Xylene	106
Styrene	108
Bromoform	90
Cumene	108
1,1,2,2-Tetrachloroethane	87
Propylbenzene	100
4-Ethyltoluene	99
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	111
1,3-Dichlorobenzene	95
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	94
Hexachlorobutadiene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	92	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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 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 collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Ron Helm
Collected by: (Print and Sign) Ross Tinline Ron Helm
Company Cornerstone Earth Email RHelm@Cornerstoneearth
Address 1259 Oakmead City Sunnyvale State CA Zip
Phone 4082454600 Fax

Project Info:
P.O. #
Project #
Project Name Samsung

Turn Around Time:
☒ Normal
☐ Rush 5 Day
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	FC #
01A	SV-1D 5.25	37666	1-7-13	1457-1507	VOCs by TO15	29.66	18.67			20413
02A	SV-1D 10.5	1732	1-7-13	1524-1532	Fixed Gases	29.39	23.20			20423
03A	SV-2D 5.25	37305	1-7-13	1615-1625	Methane CO_2 + O_2	29.55	18.97			20104
04A	SV-2D 10.25	15745	1-7-13	1650-1700	TO15 Aliphatic +	29.59	20.11			20244
05A	SV-3D 5.25	37374	1-8-13	1009-1018	Aromatic hydrocarbons	29.30	18.60			30985
06A	SV-3D 10.25	37385	1-8-13	1038-1047	(VPH).	27.30	19.36			30974
07A	SV-4D 5.25	37415	1-8-13	1106-1112	↓	29.53	5.40			20288
08A	SV-4D 5.25 R	36556	1-8-13	1120-1126	↓	29.38	5.30			20288
09A	SV-4D 10.25	9470	1-8-13	1146-1214	↓	29.27	9.23			20259
10A	SV-7D 5.25	15722	1-8-13	1328-1336	↓	29.67	21.67			30971

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1655
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		[signature]	1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		N/A	Good	Yes No (None)	1301125

Form 1293 rev.11

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1/16/2013
Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301125B

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 APH 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1301125B

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-1D5.25	Modified TO-15 APH	17.2 "Hg	15 psi
01B	SV-1D5.25	Modified TO-15 APH	17.2 "Hg	15 psi
02A	SV-1D10.5	Modified TO-15 APH	21.6 "Hg	15.4 psi
02B	SV-1D10.5	Modified TO-15 APH	21.6 "Hg	15.4 psi
03A	SV-2D5.25	Modified TO-15 APH	17.6 "Hg	15 psi
03B	SV-2D5.25	Modified TO-15 APH	17.6 "Hg	15 psi
04A	SV-2D10.25	Modified TO-15 APH	18.6 "Hg	15 psi
04B	SV-2D10.25	Modified TO-15 APH	18.6 "Hg	15 psi
05A	SV-3D5.25	Modified TO-15 APH	17.0 "Hg	15 psi
05B	SV-3D5.25	Modified TO-15 APH	17.0 "Hg	15 psi
06A	SV-3D10.25	Modified TO-15 APH	17.8 "Hg	15 psi
06B	SV-3D10.25	Modified TO-15 APH	17.8 "Hg	15 psi
07A	SV-4D5.25	Modified TO-15 APH	5.2 "Hg	15 psi
07B	SV-4D5.25	Modified TO-15 APH	5.2 "Hg	15 psi
08A	SV-4D5.25R	Modified TO-15 APH	4.4 "Hg	15 psi
08B	SV-4D5.25R	Modified TO-15 APH	4.4 "Hg	15 psi
09A	SV-4D10.25	Modified TO-15 APH	8.0 "Hg	15 psi
09B	SV-4D10.25	Modified TO-15 APH	8.0 "Hg	15 psi
10A	SV-7D5.25	Modified TO-15 APH	20.4 "Hg	15 psi
10B	SV-7D5.25	Modified TO-15 APH	20.4 "Hg	15 psi
11A	Lab Blank	Modified TO-15 APH	NA	NA
11B	Lab Blank	Modified TO-15 APH	NA	NA
12A	CCV	Modified TO-15 APH	NA	NA

Continued on next page

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WORK ORDER #: 1301125B

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
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DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
12B	CCV	Modified TO-15 APH	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 01/16/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 & VPH Fractions
Cornerstone Earth Group
Workorder# 1301125B

Ten 1 Liter Summa Canister samples were received on January 09, 2013. The laboratory performed analysis via EPA Method TO-15 and Air Toxics VPH (Volatile Petroleum Hydrocarbon) methods for the Determination of VPH Fractions using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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 method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. Air Toxics VPH method is a hybrid of EPA TO-15, MADEP APH and WSDE VPH methods. Chromatographic peaks were identified via mass spectrum as either aliphatic or aromatic petroleum hydrocarbons and included in the appropriate range as defined by the method. The volatile Aliphatic hydrocarbons are collectively quantified within the C5 to C6 range, C6 to C8 range, C8 to C10 range and the C10 to C12 range. Additionally, the volatile Aromatic hydrocarbons are collectively quantified within the C8 to C10 range and the C10 to C12 range. The Aromatic ranges refer to the equivalent carbon (EC) ranges.

Aliphatic data is calculated from the Total Ion chromatogram which has been reprocessed in a duplicate file differentiated from the original by the addition of an alphanumeric extension. The Aromatic calculation also uses the information contained in the associated Extracted Ion file.

Receiving Notes

Samples SV-1D5.25, SV-1D10.5, SV-2D5.25, SV-2D10.25, SV-3D5.25, SV-3D10.25 and SV-7D5.25 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

Dilution was performed on samples SV-1D10.5, SV-2D5.25, SV-2D10.25, SV-3D5.25, SV-3D10.25, SV-4D5.25 and SV-4D10.25 due to the presence of high level non-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 and/or LCS.

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

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

Client Sample ID: SV-1D5.25

Lab ID#: 1301125B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	47	150	150	490
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	47	360	190	1500
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	47	68	280	400
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	47	120	330	840

Client Sample ID: SV-1D5.25

Lab ID#: 1301125B-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	47	170	230	830

Client Sample ID: SV-1D10.5

Lab ID#: 1301125B-02A

No Detections Were Found.

Client Sample ID: SV-1D10.5

Lab ID#: 1301125B-02B

No Detections Were Found.

Client Sample ID: SV-2D5.25

Lab ID#: 1301125B-03A

No Detections Were Found.

Client Sample ID: SV-2D5.25

Lab ID#: 1301125B-03B

No Detections Were Found.

Client Sample ID: SV-2D10.25

Lab ID#: 1301125B-04A

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

Client Sample ID: SV-2D10.25

Lab ID#: 1301125B-04A
No Detections Were Found.

Client Sample ID: SV-2D10.25

Lab ID#: 1301125B-04B
No Detections Were Found.

Client Sample ID: SV-3D5.25

Lab ID#: 1301125B-05A
No Detections Were Found.

Client Sample ID: SV-3D5.25

Lab ID#: 1301125B-05B
No Detections Were Found.

Client Sample ID: SV-3D10.25

Lab ID#: 1301125B-06A
No Detections Were Found.

Client Sample ID: SV-3D10.25

Lab ID#: 1301125B-06B
No Detections Were Found.

Client Sample ID: SV-4D5.25

Lab ID#: 1301125B-07A
No Detections Were Found.

Client Sample ID: SV-4D5.25

Lab ID#: 1301125B-07B
No Detections Were Found.

Client Sample ID: SV-4D5.25R

Lab ID#: 1301125B-08A

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

Client Sample ID: SV-4D5.25R

Lab ID#: 1301125B-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	50	110	340	790

Client Sample ID: SV-4D5.25R

Lab ID#: 1301125B-08B

No Detections Were Found.

Client Sample ID: SV-4D10.25

Lab ID#: 1301125B-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	110	140	360	440
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	110	170	450	700

Client Sample ID: SV-4D10.25

Lab ID#: 1301125B-09B

No Detections Were Found.

Client Sample ID: SV-7D5.25

Lab ID#: 1301125B-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	63	290	200	950
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	63	220	260	910
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	63	71	370	420
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	63	350	440	2500

Client Sample ID: SV-7D5.25

Lab ID#: 1301125B-10B

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

Client Sample ID: SV-7D5.25

Lab ID#: 1301125B-10B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	63	160	310	760

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Client Sample ID: SV-1D5.25

Lab ID#: 1301125B-01A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011408a**	**Date of Collection: 1/7/13 3:07:00 PM**	
Dil. Factor:	**4.74**	**Date of Analysis: 1/14/13 01:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	47	150	150	490
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	47	360	190	1500
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	47	68	280	400
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	47	120	330	840

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-1D5.25

Lab ID#: 1301125B-01B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011408c**	**Date of Collection: 1/7/13 3:07:00 PM**	
Dil. Factor:	**4.74**	**Date of Analysis: 1/14/13 01:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	47	170	230	830
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	47	Not Detected	260	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-1D10.5

Lab ID#: 1301125B-02A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011409a**	**Date of Collection: 1/7/13 3:32:00 PM**	
Dil. Factor:	**29.2**	**Date of Analysis: 1/14/13 02:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	290	Not Detected	940	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	290	Not Detected	1200	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	290	Not Detected	1700	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	290	Not Detected	2000	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-1D10.5

Lab ID#: 1301125B-02B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011409c**	**Date of Collection: 1/7/13 3:32:00 PM**	
Dil. Factor:	**29.2**	**Date of Analysis: 1/14/13 02:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	290	Not Detected	1400	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	290	Not Detected	1600	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-2D5.25

Lab ID#: 1301125B-03A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011410a**	**Date of Collection: 1/7/13 4:25:00 PM**	
Dil. Factor:	**27.9**	**Date of Analysis: 1/14/13 02:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	280	Not Detected	900	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	280	Not Detected	1100	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	280	Not Detected	1600	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	280	Not Detected	1900	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-2D5.25

Lab ID#: 1301125B-03B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011410c**	**Date of Collection: 1/7/13 4:25:00 PM**	
Dil. Factor:	**27.9**	**Date of Analysis: 1/14/13 02:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	280	Not Detected	1400	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	280	Not Detected	1500	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-2D10.25

Lab ID#: 1301125B-04A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011411a**	**Date of Collection: 1/7/13 5:00:00 PM**	
Dil. Factor:	**106**	**Date of Analysis: 1/14/13 03:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	1100	Not Detected	3400	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	1100	Not Detected	4300	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	1100	Not Detected	6200	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	1100	Not Detected	7400	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-2D10.25

Lab ID#: 1301125B-04B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011411c**	**Date of Collection: 1/7/13 5:00:00 PM**	
Dil. Factor:	**106**	**Date of Analysis: 1/14/13 03:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	1100	Not Detected	5200	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	1100	Not Detected	5800	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-3D5.25

Lab ID#: 1301125B-05A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011412a**	**Date of Collection: 1/8/13 10:18:00 AM**	
Dil. Factor:	**37.3**	**Date of Analysis: 1/14/13 04:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	370	Not Detected	1200	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	370	Not Detected	1500	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	370	Not Detected	2200	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	370	Not Detected	2600	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-3D5.25

Lab ID#: 1301125B-05B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011412c**	**Date of Collection: 1/8/13 10:18:00 AM**	
Dil. Factor:	**37.3**	**Date of Analysis: 1/14/13 04:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	370	Not Detected	1800	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	370	Not Detected	2000	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-3D10.25

Lab ID#: 1301125B-06A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011415a**	**Date of Collection: 1/8/13 10:47:00 AM**	
Dil. Factor:	**39.8**	**Date of Analysis: 1/14/13 06:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	400	Not Detected	1300	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	400	Not Detected	1600	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	400	Not Detected	2300	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	400	Not Detected	2800	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-3D10.25

Lab ID#: 1301125B-06B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011415c**	**Date of Collection: 1/8/13 10:47:00 AM**	
Dil. Factor:	**39.8**	**Date of Analysis: 1/14/13 06:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	400	Not Detected	2000	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	400	Not Detected	2200	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D5.25

Lab ID#: 1301125B-07A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011417a**	**Date of Collection: 1/8/13 11:12:00 AM**	
Dil. Factor:	**6.51**	**Date of Analysis: 1/14/13 08:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	65	Not Detected	210	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	65	Not Detected	270	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	65	Not Detected	380	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	65	Not Detected	450	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D5.25

Lab ID#: 1301125B-07B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011417c**	**Date of Collection: 1/8/13 11:12:00 AM**	
Dil. Factor:	**6.51**	**Date of Analysis: 1/14/13 08:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	65	Not Detected	320	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	65	Not Detected	360	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D5.25R

Lab ID#: 1301125B-08A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011414a**	**Date of Collection: 1/8/13 11:26:00 AM**	
Dil. Factor:	**4.95**	**Date of Analysis: 1/14/13 06:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	50	Not Detected	160	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	50	Not Detected	200	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	50	Not Detected	290	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	50	110	340	790

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D5.25R

Lab ID#: 1301125B-08B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011414c**	**Date of Collection: 1/8/13 11:26:00 AM**	
Dil. Factor:	**4.95**	**Date of Analysis: 1/14/13 06:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	50	Not Detected	240	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	50	Not Detected	270	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D10.25

Lab ID#: 1301125B-09A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011418a**	**Date of Collection: 1/8/13 12:14:00 PM**	
Dil. Factor:	**11.0**	**Date of Analysis: 1/14/13 08:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	110	140	360	440
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	110	170	450	700
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	110	Not Detected	640	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	110	Not Detected	770	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D10.25

Lab ID#: 1301125B-09B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011418c**	**Date of Collection: 1/8/13 12:14:00 PM**	
Dil. Factor:	**11.0**	**Date of Analysis: 1/14/13 08:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	110	Not Detected	540	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	110	Not Detected	600	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-7D5.25

Lab ID#: 1301125B-10A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011413a**	**Date of Collection: 1/8/13 1:36:00 PM**	
Dil. Factor:	**6.31**	**Date of Analysis: 1/14/13 05:30 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	63	290	200	950
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	63	220	260	910
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	63	71	370	420
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	63	350	440	2500

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-7D5.25

Lab ID#: 1301125B-10B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011413c**	**Date of Collection: 1/8/13 1:36:00 PM**	
Dil. Factor:	**6.31**	**Date of Analysis: 1/14/13 05:30 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	63	160	310	760
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	63	Not Detected	350	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1301125B-11A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	10	Not Detected	32	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	10	Not Detected	41	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	10	Not Detected	58	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	10	Not Detected	70	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1301125B-11B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1301125B-12A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011405a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 10:26 AM**	

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	104
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	120
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	109
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	71

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1301125B-12B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011405c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 10:26 AM**	

Compound	%Recovery
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	113
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	100

Container Type: NA - Not Applicable

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CHAIN-OF-CUSTODY RECORD

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 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 collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Ron Helm
Collected by: (Print and Sign) Ross Tinlin
Company: Cornerstone Earth Email: RHelm@Cornerstoneearth
Address: 1259 Oakmead City: Sunnyvale State: CA Zip:
Phone: 4082454600 Fax:

Project Info:
P.O. #:
Project #:
Project Name: Samsung

Turn Around Time:
☒ Normal
☐ Rush 5 Day
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	FC #
01AB	SV-1D 5.25	37666	1-7-13	1457-1507	VOCs by TO15	29.66	18.67			20413
02AB	SV-1D 10.5	1732	1-7-13	1524-1532	Fixed Gases	29.39	23.20			20423
03AB	SV-2D 5.25	37305	1-7-13	1615-1625	Methane CO_2 + O_2	29.55	18.97			20104
04AB	SV-2D 10.25	15745	1-7-13	1650-1700	TO15 Aliphatic +	29.59	20.11			20344
05AB	SV-3D 5.25	37374	1-8-13	1009-1018	Aromatic hydrocarbons	29.30	18.60			30987
06AB	SV-3D 10.25	37385	1-8-13	1038-1047	(VPH).	27.30	19.36			30974
07AB	SV-4D 5.25	37415	1-8-13	1106-1112		29.53	5.40			20288
08AB	SV-4D 5.25 R	36556	1-8-13	1120-1126		29.38	5.30			20289
09AB	SV-4D 10.25	9470	1-8-13	1146-1214		29.27	9.23			20259
10AB	SV-7D 5.25	15722	1-8-13	1328-1336		29.67	21.67			30971

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1655
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		[illegible]	1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		N/A	Good	Yes No (None)	13[illegible]5

Form 1293 rev.11

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1/16/2013
Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301125C

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1301125C

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-1D5.25	Modified ASTM D-1946	17.2 "Hg	15 psi
02A	SV-1D10.5	Modified ASTM D-1946	21.6 "Hg	15 psi
03A	SV-2D5.25	Modified ASTM D-1946	17.6 "Hg	15 psi
04A	SV-2D10.25	Modified ASTM D-1946	18.6 "Hg	15 psi
05A	SV-3D5.25	Modified ASTM D-1946	17.0 "Hg	15 psi
06A	SV-3D10.25	Modified ASTM D-1946	17.8 "Hg	15 psi
07A	SV-4D5.25	Modified ASTM D-1946	5.2 "Hg	15 psi
08A	SV-4D5.25R	Modified ASTM D-1946	4.4 "Hg	15 psi
09A	SV-4D10.25	Modified ASTM D-1946	8.0 "Hg	15 psi
10A	SV-7D5.25	Modified ASTM D-1946	20.4 "Hg	15 psi
11A	Lab Blank	Modified ASTM D-1946	NA	NA
12A	LCS	Modified ASTM D-1946	NA	NA
12AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 01/16/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Cornerstone Earth Group
Workorder# 1301125C

Ten 1 Liter Summa Canister samples were received on January 09, 2013. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

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

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

Samples SV-1D5.25, SV-1D10.5, SV-2D5.25, SV-2D10.25, SV-3D5.25, SV-3D10.25 and SV-7D5.25 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

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

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SV-1D5.25

Lab ID#: 1301125C-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.47	13
Nitrogen	0.47	84
Carbon Dioxide	0.047	2.7

Client Sample ID: SV-1D10.5

Lab ID#: 1301125C-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.72	14
Nitrogen	0.72	83
Methane	0.00072	0.00078
Carbon Dioxide	0.072	2.8

Client Sample ID: SV-2D5.25

Lab ID#: 1301125C-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.49	13
Nitrogen	0.49	83
Carbon Dioxide	0.049	3.9

Client Sample ID: SV-2D10.25

Lab ID#: 1301125C-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.53	14
Nitrogen	0.53	83
Methane	0.00053	0.00095
Carbon Dioxide	0.053	3.2

Client Sample ID: SV-3D5.25

Lab ID#: 1301125C-05A

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SV-3D5.25

Lab ID#: 1301125C-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.47	14
Nitrogen	0.47	82
Methane	0.00047	0.0026
Carbon Dioxide	0.047	3.5

Client Sample ID: SV-3D10.25

Lab ID#: 1301125C-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.50	16
Nitrogen	0.50	80
Methane	0.00050	0.0017
Carbon Dioxide	0.050	3.4

Client Sample ID: SV-4D5.25

Lab ID#: 1301125C-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	13
Nitrogen	0.24	85
Carbon Dioxide	0.024	2.3

Client Sample ID: SV-4D5.25R

Lab ID#: 1301125C-08A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	14
Nitrogen	0.24	84
Carbon Dioxide	0.024	2.2

Client Sample ID: SV-4D10.25

Lab ID#: 1301125C-09A

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SV-4D10.25

Lab ID#: 1301125C-09A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.28	8.4
Nitrogen	0.28	86
Methane	0.00028	0.0017
Carbon Dioxide	0.028	5.3

Client Sample ID: SV-7D5.25

Lab ID#: 1301125C-10A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.63	2.9
Nitrogen	0.63	94
Methane	0.00063	0.0092
Carbon Dioxide	0.063	2.9

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Client Sample ID: SV-1D5.25

Lab ID#: 1301125C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011106**	**Date of Collection: 1/7/13 3:07:00 PM**	
Dil. Factor:	**4.74**	**Date of Analysis: 1/11/13 10:59 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.47	13
Nitrogen	0.47	84
Carbon Monoxide	0.047	Not Detected
Methane	0.00047	Not Detected
Carbon Dioxide	0.047	2.7
Ethane	0.0047	Not Detected
Ethene	0.0047	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-1D10.5

Lab ID#: 1301125C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011107**	**Date of Collection: 1/7/13 3:32:00 PM**	
Dil. Factor:	**7.22**	**Date of Analysis: 1/11/13 11:29 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.72	14
Nitrogen	0.72	83
Carbon Monoxide	0.072	Not Detected
Methane	0.00072	0.00078
Carbon Dioxide	0.072	2.8
Ethane	0.0072	Not Detected
Ethene	0.0072	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-2D5.25

Lab ID#: 1301125C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011108**	**Date of Collection: 1/7/13 4:25:00 PM**	
Dil. Factor:	**4.89**	**Date of Analysis: 1/11/13 11:52 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.49	13
Nitrogen	0.49	83
Carbon Monoxide	0.049	Not Detected
Methane	0.00049	Not Detected
Carbon Dioxide	0.049	3.9
Ethane	0.0049	Not Detected
Ethene	0.0049	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-2D10.25

Lab ID#: 1301125C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011109**	**Date of Collection: 1/7/13 5:00:00 PM**	
Dil. Factor:	**5.32**	**Date of Analysis: 1/11/13 12:15 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.53	14
Nitrogen	0.53	83
Carbon Monoxide	0.053	Not Detected
Methane	0.00053	0.00095
Carbon Dioxide	0.053	3.2
Ethane	0.0053	Not Detected
Ethene	0.0053	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-3D5.25

Lab ID#: 1301125C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011110**	**Date of Collection: 1/8/13 10:18:00 AM**	
Dil. Factor:	**4.66**	**Date of Analysis: 1/11/13 12:48 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.47	14
Nitrogen	0.47	82
Carbon Monoxide	0.047	Not Detected
Methane	0.00047	0.0026
Carbon Dioxide	0.047	3.5
Ethane	0.0047	Not Detected
Ethene	0.0047	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-3D10.25

Lab ID#: 1301125C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011111**	**Date of Collection: 1/8/13 10:47:00 AM**	
Dil. Factor:	**4.97**	**Date of Analysis: 1/11/13 01:14 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.50	16
Nitrogen	0.50	80
Carbon Monoxide	0.050	Not Detected
Methane	0.00050	0.0017
Carbon Dioxide	0.050	3.4
Ethane	0.0050	Not Detected
Ethene	0.0050	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D5.25

Lab ID#: 1301125C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011112**	**Date of Collection: 1/8/13 11:12:00 AM**	
Dil. Factor:	**2.44**	**Date of Analysis: 1/11/13 01:39 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	13
Nitrogen	0.24	85
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	Not Detected
Carbon Dioxide	0.024	2.3
Ethane	0.0024	Not Detected
Ethene	0.0024	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D5.25R

Lab ID#: 1301125C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011113**	**Date of Collection: 1/8/13 11:26:00 AM**	
Dil. Factor:	**2.37**	**Date of Analysis: 1/11/13 02:11 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	14
Nitrogen	0.24	84
Carbon Monoxide	0.024	Not Detected
Methane	0.00024	Not Detected
Carbon Dioxide	0.024	2.2
Ethane	0.0024	Not Detected
Ethene	0.0024	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-4D10.25

Lab ID#: 1301125C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011114**	**Date of Collection: 1/8/13 12:14:00 PM**	
Dil. Factor:	**2.76**	**Date of Analysis: 1/11/13 02:35 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.28	8.4
Nitrogen	0.28	86
Carbon Monoxide	0.028	Not Detected
Methane	0.00028	0.0017
Carbon Dioxide	0.028	5.3
Ethane	0.0028	Not Detected
Ethene	0.0028	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-7D5.25

Lab ID#: 1301125C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011115**	**Date of Collection: 1/8/13 1:36:00 PM**	
Dil. Factor:	**6.31**	**Date of Analysis: 1/11/13 03:11 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.63	2.9
Nitrogen	0.63	94
Carbon Monoxide	0.063	Not Detected
Methane	0.00063	0.0092
Carbon Dioxide	0.063	2.9
Ethane	0.0063	Not Detected
Ethene	0.0063	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1301125C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011105**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/11/13 10:12 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Monoxide	0.010	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected
Ethane	0.0010	Not Detected
Ethene	0.0010	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1301125C-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011102**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/11/13 08:56 AM**	

Compound	%Recovery
Oxygen	99
Nitrogen	100
Carbon Monoxide	96
Methane	97
Carbon Dioxide	101
Ethane	99
Ethene	96

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1301125C-12AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011129**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/11/13 09:21 PM**	

Compound	%Recovery
Oxygen	99
Nitrogen	100
Carbon Monoxide	97
Methane	99
Carbon Dioxide	100
Ethane	101
Ethene	98

Container Type: NA - Not Applicable

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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 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 collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Ron Helm
Collected by: (Print and Sign) Ross Tinline Ron Helm
Company Cornerstone Earth Email RHelm@Cornerstoneearth
Address 1259 Oakmead City Sunnyvale State CA Zip
Phone 4082454600 Fax

Project Info:
P.O. #
Project #
Project Name Samsung

Turn Around Time:
☒ Normal
☐ Rush 5 Day
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	FC #
01A	SV-1D 5.25	37666	1-7-13	1457-1507	VOCs by TO15	29.66	18.67			20413
02A	SV-1D 10.5	1732	1-7-13	1524-1532	Fixed Gases	29.39	23.20			20423
03A	SV-2D 5.25	37305	1-7-13	1615-1625	Methane CO_2 + O_2	29.55	18.97			20104
04A	SV-2D 10.25	15745	1-7-13	1650-1700	TO15 Aliphatic +	29.59	20.11			20244
05A	SV-3D 5.25	37374	1-8-13	1009-1018	Aromatic hydrocarbons	29.30	18.60			30985
06A	SV-3D 10.25	37385	1-8-13	1038-1047	(VPH).	27.30	19.36			30974
07A	SV-4D 5.25	37415	1-8-13	1106-1112	↓	29.53	5.40			20288
08A	SV-4D 5.25 R	36556	1-8-13	1120-1126	↓	29.38	5.30			20288
09A	SV-4D 10.25	9470	1-8-13	1146-1214	↓	29.27	9.23			20259
10A	SV-7D 5.25	15722	1-8-13	1328-1336	↓	29.67	21.67			30971

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1655
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		[signature]	1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		N/A	Good	Yes No (None)	1301125

Form 1293 rev.11

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1/16/2013
Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301135A

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1301135A

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-7D10.25	Modified TO-15	21.0 "Hg	15 psi
02A	SV-6D5.25	Modified TO-15	10.0 "Hg	15 psi
03A	SV-6D10.25	Modified TO-15	20.5 "Hg	15 psi
04A	SV5D5.25	Modified TO-15	3.5 "Hg	15 psi
05A	SV5D-10.25	Modified TO-15	3.5 "Hg	15 psi
06A	Trip Blank	Modified TO-15	27.5 "Hg	15 psi
07A	Lab Blank	Modified TO-15	NA	NA
07B	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
08B	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09AA	LCSD	Modified TO-15	NA	NA
09B	LCS	Modified TO-15	NA	NA
09BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 01/16/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
Cornerstone Earth Group
Workorder# 1301135A

Six 1 Liter Summa Canister samples were received on January 09, 2013. 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

Samples SV-7D10.25 and SV-6D10.25 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

The reported result for 4-Ethyltoluene in samples SV-7D10.25, SV-6D5.25, SV5D5.25 and SV5D-10.25 may be biased high due to co-elution with a non target compound with similar characteristic ions. Both the primary and secondary ion for 4-Ethyltoluene exhibited potential interference.

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 and/or LCS.
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

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

Client Sample ID: SV-7D10.25

Lab ID#: 1301135A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	13	47	33	120
Carbon Disulfide	13	34	42	100
Hexane	3.4	10	12	36
Chloroform	3.4	25	16	120
Cyclohexane	3.4	4.4	12	15
2,2,4-Trimethylpentane	3.4	12	16	58
Benzene	3.4	48	11	150
Toluene	3.4	9.0	13	34
m,p-Xylene	3.4	8.4	15	36
o-Xylene	3.4	4.2	15	18
4-Ethyltoluene	3.4	5.4	16	26
1,3,5-Trimethylbenzene	3.4	4.6	16	23
1,2,4-Trimethylbenzene	3.4	7.2	16	36

Client Sample ID: SV-6D5.25

Lab ID#: 1301135A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	6.1	13	15	32
Carbon Disulfide	6.1	48	19	150
Hexane	1.5	16	5.3	55
Tetrahydrofuran	1.5	5.7	4.5	17
Chloroform	1.5	61	7.4	300
Cyclohexane	1.5	11	5.2	38
2,2,4-Trimethylpentane	1.5	23	7.1	110
Benzene	1.5	35	4.8	110
Bromodichloromethane	1.5	3.8	10	26
Toluene	1.5	38	5.7	140
Ethyl Benzene	1.5	11	6.6	48
m,p-Xylene	1.5	57	6.6	250
o-Xylene	1.5	19	6.6	82
Styrene	1.5	2.0	6.4	8.4
Propylbenzene	1.5	4.2	7.4	20

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

Client Sample ID: SV-6D5.25

Lab ID#: 1301135A-02A

4-Ethyltoluene	1.5	28	7.4	140
1,3,5-Trimethylbenzene	1.5	20	7.4	98
1,2,4-Trimethylbenzene	1.5	35	7.4	170

Client Sample ID: SV-6D10.25

Lab ID#: 1301135A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	13	26	40	79
Hexane	3.2	23	11	81
Tetrahydrofuran	3.2	5.7	9.4	17
Chloroform	3.2	19	16	93
Cyclohexane	3.2	14	11	50
2,2,4-Trimethylpentane	3.2	6.6	15	31
Benzene	3.2	32	10	100
Toluene	3.2	7.4	12	28
m,p-Xylene	3.2	4.6	14	20
1,2,4-Trimethylbenzene	3.2	3.9	16	19

Client Sample ID: SV5D5.25

Lab ID#: 1301135A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.6	5.0	8.6	9.5
Carbon Disulfide	4.6	9.5	14	30
Tetrahydrofuran	1.1	3.2	3.4	9.4
Chloroform	1.1	24	5.6	120
Benzene	1.1	6.7	3.6	21
Bromodichloromethane	1.1	2.4	7.7	16
Toluene	1.1	13	4.3	50
Ethyl Benzene	1.1	5.0	5.0	22
m,p-Xylene	1.1	28	5.0	120
o-Xylene	1.1	8.0	5.0	34
Propylbenzene	1.1	2.4	5.6	12

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

Client Sample ID: SV5D5.25

Lab ID#: 1301135A-04A

4-Ethyltoluene	1.1	15	5.6	75
1,3,5-Trimethylbenzene	1.1	9.7	5.6	48
1,2,4-Trimethylbenzene	1.1	25	5.6	120

Client Sample ID: SV5D-10.25

Lab ID#: 1301135A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	4.6	26	14	81
Hexane	1.1	3.2	4.0	11
Tetrahydrofuran	1.1	1.5	3.4	4.5
Chloroform	1.1	120	5.6	580
Cyclohexane	1.1	7.0	3.9	24
2,2,4-Trimethylpentane	1.1	3.1	5.3	14
Benzene	1.1	15	3.6	47
Bromodichloromethane	1.1	6.3	7.7	42
Toluene	1.1	11	4.3	40
Ethyl Benzene	1.1	4.4	5.0	19
m,p-Xylene	1.1	15	5.0	65
o-Xylene	1.1	9.3	5.0	40
Propylbenzene	1.1	1.2	5.6	5.9
4-Ethyltoluene	1.1	5.1	5.6	25
1,3,5-Trimethylbenzene	1.1	2.3	5.6	11
1,2,4-Trimethylbenzene	1.1	7.4	5.6	36

Client Sample ID: Trip Blank

Lab ID#: 1301135A-06A

No Detections Were Found.

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Client Sample ID: SV-7D10.25

Lab ID#: 1301135A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011421**	**Date of Collection: 1/8/13 2:06:00 PM**	
Dil. Factor:	**6.73**	**Date of Analysis: 1/14/13 10:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.4	Not Detected	17	Not Detected
Freon 114	3.4	Not Detected	24	Not Detected
Chloromethane	34	Not Detected	69	Not Detected
Vinyl Chloride	3.4	Not Detected	8.6	Not Detected
1,3-Butadiene	3.4	Not Detected	7.4	Not Detected
Bromomethane	34	Not Detected	130	Not Detected
Chloroethane	13	Not Detected	36	Not Detected
Freon 11	3.4	Not Detected	19	Not Detected
Ethanol	13	Not Detected	25	Not Detected
Freon 113	3.4	Not Detected	26	Not Detected
1,1-Dichloroethene	3.4	Not Detected	13	Not Detected
Acetone	34	Not Detected	80	Not Detected
2-Propanol	13	47	33	120
Carbon Disulfide	13	34	42	100
3-Chloropropene	13	Not Detected	42	Not Detected
Methylene Chloride	34	Not Detected	120	Not Detected
Methyl tert-butyl ether	3.4	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	3.4	Not Detected	13	Not Detected
Hexane	3.4	10	12	36
1,1-Dichloroethane	3.4	Not Detected	14	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	40	Not Detected
cis-1,2-Dichloroethene	3.4	Not Detected	13	Not Detected
Tetrahydrofuran	3.4	Not Detected	9.9	Not Detected
Chloroform	3.4	25	16	120
1,1,1-Trichloroethane	3.4	Not Detected	18	Not Detected
Cyclohexane	3.4	4.4	12	15
Carbon Tetrachloride	3.4	Not Detected	21	Not Detected
2,2,4-Trimethylpentane	3.4	12	16	58
Benzene	3.4	48	11	150
1,2-Dichloroethane	3.4	Not Detected	14	Not Detected
Heptane	3.4	Not Detected	14	Not Detected
Trichloroethene	3.4	Not Detected	18	Not Detected
1,2-Dichloropropane	3.4	Not Detected	16	Not Detected
1,4-Dioxane	13	Not Detected	48	Not Detected
Bromodichloromethane	3.4	Not Detected	22	Not Detected
cis-1,3-Dichloropropene	3.4	Not Detected	15	Not Detected
4-Methyl-2-pentanone	3.4	Not Detected	14	Not Detected
Toluene	3.4	9.0	13	34
trans-1,3-Dichloropropene	3.4	Not Detected	15	Not Detected
1,1,2-Trichloroethane	3.4	Not Detected	18	Not Detected
Tetrachloroethene	3.4	Not Detected	23	Not Detected
2-Hexanone	13	Not Detected	55	Not Detected

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Client Sample ID: SV-7D10.25

Lab ID#: 1301135A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011421**	**Date of Collection: 1/8/13 2:06:00 PM**	
Dil. Factor:	**6.73**	**Date of Analysis: 1/14/13 10:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.4	Not Detected	29	Not Detected
1,2-Dibromoethane (EDB)	3.4	Not Detected	26	Not Detected
Chlorobenzene	3.4	Not Detected	15	Not Detected
Ethyl Benzene	3.4	Not Detected	15	Not Detected
m,p-Xylene	3.4	8.4	15	36
o-Xylene	3.4	4.2	15	18
Styrene	3.4	Not Detected	14	Not Detected
Bromoform	3.4	Not Detected	35	Not Detected
Cumene	3.4	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.4	Not Detected	23	Not Detected
Propylbenzene	3.4	Not Detected	16	Not Detected
4-Ethyltoluene	3.4	5.4	16	26
1,3,5-Trimethylbenzene	3.4	4.6	16	23
1,2,4-Trimethylbenzene	3.4	7.2	16	36
1,3-Dichlorobenzene	3.4	Not Detected	20	Not Detected
1,4-Dichlorobenzene	3.4	Not Detected	20	Not Detected
alpha-Chlorotoluene	3.4	Not Detected	17	Not Detected
1,2-Dichlorobenzene	3.4	Not Detected	20	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	100	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: SV-6D5.25

Lab ID#: 1301135A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011508**	**Date of Collection: 1/8/13 2:50:00 PM**	
Dil. Factor:	**3.03**	**Date of Analysis: 1/15/13 02:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.5	Not Detected	7.5	Not Detected
Freon 114	1.5	Not Detected	10	Not Detected
Chloromethane	15	Not Detected	31	Not Detected
Vinyl Chloride	1.5	Not Detected	3.9	Not Detected
1,3-Butadiene	1.5	Not Detected	3.4	Not Detected
Bromomethane	15	Not Detected	59	Not Detected
Chloroethane	6.1	Not Detected	16	Not Detected
Freon 11	1.5	Not Detected	8.5	Not Detected
Ethanol	6.1	Not Detected	11	Not Detected
Freon 113	1.5	Not Detected	12	Not Detected
1,1-Dichloroethene	1.5	Not Detected	6.0	Not Detected
Acetone	15	Not Detected	36	Not Detected
2-Propanol	6.1	13	15	32
Carbon Disulfide	6.1	48	19	150
3-Chloropropene	6.1	Not Detected	19	Not Detected
Methylene Chloride	15	Not Detected	53	Not Detected
Methyl tert-butyl ether	1.5	Not Detected	5.5	Not Detected
trans-1,2-Dichloroethene	1.5	Not Detected	6.0	Not Detected
Hexane	1.5	16	5.3	55
1,1-Dichloroethane	1.5	Not Detected	6.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	6.1	Not Detected	18	Not Detected
cis-1,2-Dichloroethene	1.5	Not Detected	6.0	Not Detected
Tetrahydrofuran	1.5	5.7	4.5	17
Chloroform	1.5	61	7.4	300
1,1,1-Trichloroethane	1.5	Not Detected	8.3	Not Detected
Cyclohexane	1.5	11	5.2	38
Carbon Tetrachloride	1.5	Not Detected	9.5	Not Detected
2,2,4-Trimethylpentane	1.5	23	7.1	110
Benzene	1.5	35	4.8	110
1,2-Dichloroethane	1.5	Not Detected	6.1	Not Detected
Heptane	1.5	Not Detected	6.2	Not Detected
Trichloroethene	1.5	Not Detected	8.1	Not Detected
1,2-Dichloropropane	1.5	Not Detected	7.0	Not Detected
1,4-Dioxane	6.1	Not Detected	22	Not Detected
Bromodichloromethane	1.5	3.8	10	26
cis-1,3-Dichloropropene	1.5	Not Detected	6.9	Not Detected
4-Methyl-2-pentanone	1.5	Not Detected	6.2	Not Detected
Toluene	1.5	38	5.7	140
trans-1,3-Dichloropropene	1.5	Not Detected	6.9	Not Detected
1,1,2-Trichloroethane	1.5	Not Detected	8.3	Not Detected
Tetrachloroethene	1.5	Not Detected	10	Not Detected
2-Hexanone	6.1	Not Detected	25	Not Detected

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Client Sample ID: SV-6D5.25

Lab ID#: 1301135A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011508**	**Date of Collection: 1/8/13 2:50:00 PM**	
Dil. Factor:	**3.03**	**Date of Analysis: 1/15/13 02:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.5	Not Detected	13	Not Detected
1,2-Dibromoethane (EDB)	1.5	Not Detected	12	Not Detected
Chlorobenzene	1.5	Not Detected	7.0	Not Detected
Ethyl Benzene	1.5	11	6.6	48
m,p-Xylene	1.5	57	6.6	250
o-Xylene	1.5	19	6.6	82
Styrene	1.5	2.0	6.4	8.4
Bromoform	1.5	Not Detected	16	Not Detected
Cumene	1.5	Not Detected	7.4	Not Detected
1,1,2,2-Tetrachloroethane	1.5	Not Detected	10	Not Detected
Propylbenzene	1.5	4.2	7.4	20
4-Ethyltoluene	1.5	28	7.4	140
1,3,5-Trimethylbenzene	1.5	20	7.4	98
1,2,4-Trimethylbenzene	1.5	35	7.4	170
1,3-Dichlorobenzene	1.5	Not Detected	9.1	Not Detected
1,4-Dichlorobenzene	1.5	Not Detected	9.1	Not Detected
alpha-Chlorotoluene	1.5	Not Detected	7.8	Not Detected
1,2-Dichlorobenzene	1.5	Not Detected	9.1	Not Detected
1,2,4-Trichlorobenzene	6.1	Not Detected	45	Not Detected
Hexachlorobutadiene	6.1	Not Detected	65	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	91	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: SV-6D10.25

Lab ID#: 1301135A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011422**	**Date of Collection: 1/8/13 3:15:00 PM**	
Dil. Factor:	**6.38**	**Date of Analysis: 1/14/13 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	3.2	Not Detected	16	Not Detected
Freon 114	3.2	Not Detected	22	Not Detected
Chloromethane	32	Not Detected	66	Not Detected
Vinyl Chloride	3.2	Not Detected	8.2	Not Detected
1,3-Butadiene	3.2	Not Detected	7.0	Not Detected
Bromomethane	32	Not Detected	120	Not Detected
Chloroethane	13	Not Detected	34	Not Detected
Freon 11	3.2	Not Detected	18	Not Detected
Ethanol	13	Not Detected	24	Not Detected
Freon 113	3.2	Not Detected	24	Not Detected
1,1-Dichloroethene	3.2	Not Detected	13	Not Detected
Acetone	32	Not Detected	76	Not Detected
2-Propanol	13	Not Detected	31	Not Detected
Carbon Disulfide	13	26	40	79
3-Chloropropene	13	Not Detected	40	Not Detected
Methylene Chloride	32	Not Detected	110	Not Detected
Methyl tert-butyl ether	3.2	Not Detected	12	Not Detected
trans-1,2-Dichloroethene	3.2	Not Detected	13	Not Detected
Hexane	3.2	23	11	81
1,1-Dichloroethane	3.2	Not Detected	13	Not Detected
2-Butanone (Methyl Ethyl Ketone)	13	Not Detected	38	Not Detected
cis-1,2-Dichloroethene	3.2	Not Detected	13	Not Detected
Tetrahydrofuran	3.2	5.7	9.4	17
Chloroform	3.2	19	16	93
1,1,1-Trichloroethane	3.2	Not Detected	17	Not Detected
Cyclohexane	3.2	14	11	50
Carbon Tetrachloride	3.2	Not Detected	20	Not Detected
2,2,4-Trimethylpentane	3.2	6.6	15	31
Benzene	3.2	32	10	100
1,2-Dichloroethane	3.2	Not Detected	13	Not Detected
Heptane	3.2	Not Detected	13	Not Detected
Trichloroethene	3.2	Not Detected	17	Not Detected
1,2-Dichloropropane	3.2	Not Detected	15	Not Detected
1,4-Dioxane	13	Not Detected	46	Not Detected
Bromodichloromethane	3.2	Not Detected	21	Not Detected
cis-1,3-Dichloropropene	3.2	Not Detected	14	Not Detected
4-Methyl-2-pentanone	3.2	Not Detected	13	Not Detected
Toluene	3.2	7.4	12	28
trans-1,3-Dichloropropene	3.2	Not Detected	14	Not Detected
1,1,2-Trichloroethane	3.2	Not Detected	17	Not Detected
Tetrachloroethene	3.2	Not Detected	22	Not Detected
2-Hexanone	13	Not Detected	52	Not Detected

eurofins | Air Toxics

Client Sample ID: SV-6D10.25

Lab ID#: 1301135A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011422**	**Date of Collection:**	**1/8/13 3:15:00 PM**
Dil. Factor:	**6.38**	**Date of Analysis:**	**1/14/13 10:37 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	3.2	Not Detected	27	Not Detected
1,2-Dibromoethane (EDB)	3.2	Not Detected	24	Not Detected
Chlorobenzene	3.2	Not Detected	15	Not Detected
Ethyl Benzene	3.2	Not Detected	14	Not Detected
m,p-Xylene	3.2	4.6	14	20
o-Xylene	3.2	Not Detected	14	Not Detected
Styrene	3.2	Not Detected	14	Not Detected
Bromoform	3.2	Not Detected	33	Not Detected
Cumene	3.2	Not Detected	16	Not Detected
1,1,2,2-Tetrachloroethane	3.2	Not Detected	22	Not Detected
Propylbenzene	3.2	Not Detected	16	Not Detected
4-Ethyltoluene	3.2	Not Detected	16	Not Detected
1,3,5-Trimethylbenzene	3.2	Not Detected	16	Not Detected
1,2,4-Trimethylbenzene	3.2	3.9	16	19
1,3-Dichlorobenzene	3.2	Not Detected	19	Not Detected
1,4-Dichlorobenzene	3.2	Not Detected	19	Not Detected
alpha-Chlorotoluene	3.2	Not Detected	16	Not Detected
1,2-Dichlorobenzene	3.2	Not Detected	19	Not Detected
1,2,4-Trichlorobenzene	13	Not Detected	95	Not Detected
Hexachlorobutadiene	13	Not Detected	140	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: SV5D5.25

Lab ID#: 1301135A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011423**	**Date of Collection: 1/8/13 3:47:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/14/13 11:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.7	Not Detected
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	5.0	8.6	9.5
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	9.5	14	30
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	3.2	3.4	9.4
Chloroform	1.1	24	5.6	120
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	Not Detected	3.9	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	6.7	3.6	21
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	Not Detected	4.7	Not Detected
Trichloroethene	1.1	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	2.4	7.7	16
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	13	4.3	50
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.8	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected

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Client Sample ID: SV5D5.25

Lab ID#: 1301135A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011423**	**Date of Collection: 1/8/13 3:47:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/14/13 11:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.3	Not Detected
Ethyl Benzene	1.1	5.0	5.0	22
m,p-Xylene	1.1	28	5.0	120
o-Xylene	1.1	8.0	5.0	34
Styrene	1.1	Not Detected	4.9	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.9	Not Detected
Propylbenzene	1.1	2.4	5.6	12
4-Ethyltoluene	1.1	15	5.6	75
1,3,5-Trimethylbenzene	1.1	9.7	5.6	48
1,2,4-Trimethylbenzene	1.1	25	5.6	120
1,3-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	95	70-130

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Client Sample ID: SV5D-10.25

Lab ID#: 1301135A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011509**	**Date of Collection:**	**1/8/13 4:14:00 PM**
Dil. Factor:	**2.29**	**Date of Analysis:**	**1/15/13 03:23 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.7	Not Detected
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	Not Detected	8.6	Not Detected
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.6	Not Detected	11	Not Detected
Carbon Disulfide	4.6	26	14	81
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	3.2	4.0	11
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	1.5	3.4	4.5
Chloroform	1.1	120	5.6	580
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	7.0	3.9	24
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	3.1	5.3	14
Benzene	1.1	15	3.6	47
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	Not Detected	4.7	Not Detected
Trichloroethene	1.1	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	6.3	7.7	42
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	11	4.3	40
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	Not Detected	7.8	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected

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Client Sample ID: SV5D-10.25

Lab ID#: 1301135A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011509**	**Date of Collection:**	**1/8/13 4:14:00 PM**
Dil. Factor:	**2.29**	**Date of Analysis:**	**1/15/13 03:23 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.3	Not Detected
Ethyl Benzene	1.1	4.4	5.0	19
m,p-Xylene	1.1	15	5.0	65
o-Xylene	1.1	9.3	5.0	40
Styrene	1.1	Not Detected	4.9	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.9	Not Detected
Propylbenzene	1.1	1.2	5.6	5.9
4-Ethyltoluene	1.1	5.1	5.6	25
1,3,5-Trimethylbenzene	1.1	2.3	5.6	11
1,2,4-Trimethylbenzene	1.1	7.4	5.6	36
1,3-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	88	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Trip Blank

Lab ID#: 1301135A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011420**	**Date of Collection: 1/8/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
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
Bromomethane	5.0	Not Detected	19	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	0.50	Not Detected	1.8	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
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Trip Blank

Lab ID#: 1301135A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011420**	**Date of Collection: 1/8/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1301135A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
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
Bromomethane	5.0	Not Detected	19	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	0.50	Not Detected	1.8	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
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1301135A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	93	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	85	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1301135A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011507**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 02:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
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
Bromomethane	5.0	Not Detected	19	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	0.50	Not Detected	1.8	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
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1301135A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011507**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 02:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	85	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: CCV

Lab ID#: 1301135A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:10 AM**	

Compound	%Recovery
Freon 12	95
Freon 114	103
Chloromethane	91
Vinyl Chloride	102
1,3-Butadiene	105
Bromomethane	104
Chloroethane	103
Freon 11	94
Ethanol	106
Freon 113	106
1,1-Dichloroethene	115
Acetone	109
2-Propanol	110
Carbon Disulfide	109
3-Chloropropene	118
Methylene Chloride	100
Methyl tert-butyl ether	118
trans-1,2-Dichloroethene	116
Hexane	122
1,1-Dichloroethane	102
2-Butanone (Methyl Ethyl Ketone)	105
cis-1,2-Dichloroethene	112
Tetrahydrofuran	108
Chloroform	96
1,1,1-Trichloroethane	93
Cyclohexane	117
Carbon Tetrachloride	91
2,2,4-Trimethylpentane	114
Benzene	99
1,2-Dichloroethane	86
Heptane	113
Trichloroethene	96
1,2-Dichloropropane	95
1,4-Dioxane	98
Bromodichloromethane	89
cis-1,3-Dichloropropene	105
4-Methyl-2-pentanone	110
Toluene	97
trans-1,3-Dichloropropene	115
1,1,2-Trichloroethane	104
Tetrachloroethene	106
2-Hexanone	124

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Client Sample ID: CCV

Lab ID#: 1301135A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:10 AM**	

Compound	%Recovery
Dibromochloromethane	105
1,2-Dibromoethane (EDB)	107
Chlorobenzene	101
Ethyl Benzene	115
m,p-Xylene	119
o-Xylene	123
Styrene	124
Bromoform	107
Cumene	123
1,1,2,2-Tetrachloroethane	98
Propylbenzene	113
4-Ethyltoluene	117
1,3,5-Trimethylbenzene	126
1,2,4-Trimethylbenzene	130
1,3-Dichlorobenzene	109
1,4-Dichlorobenzene	112
alpha-Chlorotoluene	111
1,2-Dichlorobenzene	111
1,2,4-Trichlorobenzene	109
Hexachlorobutadiene	102

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: CCV

Lab ID#: 1301135A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 10:32 AM**	

Compound	%Recovery
Freon 12	95
Freon 114	104
Chloromethane	96
Vinyl Chloride	104
1,3-Butadiene	106
Bromomethane	113
Chloroethane	105
Freon 11	95
Ethanol	108
Freon 113	109
1,1-Dichloroethene	117
Acetone	111
2-Propanol	112
Carbon Disulfide	112
3-Chloropropene	119
Methylene Chloride	100
Methyl tert-butyl ether	120
trans-1,2-Dichloroethene	119
Hexane	124
1,1-Dichloroethane	103
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	114
Tetrahydrofuran	108
Chloroform	96
1,1,1-Trichloroethane	93
Cyclohexane	117
Carbon Tetrachloride	91
2,2,4-Trimethylpentane	115
Benzene	92
1,2-Dichloroethane	80
Heptane	107
Trichloroethene	89
1,2-Dichloropropane	89
1,4-Dioxane	92
Bromodichloromethane	83
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	101
Toluene	91
trans-1,3-Dichloropropene	108
1,1,2-Trichloroethane	99
Tetrachloroethene	102
2-Hexanone	116

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Client Sample ID: CCV

Lab ID#: 1301135A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 10:32 AM**	

Compound	%Recovery
Dibromochloromethane	100
1,2-Dibromoethane (EDB)	101
Chlorobenzene	98
Ethyl Benzene	110
m,p-Xylene	112
o-Xylene	116
Styrene	118
Bromoform	101
Cumene	115
1,1,2,2-Tetrachloroethane	92
Propylbenzene	107
4-Ethyltoluene	112
1,3,5-Trimethylbenzene	118
1,2,4-Trimethylbenzene	123
1,3-Dichlorobenzene	103
1,4-Dichlorobenzene	105
alpha-Chlorotoluene	103
1,2-Dichlorobenzene	104
1,2,4-Trichlorobenzene	103
Hexachlorobutadiene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	90	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCS

Lab ID#: 1301135A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:37 AM**	

Compound	%Recovery
Freon 12	87
Freon 114	94
Chloromethane	91
Vinyl Chloride	96
1,3-Butadiene	96
Bromomethane	99
Chloroethane	96
Freon 11	85
Ethanol	94
Freon 113	98
1,1-Dichloroethene	112
Acetone	99
2-Propanol	100
Carbon Disulfide	121
3-Chloropropene	122
Methylene Chloride	88
Methyl tert-butyl ether	106
trans-1,2-Dichloroethene	121
Hexane	109
1,1-Dichloroethane	93
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	102
Tetrahydrofuran	95
Chloroform	89
1,1,1-Trichloroethane	86
Cyclohexane	106
Carbon Tetrachloride	84
2,2,4-Trimethylpentane	103
Benzene	93
1,2-Dichloroethane	80
Heptane	105
Trichloroethene	92
1,2-Dichloropropane	90
1,4-Dioxane	98
Bromodichloromethane	85
cis-1,3-Dichloropropene	99
4-Methyl-2-pentanone	102
Toluene	90
trans-1,3-Dichloropropene	104
1,1,2-Trichloroethane	94
Tetrachloroethene	94
2-Hexanone	108

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Client Sample ID: LCS

Lab ID#: 1301135A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:37 AM**	

Compound	%Recovery
Dibromochloromethane	94
1,2-Dibromoethane (EDB)	98
Chlorobenzene	93
Ethyl Benzene	103
m,p-Xylene	106
o-Xylene	111
Styrene	113
Bromoform	94
Cumene	111
1,1,2,2-Tetrachloroethane	89
Propylbenzene	102
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	111
1,2,4-Trimethylbenzene	113
1,3-Dichlorobenzene	97
1,4-Dichlorobenzene	99
alpha-Chlorotoluene	107
1,2-Dichlorobenzene	98
1,2,4-Trichlorobenzene	92
Hexachlorobutadiene	87

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	88	70-130

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Client Sample ID: LCSD

Lab ID#: 1301135A-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:56 AM**	

Compound	%Recovery
Freon 12	87
Freon 114	93
Chloromethane	93
Vinyl Chloride	96
1,3-Butadiene	97
Bromomethane	98
Chloroethane	96
Freon 11	85
Ethanol	96
Freon 113	99
1,1-Dichloroethene	112
Acetone	101
2-Propanol	100
Carbon Disulfide	123
3-Chloropropene	122
Methylene Chloride	90
Methyl tert-butyl ether	107
trans-1,2-Dichloroethene	120
Hexane	111
1,1-Dichloroethane	93
2-Butanone (Methyl Ethyl Ketone)	96
cis-1,2-Dichloroethene	102
Tetrahydrofuran	94
Chloroform	89
1,1,1-Trichloroethane	86
Cyclohexane	107
Carbon Tetrachloride	84
2,2,4-Trimethylpentane	106
Benzene	91
1,2-Dichloroethane	78
Heptane	103
Trichloroethene	89
1,2-Dichloropropane	88
1,4-Dioxane	88
Bromodichloromethane	81
cis-1,3-Dichloropropene	93
4-Methyl-2-pentanone	97
Toluene	88
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	91
Tetrachloroethene	92
2-Hexanone	103

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Client Sample ID: LCSD

Lab ID#: 1301135A-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:56 AM**	

Compound	%Recovery
Dibromochloromethane	90
1,2-Dibromoethane (EDB)	95
Chlorobenzene	91
Ethyl Benzene	101
m,p-Xylene	105
o-Xylene	106
Styrene	108
Bromoform	90
Cumene	108
1,1,2,2-Tetrachloroethane	87
Propylbenzene	100
4-Ethyltoluene	99
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	111
1,3-Dichlorobenzene	95
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	102
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	94
Hexachlorobutadiene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: LCS

Lab ID#: 1301135A-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 11:11 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	100
Chloromethane	94
Vinyl Chloride	101
1,3-Butadiene	102
Bromomethane	109
Chloroethane	103
Freon 11	89
Ethanol	99
Freon 113	104
1,1-Dichloroethene	120
Acetone	106
2-Propanol	105
Carbon Disulfide	129
3-Chloropropene	130
Methylene Chloride	92
Methyl tert-butyl ether	111
trans-1,2-Dichloroethene	128
Hexane	115
1,1-Dichloroethane	97
2-Butanone (Methyl Ethyl Ketone)	101
cis-1,2-Dichloroethene	108
Tetrahydrofuran	98
Chloroform	93
1,1,1-Trichloroethane	89
Cyclohexane	112
Carbon Tetrachloride	87
2,2,4-Trimethylpentane	107
Benzene	86
1,2-Dichloroethane	73
Heptane	98
Trichloroethene	85
1,2-Dichloropropane	84
1,4-Dioxane	91
Bromodichloromethane	79
cis-1,3-Dichloropropene	93
4-Methyl-2-pentanone	93
Toluene	84
trans-1,3-Dichloropropene	103
1,1,2-Trichloroethane	92
Tetrachloroethene	93
2-Hexanone	107

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Client Sample ID: LCS

Lab ID#: 1301135A-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 11:11 AM**	

Compound	%Recovery
Dibromochloromethane	92
1,2-Dibromoethane (EDB)	97
Chlorobenzene	92
Ethyl Benzene	102
m,p-Xylene	105
o-Xylene	109
Styrene	111
Bromoform	94
Cumene	109
1,1,2,2-Tetrachloroethane	87
Propylbenzene	100
4-Ethyltoluene	99
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	111
1,3-Dichlorobenzene	95
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	104
1,2-Dichlorobenzene	97
1,2,4-Trichlorobenzene	90
Hexachlorobutadiene	85

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	96	70-130

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Client Sample ID: LCSD

Lab ID#: 1301135A-09BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 11:29 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	97
Chloromethane	96
Vinyl Chloride	99
1,3-Butadiene	100
Bromomethane	109
Chloroethane	100
Freon 11	87
Ethanol	101
Freon 113	103
1,1-Dichloroethene	118
Acetone	105
2-Propanol	105
Carbon Disulfide	129
3-Chloropropene	129
Methylene Chloride	93
Methyl tert-butyl ether	110
trans-1,2-Dichloroethene	125
Hexane	115
1,1-Dichloroethane	96
2-Butanone (Methyl Ethyl Ketone)	100
cis-1,2-Dichloroethene	108
Tetrahydrofuran	98
Chloroform	92
1,1,1-Trichloroethane	88
Cyclohexane	113
Carbon Tetrachloride	87
2,2,4-Trimethylpentane	108
Benzene	86
1,2-Dichloroethane	72
Heptane	98
Trichloroethene	84
1,2-Dichloropropane	84
1,4-Dioxane	84
Bromodichloromethane	77
cis-1,3-Dichloropropene	89
4-Methyl-2-pentanone	91
Toluene	85
trans-1,3-Dichloropropene	100
1,1,2-Trichloroethane	91
Tetrachloroethene	93
2-Hexanone	104

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Client Sample ID: LCSD

Lab ID#: 1301135A-09BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 11:29 AM**	

Compound	%Recovery
Dibromochloromethane	91
1,2-Dibromoethane (EDB)	96
Chlorobenzene	92
Ethyl Benzene	102
m,p-Xylene	105
o-Xylene	108
Styrene	109
Bromoform	90
Cumene	108
1,1,2,2-Tetrachloroethane	87
Propylbenzene	100
4-Ethyltoluene	98
1,3,5-Trimethylbenzene	109
1,2,4-Trimethylbenzene	112
1,3-Dichlorobenzene	95
1,4-Dichlorobenzene	96
alpha-Chlorotoluene	100
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	94
Hexachlorobutadiene	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	95	70-130

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

Project Manager Ron Helm
Collected by: (Print and Sign) Ross Tinline
Company Cornerstone Email
Address City State Zip
Phone 408 285 4600 Fax

Project Info:
P.O. #
Project #
Project Name Samsung

Turn Around Time:
☒ Normal
☐ Rush 5 DAY specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	FC #
01A	SV-7 D10.25	37662	1-8-13	1357-1406	VOCs by TO15	29.71	22.71			20335
02A	SV-6 D5.25	15743	1-8-13	1431-1450	Fixed Gases	29.68	11.90			20206
03A	SV-6 D10.25	36562	1-8-13	1507-1515	Methane, CO_2, O_2	29.70	22.70			20419
04A	SV-5 D5.25	12383	1-8-13	1541-1547	TO15 Aliphatic +	29.37	5.00			20334
05A	SV-5 D 10.25	9388	1-8-13	1605-1614	Aromatic hydrocarbons	29.53	4.90			20347
06A	Trip Blank	34582	1-8-13	—	(VPH)	—	—			—
	SV-6 D5.25 (IPA)	3622	1-8-13	1434-1437	TO15 5920 for 2 propanol only.	29.5	4.5			100172

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1855
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
			1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
Fedex		N/A	Good	Yes No None	1301135

Form 1293 rev.11

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1/17/2013

Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301135B

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 APH 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1301135B

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/17/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-7D10.25	Modified TO-15 APH	21.0 "Hg	15 psi
01B	SV-7D10.25	Modified TO-15 APH	21.0 "Hg	15 psi
02A	SV-6D5.25	Modified TO-15 APH	10.0 "Hg	15 psi
02B	SV-6D5.25	Modified TO-15 APH	10.0 "Hg	15 psi
03A	SV-6D10.25	Modified TO-15 APH	20.5 "Hg	15 psi
03B	SV-6D10.25	Modified TO-15 APH	20.5 "Hg	15 psi
04A	SV5D5.25	Modified TO-15 APH	3.5 "Hg	15 psi
04B	SV5D5.25	Modified TO-15 APH	3.5 "Hg	15 psi
05A	SV5D-10.25	Modified TO-15 APH	3.5 "Hg	15 psi
05B	SV5D-10.25	Modified TO-15 APH	3.5 "Hg	15 psi
06A	Trip Blank	Modified TO-15 APH	27.5 "Hg	15 psi
06B	Trip Blank	Modified TO-15 APH	27.5 "Hg	15 psi
07A	Lab Blank	Modified TO-15 APH	NA	NA
07B	Lab Blank	Modified TO-15 APH	NA	NA
07C	Lab Blank	Modified TO-15 APH	NA	NA
07D	Lab Blank	Modified TO-15 APH	NA	NA
08A	CCV	Modified TO-15 APH	NA	NA
08B	CCV	Modified TO-15 APH	NA	NA
08C	CCV	Modified TO-15 APH	NA	NA
08D	CCV	Modified TO-15 APH	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 01/17/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 & VPH Fractions
Cornerstone Earth Group
Workorder# 1301135B

Six 1 Liter Summa Canister samples were received on January 09, 2013. The laboratory performed analysis via EPA Method TO-15 and Air Toxics VPH (Volatile Petroleum Hydrocarbon) methods for the Determination of VPH Fractions using GC/MS in the full scan mode. The method involves concentrating up to 0.5 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 method is designed to measure gaseous phase aliphatic and aromatic compounds in ambient air and soil gas collected in stainless steel Summa canisters. Air Toxics VPH method is a hybrid of EPA TO-15, MADEP APH and WSDE VPH methods. Chromatographic peaks were identified via mass spectrum as either aliphatic or aromatic petroleum hydrocarbons and included in the appropriate range as defined by the method. The volatile Aliphatic hydrocarbons are collectively quantified within the C5 to C6 range, C6 to C8 range, C8 to C10 range and the C10 to C12 range. Additionally, the volatile Aromatic hydrocarbons are collectively quantified within the C8 to C10 range and the C10 to C12 range. The Aromatic ranges refer to the equivalent carbon (EC) ranges.

Aliphatic data is calculated from the Total Ion chromatogram which has been reprocessed in a duplicate file differentiated from the original by the addition of an alphanumeric extension. The Aromatic calculation also uses the information contained in the associated Extracted Ion file.

Receiving Notes

Samples SV-7D10.25 and SV-6D10.25 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

There were no analytical discrepancies.

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 and/or LCS.

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

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

Client Sample ID: SV-7D10.25

Lab ID#: 1301135B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	67	200	220	640
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	67	150	280	600
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	67	170	470	1200

Client Sample ID: SV-7D10.25

Lab ID#: 1301135B-01B

No Detections Were Found.

Client Sample ID: SV-6D5.25

Lab ID#: 1301135B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	30	260	98	860
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	30	180	120	760
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	30	66	180	380
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	30	340	210	2400

Client Sample ID: SV-6D5.25

Lab ID#: 1301135B-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	30	190	150	920

Client Sample ID: SV-6D10.25

Lab ID#: 1301135B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	64	580	210	1900

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

Client Sample ID: SV-6D10.25

Lab ID#: 1301135B-03A

>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	64	220	260	920
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	64	67	440	470

Client Sample ID: SV-6D10.25

Lab ID#: 1301135B-03B

No Detections Were Found.

Client Sample ID: SV5D5.25

Lab ID#: 1301135B-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	130	160	890

Client Sample ID: SV5D5.25

Lab ID#: 1301135B-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	23	99	110	490

Client Sample ID: SV5D-10.25

Lab ID#: 1301135B-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	65	74	210
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	89	94	360
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	25	130	140
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	44	160	310

Client Sample ID: SV5D-10.25

Lab ID#: 1301135B-05B

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

Client Sample ID: SV5D-10.25

Lab ID#: 1301135B-05B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	23	23	110	110

Client Sample ID: Trip Blank

Lab ID#: 1301135B-06A

No Detections Were Found.

Client Sample ID: Trip Blank

Lab ID#: 1301135B-06B

No Detections Were Found.

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Client Sample ID: SV-7D10.25

Lab ID#: 1301135B-01A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011421a**	**Date of Collection: 1/8/13 2:06:00 PM**	
Dil. Factor:	**6.73**	**Date of Analysis: 1/14/13 10:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	67	200	220	640
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	67	150	280	600
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	67	Not Detected	390	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	67	170	470	1200

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-7D10.25

Lab ID#: 1301135B-01B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011421c**	**Date of Collection: 1/8/13 2:06:00 PM**	
Dil. Factor:	**6.73**	**Date of Analysis: 1/14/13 10:18 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	67	Not Detected	330	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	67	Not Detected	370	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-6D5.25

Lab ID#: 1301135B-02A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011508a**	**Date of Collection: 1/8/13 2:50:00 PM**	
Dil. Factor:	**3.03**	**Date of Analysis: 1/15/13 02:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	30	260	98	860
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	30	180	120	760
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	30	66	180	380
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	30	340	210	2400

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-6D5.25

Lab ID#: 1301135B-02B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011508c**	**Date of Collection: 1/8/13 2:50:00 PM**	
Dil. Factor:	**3.03**	**Date of Analysis: 1/15/13 02:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	30	190	150	920
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	30	Not Detected	170	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-6D10.25

Lab ID#: 1301135B-03A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011422a**	**Date of Collection: 1/8/13 3:15:00 PM**	
Dil. Factor:	**6.38**	**Date of Analysis: 1/14/13 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	64	580	210	1900
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	64	220	260	920
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	64	Not Detected	370	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	64	67	440	470

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-6D10.25

Lab ID#: 1301135B-03B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011422c**	**Date of Collection: 1/8/13 3:15:00 PM**	
Dil. Factor:	**6.38**	**Date of Analysis: 1/14/13 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	64	Not Detected	310	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	64	Not Detected	350	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV5D5.25

Lab ID#: 1301135B-04A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011423a**	**Date of Collection: 1/8/13 3:47:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/14/13 11:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	Not Detected	74	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	Not Detected	94	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	Not Detected	130	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	130	160	890

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV5D5.25

Lab ID#: 1301135B-04B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011423c**	**Date of Collection: 1/8/13 3:47:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/14/13 11:08 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	23	99	110	490
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	23	Not Detected	120	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV5D-10.25

Lab ID#: 1301135B-05A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011509a**	**Date of Collection: 1/8/13 4:14:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/15/13 03:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	23	65	74	210
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	23	89	94	360
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	23	25	130	140
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	23	44	160	310

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV5D-10.25

Lab ID#: 1301135B-05B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011509c**	**Date of Collection: 1/8/13 4:14:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/15/13 03:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	23	23	110	110
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	23	Not Detected	120	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Trip Blank

Lab ID#: 1301135B-06A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011420a**	**Date of Collection: 1/8/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	10	Not Detected	32	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	10	Not Detected	41	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	10	Not Detected	58	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	10	Not Detected	70	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Trip Blank

Lab ID#: 1301135B-06B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011420c**	**Date of Collection: 1/8/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 09:46 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	10	Not Detected	55	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1301135B-07A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	10	Not Detected	32	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	10	Not Detected	41	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	10	Not Detected	58	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	10	Not Detected	70	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1301135B-07B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011407c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 12:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1301135B-07C

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011507a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 02:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	10	Not Detected	32	Not Detected
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	10	Not Detected	41	Not Detected
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	10	Not Detected	58	Not Detected
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	10	Not Detected	70	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1301135B-07D

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011507c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 02:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	10	Not Detected	49	Not Detected
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	10	Not Detected	55	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1301135B-08A

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011405a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 10:26 AM**	

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	104
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	120
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	109
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	71

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1301135B-08B

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011405c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 10:26 AM**	

Compound	%Recovery
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	113
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	100

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1301135B-08C

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011505a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 12:01 PM**	

Compound	%Recovery
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	100
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	114
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	103
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	64

Container Type: NA - Not Applicable

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Client Sample ID: CCV

Lab ID#: 1301135B-08D

MODIFIED METHOD TO-15 GC/MS FULL SCAN

File Name:	**3011505c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 12:01 PM**	

Compound	%Recovery
>C8-C10 Aromatic Hydrocarbons (ref. to 1,2,3-TMB)	114
>C10-C12 Aromatic Hydrocarbons (ref. to 1,2,4,5-TMB)	99

Container Type: NA - Not Applicable

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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 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 collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Ron Helm
Collected by: (Print and Sign) Ross Tinline
Company Cornerstone Email
Address City State Zip
Phone 408 285 4600 Fax

Project Info:
P.O. #
Project #
Project Name Samsung

Turn Around Time:
☒ Normal
☐ Rush 5 DAY specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	FC #
01A	SV-7 D10.25	37662	1-8-13	1357-1406	VOCs by TO15	29.71	22.71			20335
02A	SV-6 D5.25	15743	1-8-13	1431-1450	Fixed Gases	29.68	11.90			20206
03A	SV-6 D10.25	36562	1-8-13	1507-1515	Methane, CO_2, O_2	29.70	22.70			20419
04A	SV-5 D5.25	12383	1-8-13	1541-1547	TO15 Aliphatic +	29.37	5.00			20334
05A	SV-5 D 10.25	9388	1-8-13	1605-1614	Aromatic hydrocarbons	29.53	4.90			20347
06A	Trip Blank	34582	1-8-13	—	(VPH)	—	—			—
	SV-6 D5.25 (IPA)	3622	1-8-13	1434-1437	TO15 5920 for 2 propanol only.	29.5	4.5			100172

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1855
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
			1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
Fedex		N/A	Good	Yes No None	1301135

Form 1293 rev.11

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1/16/2013
Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301135C

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1301135C

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-7D10.25	Modified ASTM D-1946	21.0 "Hg	15 psi
02A	SV-6D5.25	Modified ASTM D-1946	10.0 "Hg	15 psi
03A	SV-6D10.25	Modified ASTM D-1946	20.5 "Hg	15 psi
04A	SV5D5.25	Modified ASTM D-1946	3.5 "Hg	15 psi
05A	SV5D-10.25	Modified ASTM D-1946	3.5 "Hg	15 psi
06A	Trip Blank	Modified ASTM D-1946	27.5 "Hg	15 psi
07A	Lab Blank	Modified ASTM D-1946	NA	NA
08A	LCS	Modified ASTM D-1946	NA	NA
08AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 01/16/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
Cornerstone Earth Group
Workorder# 1301135C

Six 1 Liter Summa Canister samples were received on January 09, 2013. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

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

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A 3-point calibration curve is performed. Quantitation is based on a daily calibration standard which may or may not resemble the composition of the associated samples.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

Samples SV-7D10.25 and SV-6D10.25 were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

The trip blank sample has reportable levels of Oxygen present. Reanalysis confirm initial result.

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

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SV-7D10.25

Lab ID#: 1301135C-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.67	10
Nitrogen	0.67	87
Methane	0.00067	0.0044
Carbon Dioxide	0.067	2.9

Client Sample ID: SV-6D5.25

Lab ID#: 1301135C-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.30	12
Nitrogen	0.30	86
Methane	0.00030	0.0014
Carbon Dioxide	0.030	1.6

Client Sample ID: SV-6D10.25

Lab ID#: 1301135C-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.64	12
Nitrogen	0.64	86
Methane	0.00064	0.0034
Carbon Dioxide	0.064	1.0

Client Sample ID: SV5D5.25

Lab ID#: 1301135C-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	6.0
Nitrogen	0.23	87
Carbon Dioxide	0.023	7.1

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SV5D-10.25

Lab ID#: 1301135C-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	4.4
Nitrogen	0.23	90
Carbon Dioxide	0.023	5.5

Client Sample ID: Trip Blank

Lab ID#: 1301135C-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	0.20
Nitrogen	0.10	100

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Client Sample ID: SV-7D10.25

Lab ID#: 1301135C-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011410**	**Date of Collection: 1/8/13 2:06:00 PM**	
Dil. Factor:	**6.73**	**Date of Analysis: 1/14/13 12:16 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.67	10
Nitrogen	0.67	87
Carbon Monoxide	0.067	Not Detected
Methane	0.00067	0.0044
Carbon Dioxide	0.067	2.9
Ethane	0.0067	Not Detected
Ethene	0.0067	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-6D5.25

Lab ID#: 1301135C-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011411**	**Date of Collection: 1/8/13 2:50:00 PM**	
Dil. Factor:	**3.03**	**Date of Analysis: 1/14/13 01:39 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.30	12
Nitrogen	0.30	86
Carbon Monoxide	0.030	Not Detected
Methane	0.00030	0.0014
Carbon Dioxide	0.030	1.6
Ethane	0.0030	Not Detected
Ethene	0.0030	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV-6D10.25

Lab ID#: 1301135C-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011412**	**Date of Collection: 1/8/13 3:15:00 PM**	
Dil. Factor:	**6.38**	**Date of Analysis: 1/14/13 02:05 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.64	12
Nitrogen	0.64	86
Carbon Monoxide	0.064	Not Detected
Methane	0.00064	0.0034
Carbon Dioxide	0.064	1.0
Ethane	0.0064	Not Detected
Ethene	0.0064	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV5D5.25

Lab ID#: 1301135C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011413**	**Date of Collection: 1/8/13 3:47:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/14/13 02:30 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	6.0
Nitrogen	0.23	87
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	7.1
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SV5D-10.25

Lab ID#: 1301135C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011414**	**Date of Collection: 1/8/13 4:14:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 1/14/13 02:52 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	4.4
Nitrogen	0.23	90
Carbon Monoxide	0.023	Not Detected
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	5.5
Ethane	0.0023	Not Detected
Ethene	0.0023	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Trip Blank

Lab ID#: 1301135C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011415**	**Date of Collection: 1/8/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 03:14 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.10	0.20
Nitrogen	0.10	100
Carbon Monoxide	0.010	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected
Ethane	0.0010	Not Detected
Ethene	0.0010	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1301135C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 08:49 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Monoxide	0.010	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected
Ethane	0.0010	Not Detected
Ethene	0.0010	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1301135C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 07:47 AM**	

Compound	%Recovery
Oxygen	102
Nitrogen	100
Carbon Monoxide	98
Methane	95
Carbon Dioxide	101
Ethane	96
Ethene	93

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1301135C-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9011416**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/14/13 03:36 PM**	

Compound	%Recovery
Oxygen	101
Nitrogen	102
Carbon Monoxide	96
Methane	96
Carbon Dioxide	102
Ethane	97
Ethene	94

Container Type: NA - Not Applicable

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CHAIN-OF-CUSTODY RECORD

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 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 collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Ron Helm
Collected by: (Print and Sign) Ross Tinline
Company Cornerstone Email
Address City State Zip
Phone 408 285 4600 Fax

Project Info:
P.O. #
Project #
Project Name Samsung

Turn Around Time:
☒ Normal
☐ Rush 5 DAY specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	FC #
01A	SV-7 D10.25	37662	1-8-13	1357-1406	VOCs by TO15	29.71	22.71			20335
02A	SV-6 D5.25	15743	1-8-13	1431-1450	Fixed Gases	29.68	11.90			20206
03A	SV-6 D10.25	36562	1-8-13	1507-1515	Methane, CO_2, O_2	29.70	22.70			20419
04A	SV-5 D5.25	12383	1-8-13	1541-1547	TO15 Aliphatic +	29.37	5.00			20334
05A	SV-5 D 10.25	9388	1-8-13	1605-1614	Aromatic hydrocarbons	29.53	4.90			20347
06A	Trip Blank	34582	1-8-13	—	(VPH)	—	—			—
	SV-6 D5.25 (IPA)	3622	1-8-13	1434-1437	TO15 5920 for 2 propanol only.	29.5	4.5			100172

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1855
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
			1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
Fedex		N/A	Good	Yes No None	1301135

Form 1293 rev.11

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1/16/2013
Mr. Ron Helm
Cornerstone Earth Group
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: Samsung
Project #:
Workorder #: 1301135D

Dear Mr. Ron Helm

The following report includes the data for the above referenced project for sample(s) received on 1/9/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-14A/15 (5&20 ppbv) 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 Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1301135D

Work Order Summary

CLIENT:	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	**BILL TO:**	Mr. Ron Helm Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
PHONE:	408-245-4600	**P.O. #**	
FAX:	408-245-4620	**PROJECT #**	Samsung
DATE RECEIVED:	01/09/2013	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	01/16/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
07A	SV-6D5.25 (IPA)	Modified TO-14A/15 (5&20]	2.2 "Hg	15.7 psi
08A	Lab Blank	Modified TO-14A/15 (5&20]	NA	NA
09A	CCV	Modified TO-14A/15 (5&20]	NA	NA
10A	LCS	Modified TO-14A/15 (5&20]	NA	NA
10AA	LCSD	Modified TO-14A/15 (5&20]	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 01/16/13

Technical Director

Certfication numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2011, Expiration date: 10/17/2012.
Eurofins Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
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LABORATORY NARRATIVE
EPA Method TO-15 Soil Gas
Cornerstone Earth Group
Workorder# 1301135D

One PAC250 Canister sample was received on January 09, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs 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.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample SV-6D5.25 (IPA) 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 and/or LCS.
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

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS

Client Sample ID: SV-6D5.25 (IPA)

Lab ID#: 1301135D-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	180	18000	440	44000

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Client Sample ID: SV-6D5.25 (IPA)

Lab ID#: 1301135D-07A

EPA METHOD TO-15 GC/MS

File Name:	**14011522**	**Date of Collection: 1/8/13**	
Dil. Factor:	**8.93**	**Date of Analysis: 1/15/13 04:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	180	18000	440	44000

Container Type: PAC250 Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1301135D-08A

EPA METHOD TO-15 GC/MS

File Name:	**14011505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 09:30 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	20	Not Detected	49	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: CCV

Lab ID#: 1301135D-09A

EPA METHOD TO-15 GC/MS

File Name:	**14011502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 08:03 AM**	

Compound	%Recovery
2-Propanol	88

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCS

Lab ID#: 1301135D-10A

EPA METHOD TO-15 GC/MS

File Name:	**14011503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 08:29 AM**	

Compound	**%Recovery**
2-Propanol	106

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: LCSD

Lab ID#: 1301135D-10AA

EPA METHOD TO-15 GC/MS

File Name:	**14011504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 1/15/13 08:49 AM**	

Compound	%Recovery
2-Propanol	107

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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 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 collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Ron Helm
Collected by: (Print and Sign) Ross Tinline
Company Cornerstone Email
Address City State Zip
Phone 405 286 4600 Fax

Project Info:
P.O. #
Project #
Project Name Samsung

Turn Around Time:
☑ Normal
☐ Rush
5 DAY
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

FC #

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)	
	SV-7 D10.25	37662	1-8-13	1357 / 1406	VOCs by TO15	29.71	22.71			20335
	SV-6 D5.25	15743	1-8-13	1431 / 1450	Fixed Gases	29.68	11.90			20206
	SV-6 D10.25	36562	1-8-13	1507 / 1515	Methane, CO_2, O_2	29.70	22.70			20419
	SV-5 D5.25	12383	1-8-13	1541 / 1547	TO15 Aliphatic +	29.37	5.00			20334
	SV-5 D 10.25	9388	1-8-13	1605 / 1614	Aromatic hydrocarbons	29.53	4.90			20347
	Trip Blank	34582	1-8-13	—	(VPH)	—	—			—
07A	SV-6 D5.25 (IPA)	3622	1-8-13	1434 / 1437	TO15 5920 for 2 proposed only.	29.5	4.5			100172

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Ron Helm	1-8-13	Fedex	1-8-13 1855
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
			1/9/13 1000
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		N/A	Good	Yes No None	1301135

Form 1293 rev.11