SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

ALASKA
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COLORADO
FLORIDA
MISSOURI
OREGON
WASHINGTON

May 1, 2013

Gavora, Inc.
246 Illinois Street, #3B
Fairbanks, Alaska 99707

Attn: Mr. Rudy Gavora

RE: SUBSLAB AND INDOOR-AIR SAMPLING, SHOPPER'S FORUM MALL ANNEX, 1255 AIRPORT WAY, FAIRBANKS, ALASKA

This letter presents the results of sub-slab, crawlspace, and indoor-air sampling we conducted in April 2013 in support of ongoing vapor-intrusion assessment activities at the Shopper's Forum Mall annex in Fairbanks, Alaska. We conducted this VIA in partial fulfillment of the Alaska Department of Environmental Conservation (ADEC)'s requirements for site characterization and indoor-air mitigation described in their Notice of Violation letter to you dated March 1, 2013. The objective of our services was to evaluate the effectiveness of interim measures taken to improve indoor-air quality at the annex, specifically the installation of heat-recovery ventilators in the crawlspaces on the east end of the building, and in-line carbon filters installed in the building's ventilation system.

The purpose of this letter is to document our subslab, crawlspace, and indoor-air sampling activities. Background information on the site and previous investigations is presented in our March 2013 *Work Plan, Building Assessment and Site Characterization, Shopper's Forum Mall, Fairbanks, Alaska* and is not repeated here. Sample locations were consistent with those in the 2011 and 2012 sampling events. The sampling was conducted in general accordance with our March 2013 work plan and the ADEC Vapor Intrusion Guidance for Contaminated Sites (October 2012).

SCOPE OF SERVICES

To accomplish this objective, we performed the following services:

- sampled three sub-slab soil-gas ports at the mall annex;
- collected two crawlspace air samples at the annex;

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- collected indoor-air samples in each of the lease units at the annex; and
- prepared this letter report summarizing our activities and analytical results

This letter serves as a data report and does not include recommendations for cleanup.

Sub-Slab Soil-Gas Sampling

We collected three sub-slab samples: one near the kitchen at Miguel's Restaurant (*SubSlabA*); one from Miguel's bar (*SubSlabB)*; and one from Miguel's new addition (*SubSlabC*). We collected these samples from subslab sampling ports we installed in April 2011.

We collected the sub-slab samples on April 3 and 4, 2013, using a 1-liter Summa canister with a sample duration of approximately 6 minutes. We used a 100-parts-per-million (ppm) isobutylene-in-air standard as a leak-detection tracer.

Crawlspace sampling

We collected two crawlspace samples: one from the crawlspace beneath Bamboo Panda (*Crawlspace_BP*), and one from the crawlspace beneath Fairbanks Fast Foto (*Crawlspace_FF*). The crawlspace is divided into two sections by a framed wall covered in Visqueen.

We collected the crawlspace samples using 6-liter Summa canisters with a sample duration of 24 hours, from April 3-4, 2013. We also collected samples using Radiello® 130 passive samplers in parallel with the active canister-based samples.

Indoor-Air Sampling

We collected four indoor-air samples and one QC duplicate. Two days prior to sampling we asked Miguel to turn off ADEC's granular activated carbon (GAC) filter in their office. We collected sample *Miguels_kitchen* from the pantry in Miguel's kitchen, *Miguels_officeA* and QC-duplicate *Miguels_officeB* from Miguel's office, *Bamboo_Panda* from the kitchen of Bamboo Panda, and *FastFoto_office* from the office of Fairbanks Fast Foto. We collected the indoor-air samples using 6-liter Summa canisters with a sample duration of 24 hours, from April 3-4, 2013. We also collected samples using Radiello® 130 passive samplers in parallel with the active canister-based samples.

We submitted the soil-gas and indoor-air samples to Air Toxics, Ltd. in Folsom, California, for analysis of volatile organic compounds (VOCs) by Method TO-15. Air Toxics also analyzed the Radiello® samplers using their in-house standard method.

RESULTS

Analytical results of sub-slab, crawlspace, and indoor-air samples are presented in Tables 1 for the following target analytes: tetrachloroethylene (PCE); trichloroethylene (TCE); cis-1,2-dichloroethylene (cis-1,2-DCE); trans-1,2-dichloroethylene (trans-1,2-DCE); and vinyl chloride (VC). The table includes the ADEC target levels for Commercial Shallow Soil Gas Screening Levels (also applied to crawlspace air) and Commercial Indoor Air, respectively, for comparison. We also include historic PCE results in Table 2.

QUALITY ASSURANCE/QUALITY CONTROL

We conducted a quality control/quality assurance (QA/QC) review of air-sample analytical data, including review of laboratory QC-sample results and our own QA assessment. Our assessment included consideration of sample-handling, analytical sensitivity, accuracy, precision, and completeness, as well as completion of an ADEC data-review checklist for each of the laboratory data reports. The checklists and laboratory reports are appended to this report, and provide additional details regarding our QA review. The following is a summary of data quality as it pertains to the VIA.

One sample-handling anomaly was identified. The glass cartridge for sample *Crawlspace_FF* broke upon opening it for sampling; we sealed the sample upon collection with Parafilm, but consider the results biased low (flagged JL) due to possible loss of analyte during sample storage and shipment. Canisters for TO-15 analysis were received in good condition and with acceptable vacuum. No analytes were detected in the method blanks. Reporting limits for target analytes were below ADEC target levels, with the exception of cis-1,2-DCE, trans-1,2-DCE, and VC in sample *SubSlabA*. However, as this sample contained PCE and TCE well above target levels, the inability to detect the other analytes at or below target levels does not affect the usability of the data. We did not check reporting limits for non-target analytes. Laboratory control sample and duplicate (LCS/LCSD) recovery information showed the analyses were accurate; LCS/LCSD and field-duplicate relative percent difference calculations showed the analyses were precise.

No data were rejected as unusable; completeness objectives were met. Overall, data quality was acceptable and the results are considered representative of site conditions at the times and locations they were collected.

DISCUSSION

Laboratory results indicate PCE concentrations in sub-slab soil gas at Miguel's ranged from 17,000 micrograms per cubic meter (µg/m^3) to 2,900,000 µg/m^3, several orders of magnitude higher than the ADEC shallow-soil-gas target level of 1,800 µg/m^3. Similarly, TCE, with a target level of 88 µg/m^3, ranged from 1,000 µg/m^3 to 18,000 µg/m^3. Additionally, cis-1,2-DCE was detected at two of the four sub-slab sampling points, above its target level. PCE and TCE were detected, but were below target levels, in the crawlspace samples. Sub-slab and crawlspace concentrations were similar to those encountered in previous sampling events.

PCE and TCE were detected in each of the indoor-air samples. PCE was above the target level at each unit, ranging from 210 µg/m^3 at Bamboo Panda to 470 µg/m^3 in Miguel's office. These levels are similar or slightly lower than those at Miguel's and Bamboo Panda during sampling in 2012, but the Fairbanks Fast Foto results appear to represent a significant increase.

Statistical analysis of trends is precluded by the limited number of sampling events. While concentrations appear to have gone down slightly in some units, they have gone up in others. However, the data suggests that the interim measures taken to improve air quality by changing air-handling system configuration have not yet been successful. We plan to work further with building maintenance staff and their heating, ventilation, and air-conditioning contractor to determine if the system is optimally configured. We will continue to pursue the tasks outlined in our March 2013 work plan, including design of a sub-slab depressurization system.

LIMITATIONS

This report was prepared for the use of Gavora, Inc., and its representatives for evaluating soil-gas and indoor-air concentrations of chlorinated solvents at the Shopper's Forum Mall annex building. This work presents our professional judgment as to the conditions at the building. The data presented in this report should not be construed as definite conclusions about soil-gas or indoor-air conditions in the area, and it is possible our tests may not represent the highest levels of contamination in the area. No other buildings were assessed for vapor intrusion as part of this

investigation. We have not performed an independent evaluation of the accuracy or completeness of third-party information other than conducting analytical data-quality review, and shall not be responsible for errors or omissions contained in such information.

The results included in this report should be considered representative of the time and locations at which the sampling occurred. It was not the intent of our investigation to detect the presence of air or soil gas affected by contaminants other than those for which laboratory analyses were performed. No conclusions can be drawn on the presence or absence of other contaminants. The observed levels of contamination may be dependent on seasonal changes and the passage of time. Due to such changes, or others beyond our control, our observations and recommendations applicable to this site may need to be revised. If substantial time has elapsed between submission of this report and the start of activities or action based upon it, we recommend this report be reviewed to determine the applicability of the conclusions and recommendations considering the lapsed time or changed conditions.

This report was prepared for the exclusive use of our Client. All documents prepared by Shannon & Wilson are instruments of service with respect to the project for the sole use of our Client. Only our Client shall have the right to rely upon such documents. Such documents are not intended or represented to be suitable for reuse by our Client or others after the passage of time, on extensions of the project, or on any other project. Any such reuse without written verification or adaptation by Shannon & Wilson, as appropriate for the specific purpose intended, shall be at the user's sole risk.

Copies of documents that may be relied upon by our Client are limited to the printed copies (also known as hard copies) signed or sealed by Shannon & Wilson. Text, data, or graphics files in electronic media format are furnished solely for the convenience of our Client. Any conclusion or information obtained or derived from such electronic files shall be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

Because data stored in electronic media can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the Client should perform acceptance tests or procedures within 60 days after its receipt, after which, unless notice of any errors are given in writing to Shannon & Wilson, the Client shall be deemed to have accepted the data thus transferred. Any errors reported within the 60-day acceptance period shall be corrected by

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When transferring documents in electronic media format, Shannon & Wilson does not make any representations as to long-term compatibility, usability, or readability of documents, resulting from the use of software application packages, operating systems, or computer hardware differing from those used for the document's creation.

We are pleased to have this opportunity to assist you with this project. Please contact me if you have any questions.

Sincerely,

SHANNON & WILSON, INC.

for

Rodney Guritz
Environmental Chemist

Reviewed by:

Christopher B. Darrah, C.P.G., CPESC
Associate Geologist

Enclosures: Table 1 – April 2013 Sub-Slab, Crawlspace, and Indoor-Air Sample Results
Table 2 – Historic PCE Results
Air Toxics, Inc. Laboratory Data Reports (Work Orders 1304184, 1304197A, and 1304197B)
ADEC Laboratory Data Review Checklists

c: Dr. Tamara Cardona, ADEC Contaminated Sites Program

Table 1
April 2013 Sub-Slab, Crawlspace, and Indoor-Air Sample Results

Sub-Slab & Crawlspace		ADEC Shallow Soil Gas Target Level	Crawlspace Samples		Sub-Slab Samples		
Analyte	Units		Crawlspace_FF	Crawlspace_BP	SubSlabC	SubSlabA	SubSlabB
Tetrachloroethene (PCE)	µg/m^3	1800	620	1,400	**100,000**	**2,900,000**	**17,000**
PCE by Raidello 130	µg/m^3		340 JL	1,000	—	—	—
	Passive-sampler RPD:		*58%*	*33%*	—	—	—
Trichloroethene (TCE)	µg/m^3	88	3.1	7.1	**3,600**	**18,000**	**1,000**
TCE by Raidello 130	µg/m^3		1.9 JL	6.7	—	—	—
	Passive-sampler RPD:		*48%*	*6%*	—	—	—
cis-1,2-Dichloroethene	µg/m^3	310	2.1	5.2	**13,000**	**<7,900**	**360**
trans-1,2-Dichloroethene	µg/m^3	2600	<3.1	<6.4	1,600	**<7,900**	120
Vinyl Chloride	µg/m^3	280	<0.20	<0.41	<130	**<5,100**	<29

Indoor Air		ADEC Indoor Air Target Level	Indoor Air Samples				
Analyte	Units		FastFoto_office	Bamboo_Panda	Miguels_office A	Miguels_office B (duplicate)	Miguels_kitchen
Tetrachloroethene (PCE)	µg/m^3	180	**260**	**200**	**430**	**470**	**260**
PCE by Raidello 130	µg/m^3		**250**	**210**	**390**	**380**	**240**
	Passive-sampler RPD:		*4%*	*5%*	*10%*	*21%*	*8%*
Trichloroethene (TCE)	µg/m^3	8.8	1.6	1.1	2.4	2.7	1.7
TCE by Raidello 130	µg/m^3		1.6	1.4	2.6	2.5	1.8
	Passive-sampler RPD:		*0%*	*24%*	*8%*	*8%*	*6%*
cis-1,2-Dichloroethene	µg/m^3	31	0.94	1.1	3.5	3.6	2.6
trans-1,2-Dichloroethene	µg/m^3	260	<1.4	<1.4	<2.1	<2.2	<1.3
Vinyl Chloride	µg/m^3	28	<0.090	<0.088	<0.13	<0.14	<0.085

Notes:
DRAFT RESULTS - DATA REVIEW NOT YET COMPLETE

Table 2
Historic PCE Results

Sampling Location	Date	PCE µg/m^3
Miguel's - Sub-Slab Port A	April 2011	**1,400,000**
	February 2012	**490,000**
	April 2013	**2,900,000**
Miguel's - Sub-Slab Port B	April 2011	**840,000**
	February 2012	**6,100**
	April 2013	**17,000**
Miguel's - Sub-Slab Port C	April 2011	**420,000**
	February 2012	**400,000**
	April 2013	**100,000**
Miguel's - Kitchen (indoor air)	April 2011	**250 E**
	February 2012	**280 J**
	April 2013	**260**
Miguel's - Office (indoor air)	April 2011	**1,600**[a]
	February 2012	**940**
	April 2013	**470**
Bamboo Panda - Crawlspace	April 2011	**2,000**
	February 2012	**3,600**
	April 2013	1,400
Bamboo Panda - Indoor Air	February 2012	**730 J**
	April 2013	**210**
Fairbanks Fast Foto - Crawlspace	April 2013	620
Fairbanks Fast Foto - Indoor Air	February 2012	25
	April 2013	**260**

Notes:

Highest of duplicate values reported
Date listed for indoor air samples is date of sample retreival
ADEC Shallow Soil Gas (applies to sub-slab and crawlspace samples) for PCE is 1,800 µg/m^3
ADEC Indoor-Air Target Level for PCE is 180 µg/m^3

[a] Miguel's had not yet expanded into this unit at the time of the April 2011 sampling. The unit was closed off and was undergoing renovation.
E result was above laboratory calibration range
J result is considered estimated due to QC anomalies; see original QC checklists for details
bold result is above ADEC Target Level

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4/22/2013
Mr. Rodney Guritz
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: S.F. Annex VIA
Project #: 31-1-11652-001
Workorder #: 1304184

Dear Mr. Rodney Guritz

The following report includes the data for the above referenced project for sample(s) received on 4/8/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1304184

Work Order Summary

CLIENT:	Mr. Rodney Guritz Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709	**BILL TO:**	Mr. Rodney Guritz Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709
PHONE:	907-479-0600	**P.O. #**	
FAX:	907-479-5691	**PROJECT #**	31-1-11652-001 S.F. Annex VIA
DATE RECEIVED:	04/08/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	04/22/2013		

FRACTION #	NAME	TEST
01A	Miguels_kitchen	Passive S.E. RAD130/SKC
02A	Miguels_office A	Passive S.E. RAD130/SKC
03A	Miguels_office B	Passive S.E. RAD130/SKC
04A	Bamboo_Panda	Passive S.E. RAD130/SKC
05A	FastFoto_office	Passive S.E. RAD130/SKC
06A	Crawlspace_BP	Passive S.E. RAD130/SKC
07A	Crawlspace_FF	Passive S.E. RAD130/SKC
08A	Lab Blank	Passive S.E. RAD130/SKC
09A	LCS	Passive S.E. RAD130/SKC

CERTIFIED BY: Heidi Hayes DATE: 04/22/13

Technical Director

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LABORATORY NARRATIVE
Passive SE GC/MS
Shannon & Wilson, Inc.
Workorder# 1304184

Seven Radiello 130 (Solvent) samples were received on April 08, 2013. The laboratory extracted the charcoal sorbent bed of the passive sampler using carbon disulfide. An aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value.

Receiving Notes

The cartridge for sample Crawlspace_FF was broken. The sample preparation and analysis proceeded as requested by the client.

Analytical Notes

Sample concentrations were calculated using sampling rates provided by the manufacturer.
These sampling rate values already take into account the desorption efficiency with carbon disulfide. As a result, the average concentration over the sampling duration is calculated from the mass of analyte measured and the exposure time without a correction factor. Results were calculated based on 25 deg C without temperature correction.

The actual exposure time was used to calculate sample concentrations and reporting limits. An exposure time of 1452 minutes was used for the Laboratory Blank.

All Quality Control Limit exceedances and affected sample results are noted by flags.

Definition of Data Qualifying Flags

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

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

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

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

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Miguels_kitchen

Lab ID#: 1304184-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	56	380
Acetone	0.20	1.8	0.95	8.5
2-Propanol	0.20	2.6	2.7	36
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.13	1.2
Trichloroethene	0.10	1.0	0.18	1.8
Toluene	0.10	0.93	0.38	3.6
Tetrachloroethene	0.10	1.2	21	240
m,p-Xylene	0.10	0.98	0.18	1.7
1,4-Dichlorobenzene	0.10	1.4	0.71	9.6

Client Sample ID: Miguels_office A

Lab ID#: 1304184-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	46	310
Acetone	0.20	1.8	1.0	9.0
2-Propanol	0.20	2.7	1.6	21
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.11	0.95
Trichloroethene	0.10	1.0	0.26	2.6
Toluene	0.10	0.94	0.40	3.8
Tetrachloroethene	0.10	1.2	33	390
m,p-Xylene	0.10	0.99	0.17	1.6
1,4-Dichlorobenzene	0.10	1.4	0.45	6.1

Client Sample ID: Miguels_office B

Lab ID#: 1304184-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	48	320
Acetone	0.20	1.8	1.0	9.2
2-Propanol	0.20	2.6	1.8	24
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.11	1.0
Trichloroethene	0.10	1.0	0.25	2.5

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Miguels_office B

Lab ID#: 1304184-03A

Toluene	0.10	0.93	0.39	3.6
Tetrachloroethene	0.10	1.2	32	380
m,p-Xylene	0.10	0.98	0.17	1.6
1,4-Dichlorobenzene	0.10	1.4	0.45	6.1

Client Sample ID: Bamboo_Panda

Lab ID#: 1304184-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.3	9.1	160	1100
Acetone	0.20	1.8	2.0	18
2-Propanol	0.20	2.7	4.5	61
Hexane	0.10	1.0	0.17	1.8
Ethyl Acetate	0.40	3.6	0.91	8.2
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.31	2.8
Chloroform	0.10	0.93	0.12	1.1
Benzene	0.40	3.5	0.44	3.9
Heptane	0.10	1.2	0.14	1.6
Trichloroethene	0.10	1.0	0.14	1.4
Toluene	0.10	0.94	0.48	4.6
Tetrachloroethene	0.10	1.2	18	210
m,p-Xylene	0.10	1.0	0.15	1.5

Client Sample ID: FastFoto_office

Lab ID#: 1304184-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	40	270
Acetone	0.20	1.8	7.8	72
2-Propanol	0.80	11	600	8200
Ethyl Acetate	0.40	3.6	0.92	8.4
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	0.38	3.4
Benzene	0.40	3.5	0.43	3.8
Heptane	0.10	1.2	0.32	3.9

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: FastFoto_office

Lab ID#: 1304184-05A

Trichloroethene	0.10	1.0	0.16	1.6
Toluene	0.10	0.96	2.9	28
Tetrachloroethene	0.10	1.2	21	250
Ethyl Benzene	0.10	1.0	0.20	2.1
m,p-Xylene	0.10	1.0	0.45	4.6
o-Xylene	0.10	1.1	0.12	1.4

Client Sample ID: Crawlspace_BP

Lab ID#: 1304184-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	23	160
Acetone	0.20	1.8	1.5	14
2-Propanol	0.20	2.7	11	150
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	0.33	2.9
Trichloroethene	0.10	1.0	0.65	6.7
Toluene	0.10	0.95	0.40	3.8
Tetrachloroethene	0.10	1.2	87	1000
m,p-Xylene	0.10	1.0	0.12	1.2

Client Sample ID: Crawlspace_FF

Lab ID#: 1304184-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.0	3.8	27
Acetone	0.20	1.8	0.94	8.6
2-Propanol	0.20	2.7	12	160
2-Butanone (Methyl Ethyl Ketone)	0.10	0.90	0.20	1.8
Trichloroethene	0.10	1.0	0.19	1.9
Toluene	0.10	0.96	0.45	4.3
Tetrachloroethene	0.10	1.2	28	340
m,p-Xylene	0.10	1.0	0.12	1.3

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Client Sample ID: Miguels_kitchen

Lab ID#: 1304184-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040906sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 10:57 AM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	56	380
Acetone	0.20	1.8	0.95	8.5
2-Propanol	0.20	2.6	2.7	36
Methyl tert-butyl ether	0.10	1.0	Not Detected	Not Detected
Hexane	0.10	1.0	Not Detected	Not Detected
Ethyl Acetate	0.40	3.5	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.13	1.2
Chloroform	0.10	0.92	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.4	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.89	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	0.18	1.8
4-Methyl-2-pentanone	0.20	2.0	Not Detected	Not Detected
Toluene	0.10	0.93	0.38	3.6
Tetrachloroethene	0.10	1.2	21	240
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	0.98	0.18	1.7
o-Xylene	0.10	1.0	Not Detected	Not Detected
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	0.71	9.6
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 77.0F , duration time = 1452 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

eurofins | Air Toxics

Client Sample ID: Miguels_office A

Lab ID#: 1304184-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040907sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 11:21 AM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	46	310
Acetone	0.20	1.8	1.0	9.0
2-Propanol	0.20	2.7	1.6	21
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.0	Not Detected	Not Detected
Ethyl Acetate	0.40	3.5	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.11	0.95
Chloroform	0.10	0.92	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.90	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	0.26	2.6
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.94	0.40	3.8
Tetrachloroethene	0.10	1.2	33	390
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	0.99	0.17	1.6
o-Xylene	0.10	1.1	Not Detected	Not Detected
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	0.45	6.1
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 77.0F , duration time = 1445 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

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Client Sample ID: Miguels_office B

Lab ID#: 1304184-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040908sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 11:44 AM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	48	320
Acetone	0.20	1.8	1.0	9.2
2-Propanol	0.20	2.6	1.8	24
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.0	Not Detected	Not Detected
Ethyl Acetate	0.40	3.5	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.11	1.0
Chloroform	0.10	0.92	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.4	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.90	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	0.25	2.5
4-Methyl-2-pentanone	0.20	2.0	Not Detected	Not Detected
Toluene	0.10	0.93	0.39	3.6
Tetrachloroethene	0.10	1.2	32	380
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	0.98	0.17	1.6
o-Xylene	0.10	1.1	Not Detected	Not Detected
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	0.45	6.1
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 77.0F , duration time = 1450 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

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Client Sample ID: Bamboo_Panda

Lab ID#: 1304184-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040909sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 12:07 PM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.3	9.1	160	1100
Acetone	0.20	1.8	2.0	18
2-Propanol	0.20	2.7	4.5	61
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.0	0.17	1.8
Ethyl Acetate	0.40	3.6	0.91	8.2
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.31	2.8
Chloroform	0.10	0.93	0.12	1.1
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	0.44	3.9
1,2-Dichloroethane	0.10	0.91	Not Detected	Not Detected
Heptane	0.10	1.2	0.14	1.6
Trichloroethene	0.10	1.0	0.14	1.4
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.94	0.48	4.6
Tetrachloroethene	0.10	1.2	18	210
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	1.0	0.15	1.5
o-Xylene	0.10	1.1	Not Detected	Not Detected
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Ethanol was reported from file # 10040918sim analyzed on 4/9/2013 at a dilution factor of 1.33.
Temperature = 77.0F , duration time = 1430 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

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Client Sample ID: FastFoto_office

Lab ID#: 1304184-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040910sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 12:30 PM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	40	270
Acetone	0.20	1.8	7.8	72
2-Propanol	0.80	11	600	8200
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	Not Detected	Not Detected
Ethyl Acetate	0.40	3.6	0.92	8.4
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	0.38	3.4
Chloroform	0.10	0.94	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	0.43	3.8
1,2-Dichloroethane	0.10	0.92	Not Detected	Not Detected
Heptane	0.10	1.2	0.32	3.9
Trichloroethene	0.10	1.0	0.16	1.6
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.96	2.9	28
Tetrachloroethene	0.10	1.2	21	250
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	0.20	2.1
m,p-Xylene	0.10	1.0	0.45	4.6
o-Xylene	0.10	1.1	0.12	1.4
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

2-Propanol was reported from file # 10040919sim analyzed on 4/9/2013 at a dilution factor of 4.00.
Temperature = 77.0F , duration time = 1415 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

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Client Sample ID: Crawlspace_BP

Lab ID#: 1304184-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040911sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 12:53 PM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	23	160
Acetone	0.20	1.8	1.5	14
2-Propanol	0.20	2.7	11	150
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	Not Detected	Not Detected
Ethyl Acetate	0.40	3.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	0.33	2.9
Chloroform	0.10	0.94	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.92	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	0.65	6.7
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	0.40	3.8
Tetrachloroethene	0.10	1.2	87	1000
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	1.0	0.12	1.2
o-Xylene	0.10	1.1	Not Detected	Not Detected
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 77.0F , duration time = 1418 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130

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Client Sample ID: Crawlspace_FF

Lab ID#: 1304184-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040912sim**	**Date of Collection: 4/4/13**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 01:17 PM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	7.0	3.8	27
Acetone	0.20	1.8	0.94	8.6
2-Propanol	0.20	2.7	12	160
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.1	Not Detected	Not Detected
Ethyl Acetate	0.40	3.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.90	0.20	1.8
Chloroform	0.10	0.94	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.5	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.92	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	0.19	1.9
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.96	0.45	4.3
Tetrachloroethene	0.10	1.2	28	340
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	1.0	0.12	1.3
o-Xylene	0.10	1.1	Not Detected	Not Detected
Styrene	0.10	1.2	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 77.0F , duration time = 1410 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1304184-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040905sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 10:33 AM**	
		Date of Extraction: 4/9/13	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	Not Detected	Not Detected
Acetone	0.20	1.8	Not Detected	Not Detected
2-Propanol	0.20	2.6	Not Detected	Not Detected
Methyl tert-butyl ether	0.10	1.0	Not Detected	Not Detected
Hexane	0.10	1.0	Not Detected	Not Detected
Ethyl Acetate	0.40	3.5	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	Not Detected	Not Detected
Chloroform	0.10	0.92	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	Not Detected	Not Detected
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.4	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.89	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.0	Not Detected	Not Detected
Toluene	0.10	0.93	Not Detected	Not Detected
Tetrachloroethene	0.10	1.2	Not Detected	Not Detected
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	Not Detected	Not Detected
m,p-Xylene	0.10	0.98	Not Detected	Not Detected
o-Xylene	0.10	1.0	Not Detected	Not Detected
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.2	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.4	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Assume Temperature = 77.0F , assume duration time = 1452 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130

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Client Sample ID: LCS

Lab ID#: 1304184-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**10040903sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/9/13 09:46 AM**	
		Date of Extraction: 4/9/13	

Compound	%Recovery
Ethanol	50
Acetone	89
2-Propanol	195 Q
Methyl tert-butyl ether	94
Hexane	124
Ethyl Acetate	98
2-Butanone (Methyl Ethyl Ketone)	94
Chloroform	83
1,1,1-Trichloroethane	109
Cyclohexane	102
Carbon Tetrachloride	116
Benzene	115
1,2-Dichloroethane	98
Heptane	124
Trichloroethene	117
4-Methyl-2-pentanone	110
Toluene	110
Tetrachloroethene	109
Chlorobenzene	93
Ethyl Benzene	114
m,p-Xylene	109
o-Xylene	99
Styrene	62
Propylbenzene	103
1,4-Dichlorobenzene	80
Naphthalene	7.2

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130

PASSIVE SAMPLE COLLECTION

@Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
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Project Manager: Rodney Guritz
Collected by: (Print and Sign) Rodney Guritz
Company: Shannon & Wilson Email: rdg@shanwil.com
Address: 2355 Hill Rd. City: Fairbanks State: AK Zip: 99709
Phone: 9074583147 Fax:

Project Info:
P.O. #:
Project #: 31-1-11652-001
Project Name: S.F. Annex VIA

Turn Around Time: ☑ Normal ☐ Rush ____ specify

Reporting Units: ☐ ppmv ☐ ppbv ☐ µg/m3 ☐ mg/m3

Lab I.D.	Field Sample I.D. (Location)	Sampler #	Date of Deployment (mm/dd/yy)	Time of Deployment (hr : min)	Date of Retrieval (mm/dd/yy)	Time of Retrieval (hr : min)	Analysis Requested	Indoor Air	Outdoor Air	Workplace Monitoring	Other (Crawlspace)
01A	Miguels_kitchen	X1357	4/3/13	10:20	4/4/13	10:32	VOC	☑	☐	☐	☐
02A	Miguels_office A	X1358	↓	10:35	↓	10:40	↓	☑	☐	☐	☐
03A	Miguels_office B	X1359	↓	10:25	↓	10:35	↓	☑	☐	☐	☐
04A	Bamboo_Panda	X1360	↓	11:00	↓	10:50	↓	☑	☐	☐	☐
05A	Fastfoto_office	X1363	↓	11:40	↓	11:15	↓	☑	☐	☐	☐
06A	Crawlspace_BP	X1361	↓	11:20	↓	10:58	↓	☐	☐	☐	☑
07A	Crawlspace_FF	X1362	↓	11:30	↓	11:00	↓	☐	☐	☐	☑
								☐	☐	☐	☐
								☐	☐	☐	☐
								☐	☐	☐	☐

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Rodney Guritz	4/4/13 16:00	Brian Suttelen AK	4/8/13 0920
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Sample Site Air Temperature:

Notes:
See custom VOC list

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fedex		N/A	Good 4/8/13 BW	Yes No None	1304184

Laboratory Data Review Checklist For Air Samples

Completed by:	Rodney Guritz
Title:	Environmental Chemist
Date:	April 30, 2013
CS Report Name:	Shopper's Forum Annex - April Air Sampling Results
Report Date:	April 22, 2013 (lab report)
Consultant Firm:	Shannon & Wilson, Inc.
Laboratory Name:	Air Toxics Ltd.
Laboratory Report Number:	1304184
ADEC File Number:	102.38.100
ADEC Hazard ID:	

1. Laboratory

   a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

   ● Yes ● No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

   ● Yes ● No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ● Yes ● No Comments:

b. Correct analyses requested?

● Yes ● No Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented–Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

● Yes ● No Comments:

Samples were collected using Radiello 130 samplers

b. If there were any discrepancies, were they documented? For example, incorrect sample containers, sample holding times outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

The glass cartridge for sample Crawlspace_FF was broken; we consider the results for this sample estimated, biased low.

● Yes ● No Comments:

c. Data quality or usability affected? Explain.

Comments:

Data quality and usability affected as noted above.

4. Case Narrative

a. Present and understandable?

● Yes ● No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

● Yes ● No Comments:

N/A; there were no QC failures.

c. Were all corrective actions documented?

● Yes ● No Comments:

N/A; no corrective action was required/performed.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

● Yes ● No Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

● Yes ● No Comments:

c. Is the data reported in micrograms per meter cube volume (µg/m^3)?

● Yes ● No Comments:

d. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

PQLs were compared to ADEC target levels for the following target analytes for the project: PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride. Only PCE and TCE are reported for Radiello 130 samplers; the PQLs were below target levels for these analytes.

● Yes ● No Comments:

e. Data quality or usability affected? Explain.

Comments:

Data quality and usability was not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

● Yes ● No Comments:

ii. All method blank results less than PQL?

● Yes ● No Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

● Yes ● No Comments:

v. Data quality or usability affected? Please Explain.

Comments:

No analytes were detected in the method blank; data quality and usability were unaffected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

● Yes ● No Comments:

Duplicate QC samples were not analyzed, consistent with laboratory method for Radiello analysis.

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

N/A; see above.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

● Yes ● No Comments:

N/A

vi. Data quality or usability affected? Explain.

Comments:

Data quality and usability were unaffected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – QC and laboratory samples?

● Yes ● No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

N/A

● Yes ● No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality and usability were unaffected.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 soil gas or indoor air samples?

● Yes ● No Comments:

ii. Submitted blind to lab?

● Yes ● No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

● Yes ● No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality and usability were not affected.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

● Yes ● No Comments:

N/A

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4/22/2013
Mr. Rodney Guritz
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: S.F. Annex VIA
Project #: 31-1-11652-001
Workorder #: 1304197A

Dear Mr. Rodney Guritz

The following report includes the data for the above referenced project for sample(s) received on 4/8/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1304197A

Work Order Summary

CLIENT:	Mr. Rodney Guritz Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709	**BILL TO:**	Mr. Rodney Guritz Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709
PHONE:	907-479-0600	**P.O. #**	
FAX:	907-479-5691	**PROJECT #**	31-1-11652-001 S.F. Annex VIA
DATE RECEIVED:	04/08/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	04/22/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
04A	Miguels_kitchen	Modified TO-15 SIM	5.7 "Hg	5 psi
05A	Miguels_office A	Modified TO-15 SIM	4.7 "Hg	4.6 psi
06A	Miguels_office B	Modified TO-15 SIM	6.7 "Hg	5.3 psi
07A	Bamboo_Panda	Modified TO-15 SIM	6.7 "Hg	4.9 psi
08A	FastFoto_office	Modified TO-15 SIM	7.1 "Hg	5 psi
09A	Crawlspace_BP	Modified TO-15 SIM	4.9 "Hg	5.2 psi
10A	Crawlspace_FF	Modified TO-15 SIM	3.7 "Hg	5.3 psi
11A	Lab Blank	Modified TO-15 SIM	NA	NA
12A	CCV	Modified TO-15 SIM	NA	NA
13A	LCS	Modified TO-15 SIM	NA	NA
13AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 04/22/13

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 SIM
Shannon & Wilson, Inc.
Workorder# 1304197A

Seven 6 Liter Summa Canister (SIM Certified) samples were received on April 08, 2013. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition 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.

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

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on samples Miguels_kitchen, Miguels_office A, Miguels_office B, Crawlspace_BP, and Crawlspace_FF due to the presence of high level target species.

Dilution was performed on samples Bamboo_Panda and Fastfoto_office due to the presence of high level target and 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, LOD, or MDL value. See data page for project specific U-flag definition.

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 EPA METHOD TO-15 GC/MS SIM

Client Sample ID: Miguels_kitchen

Lab ID#: 1304197A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.066	0.66	0.26	2.6
Benzene	0.17	0.44	0.53	1.4
Trichloroethene	0.066	0.32	0.36	1.7
Toluene	0.066	1.0	0.25	3.8
Tetrachloroethene	0.066	39	0.45	260
Ethyl Benzene	0.066	0.15	0.29	0.65
m,p-Xylene	0.13	0.46	0.58	2.0
o-Xylene	0.066	0.18	0.29	0.76

Client Sample ID: Miguels_office A

Lab ID#: 1304197A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.10	0.88	0.41	3.5
Benzene	0.26	0.39	0.83	1.2
Trichloroethene	0.10	0.45	0.56	2.4
Toluene	0.10	1.1	0.39	4.1
Tetrachloroethene	0.10	63	0.70	430
Ethyl Benzene	0.10	0.16	0.45	0.69
m,p-Xylene	0.21	0.46	0.90	2.0
o-Xylene	0.10	0.23	0.45	1.0

Client Sample ID: Miguels_office B

Lab ID#: 1304197A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.11	0.90	0.43	3.6
Benzene	0.27	0.44	0.87	1.4
Trichloroethene	0.11	0.50	0.59	2.7
Toluene	0.11	1.2	0.41	4.5
Tetrachloroethene	0.11	69	0.74	470
Ethyl Benzene	0.11	0.16	0.48	0.72
m,p-Xylene	0.22	0.49	0.95	2.1

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

Client Sample ID: Miguels_office B

Lab ID#: 1304197A-06A

o-Xylene	0.11	0.21	0.48	0.91

Client Sample ID: Bamboo_Panda

Lab ID#: 1304197A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.069	0.28	0.27	1.1
Benzene	0.17	0.84	0.55	2.7
Trichloroethene	0.069	0.21	0.37	1.1
Toluene	0.069	1.0	0.26	3.8
Tetrachloroethene	0.069	29	0.47	200
Ethyl Benzene	0.069	0.10	0.30	0.45
m,p-Xylene	0.14	0.20	0.60	0.86
o-Xylene	0.069	0.12	0.30	0.54

Client Sample ID: FastFoto_office

Lab ID#: 1304197A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.070	0.24	0.28	0.94
Benzene	0.18	0.87	0.56	2.8
1,2-Dichloroethane	0.070	0.13	0.28	0.52
Trichloroethene	0.070	0.30	0.38	1.6
Toluene	0.070	8.8	0.26	33
Tetrachloroethene	0.070	39	0.48	260
Ethyl Benzene	0.070	0.52	0.30	2.2
m,p-Xylene	0.14	1.3	0.61	5.6
o-Xylene	0.070	0.40	0.30	1.8

Client Sample ID: Crawlspace_BP

Lab ID#: 1304197A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.32	1.3	1.3	5.2

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

Client Sample ID: Crawlspace_BP

Lab ID#: 1304197A-09A

Trichloroethene	0.32	1.3	1.7	7.1
Toluene	0.32	1.4	1.2	5.2
Tetrachloroethene	0.32	200	2.2	1400

Client Sample ID: Crawlspace_FF

Lab ID#: 1304197A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
cis-1,2-Dichloroethene	0.16	0.54	0.62	2.1
Benzene	0.39	0.52	1.2	1.6
Trichloroethene	0.16	0.57	0.83	3.1
Toluene	0.16	2.2	0.58	8.1
Tetrachloroethene	0.16	92	1.0	620
Ethyl Benzene	0.16	0.18	0.67	0.77
m,p-Xylene	0.31	0.46	1.3	2.0

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Client Sample ID: Miguels_kitchen

Lab ID#: 1304197A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041212sim**	**Date of Collection: 4/4/13 10:20:00 AM**	
Dil. Factor:	**3.32**	**Date of Analysis: 4/13/13 10:36 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.033	Not Detected	0.085	Not Detected
1,1-Dichloroethene	0.033	Not Detected	0.13	Not Detected
1,1-Dichloroethane	0.066	Not Detected	0.27	Not Detected
cis-1,2-Dichloroethene	0.066	0.66	0.26	2.6
1,1,1-Trichloroethane	0.066	Not Detected	0.36	Not Detected
Benzene	0.17	0.44	0.53	1.4
1,2-Dichloroethane	0.066	Not Detected	0.27	Not Detected
Trichloroethene	0.066	0.32	0.36	1.7
Toluene	0.066	1.0	0.25	3.8
1,1,2-Trichloroethane	0.066	Not Detected	0.36	Not Detected
Tetrachloroethene	0.066	39	0.45	260
Ethyl Benzene	0.066	0.15	0.29	0.65
m,p-Xylene	0.13	0.46	0.58	2.0
o-Xylene	0.066	0.18	0.29	0.76
1,1,2,2-Tetrachloroethane	0.066	Not Detected	0.46	Not Detected
trans-1,2-Dichloroethene	0.33	Not Detected	1.3	Not Detected
Methyl tert-butyl ether	0.33	Not Detected	1.2	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: Miguels_office A

Lab ID#: 1304197A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041213sim**	**Date of Collection: 4/4/13 10:35:00 AM**	
Dil. Factor:	**5.20**	**Date of Analysis: 4/13/13 11:13 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.052	Not Detected	0.13	Not Detected
1,1-Dichloroethene	0.052	Not Detected	0.21	Not Detected
1,1-Dichloroethane	0.10	Not Detected	0.42	Not Detected
cis-1,2-Dichloroethene	0.10	0.88	0.41	3.5
1,1,1-Trichloroethane	0.10	Not Detected	0.57	Not Detected
Benzene	0.26	0.39	0.83	1.2
1,2-Dichloroethane	0.10	Not Detected	0.42	Not Detected
Trichloroethene	0.10	0.45	0.56	2.4
Toluene	0.10	1.1	0.39	4.1
1,1,2-Trichloroethane	0.10	Not Detected	0.57	Not Detected
Tetrachloroethene	0.10	63	0.70	430
Ethyl Benzene	0.10	0.16	0.45	0.69
m,p-Xylene	0.21	0.46	0.90	2.0
o-Xylene	0.10	0.23	0.45	1.0
1,1,2,2-Tetrachloroethane	0.10	Not Detected	0.71	Not Detected
trans-1,2-Dichloroethene	0.52	Not Detected	2.1	Not Detected
Methyl tert-butyl ether	0.52	Not Detected	1.9	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Miguels_office B

Lab ID#: 1304197A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041214sim**	**Date of Collection: 4/4/13 10:25:00 AM**	
Dil. Factor:	**5.47**	**Date of Analysis: 4/13/13 12:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.055	Not Detected	0.14	Not Detected
1,1-Dichloroethene	0.055	Not Detected	0.22	Not Detected
1,1-Dichloroethane	0.11	Not Detected	0.44	Not Detected
cis-1,2-Dichloroethene	0.11	0.90	0.43	3.6
1,1,1-Trichloroethane	0.11	Not Detected	0.60	Not Detected
Benzene	0.27	0.44	0.87	1.4
1,2-Dichloroethane	0.11	Not Detected	0.44	Not Detected
Trichloroethene	0.11	0.50	0.59	2.7
Toluene	0.11	1.2	0.41	4.5
1,1,2-Trichloroethane	0.11	Not Detected	0.60	Not Detected
Tetrachloroethene	0.11	69	0.74	470
Ethyl Benzene	0.11	0.16	0.48	0.72
m,p-Xylene	0.22	0.49	0.95	2.1
o-Xylene	0.11	0.21	0.48	0.91
1,1,2,2-Tetrachloroethane	0.11	Not Detected	0.75	Not Detected
trans-1,2-Dichloroethene	0.55	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.55	Not Detected	2.0	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

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

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Client Sample ID: Bamboo_Panda

Lab ID#: 1304197A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041215sim**	**Date of Collection:**	**4/4/13 11:00:00 AM**
Dil. Factor:	**3.44**	**Date of Analysis:**	**4/13/13 12:53 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.034	Not Detected	0.088	Not Detected
1,1-Dichloroethene	0.034	Not Detected	0.14	Not Detected
1,1-Dichloroethane	0.069	Not Detected	0.28	Not Detected
cis-1,2-Dichloroethene	0.069	0.28	0.27	1.1
1,1,1-Trichloroethane	0.069	Not Detected	0.38	Not Detected
Benzene	0.17	0.84	0.55	2.7
1,2-Dichloroethane	0.069	Not Detected	0.28	Not Detected
Trichloroethene	0.069	0.21	0.37	1.1
Toluene	0.069	1.0	0.26	3.8
1,1,2-Trichloroethane	0.069	Not Detected	0.38	Not Detected
Tetrachloroethene	0.069	29	0.47	200
Ethyl Benzene	0.069	0.10	0.30	0.45
m,p-Xylene	0.14	0.20	0.60	0.86
o-Xylene	0.069	0.12	0.30	0.54
1,1,2,2-Tetrachloroethane	0.069	Not Detected	0.47	Not Detected
trans-1,2-Dichloroethene	0.34	Not Detected	1.4	Not Detected
Methyl tert-butyl ether	0.34	Not Detected	1.2	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	94	70-130

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Client Sample ID: FastFoto_office

Lab ID#: 1304197A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041216sim**	**Date of Collection:**	**4/4/13 11:40:00 AM**
Dil. Factor:	**3.52**	**Date of Analysis:**	**4/13/13 01:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.035	Not Detected	0.090	Not Detected
1,1-Dichloroethene	0.035	Not Detected	0.14	Not Detected
1,1-Dichloroethane	0.070	Not Detected	0.28	Not Detected
cis-1,2-Dichloroethene	0.070	0.24	0.28	0.94
1,1,1-Trichloroethane	0.070	Not Detected	0.38	Not Detected
Benzene	0.18	0.87	0.56	2.8
1,2-Dichloroethane	0.070	0.13	0.28	0.52
Trichloroethene	0.070	0.30	0.38	1.6
Toluene	0.070	8.8	0.26	33
1,1,2-Trichloroethane	0.070	Not Detected	0.38	Not Detected
Tetrachloroethene	0.070	39	0.48	260
Ethyl Benzene	0.070	0.52	0.30	2.2
m,p-Xylene	0.14	1.3	0.61	5.6
o-Xylene	0.070	0.40	0.30	1.8
1,1,2,2-Tetrachloroethane	0.070	Not Detected	0.48	Not Detected
trans-1,2-Dichloroethene	0.35	Not Detected	1.4	Not Detected
Methyl tert-butyl ether	0.35	Not Detected	1.3	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Crawlspace_BP

Lab ID#: 1304197A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041217sim**	**Date of Collection:**	**4/4/13 11:20:00 AM**
Dil. Factor:	**16.2**	**Date of Analysis:**	**4/13/13 02:12 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
1,1-Dichloroethene	0.16	Not Detected	0.64	Not Detected
1,1-Dichloroethane	0.32	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.32	1.3	1.3	5.2
1,1,1-Trichloroethane	0.32	Not Detected	1.8	Not Detected
Benzene	0.81	Not Detected	2.6	Not Detected
1,2-Dichloroethane	0.32	Not Detected	1.3	Not Detected
Trichloroethene	0.32	1.3	1.7	7.1
Toluene	0.32	1.4	1.2	5.2
1,1,2-Trichloroethane	0.32	Not Detected	1.8	Not Detected
Tetrachloroethene	0.32	200	2.2	1400
Ethyl Benzene	0.32	Not Detected	1.4	Not Detected
m,p-Xylene	0.65	Not Detected	2.8	Not Detected
o-Xylene	0.32	Not Detected	1.4	Not Detected
1,1,2,2-Tetrachloroethane	0.32	Not Detected	2.2	Not Detected
trans-1,2-Dichloroethene	1.6	Not Detected	6.4	Not Detected
Methyl tert-butyl ether	1.6	Not Detected	5.8	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Crawlspace_FF

Lab ID#: 1304197A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041218sim**	**Date of Collection:**	**4/4/13 11:30:00 AM**
Dil. Factor:	**7.76**	**Date of Analysis:**	**4/13/13 02:47 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.078	Not Detected	0.20	Not Detected
1,1-Dichloroethene	0.078	Not Detected	0.31	Not Detected
1,1-Dichloroethane	0.16	Not Detected	0.63	Not Detected
cis-1,2-Dichloroethene	0.16	0.54	0.62	2.1
1,1,1-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Benzene	0.39	0.52	1.2	1.6
1,2-Dichloroethane	0.16	Not Detected	0.63	Not Detected
Trichloroethene	0.16	0.57	0.83	3.1
Toluene	0.16	2.2	0.58	8.1
1,1,2-Trichloroethane	0.16	Not Detected	0.85	Not Detected
Tetrachloroethene	0.16	92	1.0	620
Ethyl Benzene	0.16	0.18	0.67	0.77
m,p-Xylene	0.31	0.46	1.3	2.0
o-Xylene	0.16	Not Detected	0.67	Not Detected
1,1,2,2-Tetrachloroethane	0.16	Not Detected	1.1	Not Detected
trans-1,2-Dichloroethene	0.78	Not Detected	3.1	Not Detected
Methyl tert-butyl ether	0.78	Not Detected	2.8	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1304197A-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041206sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/12/13 10:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.010	Not Detected	0.026	Not Detected
1,1-Dichloroethene	0.010	Not Detected	0.040	Not Detected
1,1-Dichloroethane	0.020	Not Detected	0.081	Not Detected
cis-1,2-Dichloroethene	0.020	Not Detected	0.079	Not Detected
1,1,1-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Benzene	0.050	Not Detected	0.16	Not Detected
1,2-Dichloroethane	0.020	Not Detected	0.081	Not Detected
Trichloroethene	0.020	Not Detected	0.11	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
1,1,2-Trichloroethane	0.020	Not Detected	0.11	Not Detected
Tetrachloroethene	0.020	Not Detected	0.14	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
1,1,2,2-Tetrachloroethane	0.020	Not Detected	0.14	Not Detected
trans-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: CCV

Lab ID#: 1304197A-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041202sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/12/13 06:58 PM**	

Compound	%Recovery
Vinyl Chloride	94
1,1-Dichloroethene	99
1,1-Dichloroethane	104
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	90
Benzene	97
1,2-Dichloroethane	91
Trichloroethene	96
Toluene	101
1,1,2-Trichloroethane	106
Tetrachloroethene	100
Ethyl Benzene	105
m,p-Xylene	109
o-Xylene	108
1,1,2,2-Tetrachloroethane	88
trans-1,2-Dichloroethene	100
Methyl tert-butyl ether	105

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	87	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: LCS

Lab ID#: 1304197A-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041203sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/12/13 07:35 PM**	

Compound	%Recovery
Vinyl Chloride	95
1,1-Dichloroethene	106
1,1-Dichloroethane	105
cis-1,2-Dichloroethene	102
1,1,1-Trichloroethane	92
Benzene	96
1,2-Dichloroethane	91
Trichloroethene	92
Toluene	94
1,1,2-Trichloroethane	104
Tetrachloroethene	98
Ethyl Benzene	104
m,p-Xylene	111
o-Xylene	109
1,1,2,2-Tetrachloroethane	87
trans-1,2-Dichloroethene	114
Methyl tert-butyl ether	107

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 1304197A-13AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	**a041204sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/12/13 08:19 PM**	

Compound	%Recovery
Vinyl Chloride	92
1,1-Dichloroethene	105
1,1-Dichloroethane	104
cis-1,2-Dichloroethene	103
1,1,1-Trichloroethane	91
Benzene	100
1,2-Dichloroethane	91
Trichloroethene	98
Toluene	100
1,1,2-Trichloroethane	106
Tetrachloroethene	97
Ethyl Benzene	106
m,p-Xylene	110
o-Xylene	106
1,1,2,2-Tetrachloroethane	96
trans-1,2-Dichloroethene	114
Methyl tert-butyl ether	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	87	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	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 Rodney Gurtz
Collected by: (Print and Sign) Rodney Gurtz
Company S&W Inc. Email rdg@shanwil.com
Address 2355 Hill Rd. City Fairbanks State AK Zip 99709
Phone 907-458-3147 Fax

Project Info:
P.O. #
Project # 31-1-11652-001
Project Name S.F. Annex VIA

Turn Around Time:
☑ Normal
☐ Rush
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)	
01A	SubSlab A	21029	4/3/13	09:47	TO-15	-30.0	-6.5			
02A	SubSlab B	37687	4/4/13	09:14	↓	-28.0	-4.0			
03A	SubSlab C	34171	4/3/13	09:05	↓	-28.0	-5.0			
04A	Miguels_kitchen	33981	4/3-4/4/13	10:20	TO-15 SIM	<-30.0	-8.0			04A
05A	Miguels_office A	14869		10:35		<-30.0	-7.0			05A
06A	Miguels_office B	34245		10:25		<-30.0	-9.0			06A
07A	Bamboo_Panda	5562		11:00		<-30.0	-9.5			07A
08A	Fast Foto_office	34021		11:40		<-30.0	-9.5			08A
09A	Crawlspace_BP	10770		11:20		-29.0	-8.0			09A
10A	Crawlspace_FF	5735		11:30		<-30.0	-7.0			10A

E160410 CAS

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Rodney Gurtz	4/4/13 1600	[signature] ATL	0920 4/8/13
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Custom analyte list

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEX		NA	good	Yes No None	1304197

Form 1293 rev.11

Laboratory Data Review Checklist For Air Samples

Completed by:	Rodney Guritz
Title:	Environmental Chemist
Date:	April 30, 2013
CS Report Name:	Shopper's Forum Annex - April Air Sampling Results
Report Date:	April 22, 2013 (lab report)
Consultant Firm:	Shannon & Wilson, Inc.
Laboratory Name:	Air Toxics Ltd.
Laboratory Report Number:	1304197A
ADEC File Number:	102.38.100
ADEC Hazard ID:	

1. Laboratory

   a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

   ● Yes ● No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

   ● Yes ● No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ● Yes ● No Comments:

b. Correct analyses requested?

● Yes ● No Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented–Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

● Yes ● No Comments:

b. If there were any discrepancies, were they documented? For example, incorrect sample containers, sample holding times outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

N/A; there were no sample-receiving discrepancies.

● Yes ● No Comments:

c. Data quality or usability affected? Explain.

Comments:

Data quality and usability were not affected.

4. Case Narrative

a. Present and understandable?

● Yes ● No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

● Yes ● No Comments:

N/A; there were no QC failures. The lab noted that several samples were diluted.

c. Were all corrective actions documented?

● Yes ● No Comments:

N/A; no corrective action was required/performed.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

● Yes ● No Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

● Yes ● No Comments:

c. Is the data reported in micrograms per meter cube volume (µg/m^3)?

● Yes ● No Comments:

d. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

PQLs were compared to ADEC target levels for the following target analytes for the project: PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride. The PQLs were below target levels for these analytes.

● Yes ● No Comments:

e. Data quality or usability affected? Explain.

Comments:

Data quality and usability was not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

● Yes ● No Comments:

ii. All method blank results less than PQL?

● Yes ● No Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

● Yes ● No Comments:

v. Data quality or usability affected? Please Explain.

Comments:

No analytes were detected in the method blank; data quality and usability were unaffected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

● Yes ● No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

The lab did not report any RPD failures.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

● Yes ● No Comments:

N/A

vi. Data quality or usability affected? Explain.

Comments:

Data quality and usability were unaffected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – QC and laboratory samples?

● Yes ● No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

N/A

● Yes ● No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality and usability were unaffected.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 soil gas or indoor air samples?

● Yes ● No Comments:

ii. Submitted blind to lab?

● Yes ● No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

● Yes ● No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality and usability were not affected.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

● Yes ● No Comments:

N/A

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4/23/2013
Mr. Rodney Guritz
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: S.F. Annex VIA
Project #: 31-1-11652-001
Workorder #: 1304197B

Dear Mr. Rodney Guritz

The following report includes the data for the above referenced project for sample(s) received on 4/8/2013 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1304197B

Work Order Summary

CLIENT:	Mr. Rodney Guritz Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709	**BILL TO:**	Mr. Rodney Guritz Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, AK 99709
PHONE:	907-479-0600	**P.O. #**	
FAX:	907-479-5691	**PROJECT #**	31-1-11652-001 S.F. Annex VIA
DATE RECEIVED:	04/08/2013	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	04/23/2013		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SubSlabA	Modified TO-15	4.7 "Hg	14.8 psi
02A	SubSlabB	Modified TO-15	3.3 "Hg	15.1 psi
03A	SubSlabC	Modified TO-15	0.4 "Hg	15.1 psi
04A	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 04/23/13

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NY NELAP - 11291,
TX NELAP - T104704434-12-4, UT NELAP CA009332012-3, WA NELAP - C935
Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013.
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
Shannon & Wilson, Inc.
Workorder# 1304197B

Three 1 Liter Summa Canister samples were received on April 08, 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

There were no receiving discrepancies.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds. Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

Dilution was performed on samples SubSlabA, SubSlabB and SubSlabC 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, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: SubSlabA

Lab ID#: 1304197B-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	2000	3400	11000	18000
Tetrachloroethene	2000	420000	13000	2900000
Isobutylene	7900	9600	18000	22000

Client Sample ID: SubSlabB

Lab ID#: 1304197B-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	11	160	64	910
Ethanol	45	61	86	120
2-Propanol	45	58	110	140
Carbon Disulfide	45	48	140	150
trans-1,2-Dichloroethene	11	31	45	120
cis-1,2-Dichloroethene	11	91	45	360
Trichloroethene	11	190	61	1000
Toluene	11	14	43	53
Tetrachloroethene	11	2600	77	17000
Isobutylene	45	610	100	1400

Client Sample ID: SubSlabC

Lab ID#: 1304197B-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	52	61	290	340
trans-1,2-Dichloroethene	52	400	200	1600
cis-1,2-Dichloroethene	52	3200	200	13000
Trichloroethene	52	670	280	3600
Toluene	52	58	190	220
Tetrachloroethene	52	16000	350	100000
Isobutylene	210	380	470	870

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Client Sample ID: SubSlabA

Lab ID#: 1304197B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042018**	**Date of Collection:**	**4/3/13 9:47:00 AM**
Dil. Factor:	**3970**	**Date of Analysis:**	**4/20/13 07:10 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2000	Not Detected	9800	Not Detected
Freon 114	2000	Not Detected	14000	Not Detected
Chloromethane	20000	Not Detected	41000	Not Detected
Vinyl Chloride	2000	Not Detected	5100	Not Detected
1,3-Butadiene	2000	Not Detected	4400	Not Detected
Bromomethane	20000	Not Detected	77000	Not Detected
Chloroethane	7900	Not Detected	21000	Not Detected
Freon 11	2000	Not Detected	11000	Not Detected
Ethanol	7900	Not Detected	15000	Not Detected
Freon 113	2000	Not Detected	15000	Not Detected
1,1-Dichloroethene	2000	Not Detected	7900	Not Detected
Acetone	20000	Not Detected	47000	Not Detected
2-Propanol	7900	Not Detected	20000	Not Detected
Carbon Disulfide	7900	Not Detected	25000	Not Detected
3-Chloropropene	7900	Not Detected	25000	Not Detected
Methylene Chloride	20000	Not Detected	69000	Not Detected
Methyl tert-butyl ether	2000	Not Detected	7200	Not Detected
trans-1,2-Dichloroethene	2000	Not Detected	7900	Not Detected
Hexane	2000	Not Detected	7000	Not Detected
1,1-Dichloroethane	2000	Not Detected	8000	Not Detected
2-Butanone (Methyl Ethyl Ketone)	7900	Not Detected	23000	Not Detected
cis-1,2-Dichloroethene	2000	Not Detected	7900	Not Detected
Tetrahydrofuran	2000	Not Detected	5800	Not Detected
Chloroform	2000	Not Detected	9700	Not Detected
1,1,1-Trichloroethane	2000	Not Detected	11000	Not Detected
Cyclohexane	2000	Not Detected	6800	Not Detected
Carbon Tetrachloride	2000	Not Detected	12000	Not Detected
2,2,4-Trimethylpentane	2000	Not Detected	9300	Not Detected
Benzene	2000	Not Detected	6300	Not Detected
1,2-Dichloroethane	2000	Not Detected	8000	Not Detected
Heptane	2000	Not Detected	8100	Not Detected
Trichloroethene	2000	3400	11000	18000
1,2-Dichloropropane	2000	Not Detected	9200	Not Detected
1,4-Dioxane	7900	Not Detected	29000	Not Detected
Bromodichloromethane	2000	Not Detected	13000	Not Detected
cis-1,3-Dichloropropene	2000	Not Detected	9000	Not Detected
4-Methyl-2-pentanone	2000	Not Detected	8100	Not Detected
Toluene	2000	Not Detected	7500	Not Detected
trans-1,3-Dichloropropene	2000	Not Detected	9000	Not Detected
1,1,2-Trichloroethane	2000	Not Detected	11000	Not Detected
Tetrachloroethene	2000	420000	13000	2900000
2-Hexanone	7900	Not Detected	32000	Not Detected

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Client Sample ID: SubSlabA

Lab ID#: 1304197B-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042018**	**Date of Collection: 4/3/13 9:47:00 AM**	
Dil. Factor:	**3970**	**Date of Analysis: 4/20/13 07:10 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2000	Not Detected	17000	Not Detected
1,2-Dibromoethane (EDB)	2000	Not Detected	15000	Not Detected
Chlorobenzene	2000	Not Detected	9100	Not Detected
Ethyl Benzene	2000	Not Detected	8600	Not Detected
m,p-Xylene	2000	Not Detected	8600	Not Detected
o-Xylene	2000	Not Detected	8600	Not Detected
Styrene	2000	Not Detected	8400	Not Detected
Bromoform	2000	Not Detected	20000	Not Detected
Cumene	2000	Not Detected	9800	Not Detected
1,1,2,2-Tetrachloroethane	2000	Not Detected	14000	Not Detected
Propylbenzene	2000	Not Detected	9800	Not Detected
4-Ethyltoluene	2000	Not Detected	9800	Not Detected
1,3,5-Trimethylbenzene	2000	Not Detected	9800	Not Detected
1,2,4-Trimethylbenzene	2000	Not Detected	9800	Not Detected
1,3-Dichlorobenzene	2000	Not Detected	12000	Not Detected
1,4-Dichlorobenzene	2000	Not Detected	12000	Not Detected
alpha-Chlorotoluene	2000	Not Detected	10000	Not Detected
1,2-Dichlorobenzene	2000	Not Detected	12000	Not Detected
1,2,4-Trichlorobenzene	7900	Not Detected	59000	Not Detected
Hexachlorobutadiene	7900	Not Detected	85000	Not Detected
Isobutylene	7900	9600	18000	22000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	91	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: SubSlabB

Lab ID#: 1304197B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042020**	**Date of Collection:**	**4/4/13 9:14:00 AM**
Dil. Factor:	**22.7**	**Date of Analysis:**	**4/20/13 08:17 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	11	Not Detected	56	Not Detected
Freon 114	11	Not Detected	79	Not Detected
Chloromethane	110	Not Detected	230	Not Detected
Vinyl Chloride	11	Not Detected	29	Not Detected
1,3-Butadiene	11	Not Detected	25	Not Detected
Bromomethane	110	Not Detected	440	Not Detected
Chloroethane	45	Not Detected	120	Not Detected
Freon 11	11	160	64	910
Ethanol	45	61	86	120
Freon 113	11	Not Detected	87	Not Detected
1,1-Dichloroethene	11	Not Detected	45	Not Detected
Acetone	110	Not Detected	270	Not Detected
2-Propanol	45	58	110	140
Carbon Disulfide	45	48	140	150
3-Chloropropene	45	Not Detected	140	Not Detected
Methylene Chloride	110	Not Detected	390	Not Detected
Methyl tert-butyl ether	11	Not Detected	41	Not Detected
trans-1,2-Dichloroethene	11	31	45	120
Hexane	11	Not Detected	40	Not Detected
1,1-Dichloroethane	11	Not Detected	46	Not Detected
2-Butanone (Methyl Ethyl Ketone)	45	Not Detected	130	Not Detected
cis-1,2-Dichloroethene	11	91	45	360
Tetrahydrofuran	11	Not Detected	33	Not Detected
Chloroform	11	Not Detected	55	Not Detected
1,1,1-Trichloroethane	11	Not Detected	62	Not Detected
Cyclohexane	11	Not Detected	39	Not Detected
Carbon Tetrachloride	11	Not Detected	71	Not Detected
2,2,4-Trimethylpentane	11	Not Detected	53	Not Detected
Benzene	11	Not Detected	36	Not Detected
1,2-Dichloroethane	11	Not Detected	46	Not Detected
Heptane	11	Not Detected	46	Not Detected
Trichloroethene	11	190	61	1000
1,2-Dichloropropane	11	Not Detected	52	Not Detected
1,4-Dioxane	45	Not Detected	160	Not Detected
Bromodichloromethane	11	Not Detected	76	Not Detected
cis-1,3-Dichloropropene	11	Not Detected	52	Not Detected
4-Methyl-2-pentanone	11	Not Detected	46	Not Detected
Toluene	11	14	43	53
trans-1,3-Dichloropropene	11	Not Detected	52	Not Detected
1,1,2-Trichloroethane	11	Not Detected	62	Not Detected
Tetrachloroethene	11	2600	77	17000
2-Hexanone	45	Not Detected	180	Not Detected

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Client Sample ID: SubSlabB

Lab ID#: 1304197B-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042020**	**Date of Collection:**	**4/4/13 9:14:00 AM**
Dil. Factor:	**22.7**	**Date of Analysis:**	**4/20/13 08:17 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	11	Not Detected	97	Not Detected
1,2-Dibromoethane (EDB)	11	Not Detected	87	Not Detected
Chlorobenzene	11	Not Detected	52	Not Detected
Ethyl Benzene	11	Not Detected	49	Not Detected
m,p-Xylene	11	Not Detected	49	Not Detected
o-Xylene	11	Not Detected	49	Not Detected
Styrene	11	Not Detected	48	Not Detected
Bromoform	11	Not Detected	120	Not Detected
Cumene	11	Not Detected	56	Not Detected
1,1,2,2-Tetrachloroethane	11	Not Detected	78	Not Detected
Propylbenzene	11	Not Detected	56	Not Detected
4-Ethyltoluene	11	Not Detected	56	Not Detected
1,3,5-Trimethylbenzene	11	Not Detected	56	Not Detected
1,2,4-Trimethylbenzene	11	Not Detected	56	Not Detected
1,3-Dichlorobenzene	11	Not Detected	68	Not Detected
1,4-Dichlorobenzene	11	Not Detected	68	Not Detected
alpha-Chlorotoluene	11	Not Detected	59	Not Detected
1,2-Dichlorobenzene	11	Not Detected	68	Not Detected
1,2,4-Trichlorobenzene	45	Not Detected	340	Not Detected
Hexachlorobutadiene	45	Not Detected	480	Not Detected
Isobutylene	45	610	100	1400

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	90	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: SubSlabC

Lab ID#: 1304197B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042022**	**Date of Collection:**	**4/3/13 9:05:00 AM**
Dil. Factor:	**103**	**Date of Analysis:**	**4/20/13 09:27 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	52	Not Detected	250	Not Detected
Freon 114	52	Not Detected	360	Not Detected
Chloromethane	520	Not Detected	1100	Not Detected
Vinyl Chloride	52	Not Detected	130	Not Detected
1,3-Butadiene	52	Not Detected	110	Not Detected
Bromomethane	520	Not Detected	2000	Not Detected
Chloroethane	210	Not Detected	540	Not Detected
Freon 11	52	61	290	340
Ethanol	210	Not Detected	390	Not Detected
Freon 113	52	Not Detected	390	Not Detected
1,1-Dichloroethene	52	Not Detected	200	Not Detected
Acetone	520	Not Detected	1200	Not Detected
2-Propanol	210	Not Detected	510	Not Detected
Carbon Disulfide	210	Not Detected	640	Not Detected
3-Chloropropene	210	Not Detected	640	Not Detected
Methylene Chloride	520	Not Detected	1800	Not Detected
Methyl tert-butyl ether	52	Not Detected	180	Not Detected
trans-1,2-Dichloroethene	52	400	200	1600
Hexane	52	Not Detected	180	Not Detected
1,1-Dichloroethane	52	Not Detected	210	Not Detected
2-Butanone (Methyl Ethyl Ketone)	210	Not Detected	610	Not Detected
cis-1,2-Dichloroethene	52	3200	200	13000
Tetrahydrofuran	52	Not Detected	150	Not Detected
Chloroform	52	Not Detected	250	Not Detected
1,1,1-Trichloroethane	52	Not Detected	280	Not Detected
Cyclohexane	52	Not Detected	180	Not Detected
Carbon Tetrachloride	52	Not Detected	320	Not Detected
2,2,4-Trimethylpentane	52	Not Detected	240	Not Detected
Benzene	52	Not Detected	160	Not Detected
1,2-Dichloroethane	52	Not Detected	210	Not Detected
Heptane	52	Not Detected	210	Not Detected
Trichloroethene	52	670	280	3600
1,2-Dichloropropane	52	Not Detected	240	Not Detected
1,4-Dioxane	210	Not Detected	740	Not Detected
Bromodichloromethane	52	Not Detected	340	Not Detected
cis-1,3-Dichloropropene	52	Not Detected	230	Not Detected
4-Methyl-2-pentanone	52	Not Detected	210	Not Detected
Toluene	52	58	190	220
trans-1,3-Dichloropropene	52	Not Detected	230	Not Detected
1,1,2-Trichloroethane	52	Not Detected	280	Not Detected
Tetrachloroethene	52	16000	350	100000
2-Hexanone	210	Not Detected	840	Not Detected

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Client Sample ID: SubSlabC

Lab ID#: 1304197B-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042022**	**Date of Collection:**	**4/3/13 9:05:00 AM**
Dil. Factor:	**103**	**Date of Analysis:**	**4/20/13 09:27 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	52	Not Detected	440	Not Detected
1,2-Dibromoethane (EDB)	52	Not Detected	400	Not Detected
Chlorobenzene	52	Not Detected	240	Not Detected
Ethyl Benzene	52	Not Detected	220	Not Detected
m,p-Xylene	52	Not Detected	220	Not Detected
o-Xylene	52	Not Detected	220	Not Detected
Styrene	52	Not Detected	220	Not Detected
Bromoform	52	Not Detected	530	Not Detected
Cumene	52	Not Detected	250	Not Detected
1,1,2,2-Tetrachloroethane	52	Not Detected	350	Not Detected
Propylbenzene	52	Not Detected	250	Not Detected
4-Ethyltoluene	52	Not Detected	250	Not Detected
1,3,5-Trimethylbenzene	52	Not Detected	250	Not Detected
1,2,4-Trimethylbenzene	52	Not Detected	250	Not Detected
1,3-Dichlorobenzene	52	Not Detected	310	Not Detected
1,4-Dichlorobenzene	52	Not Detected	310	Not Detected
alpha-Chlorotoluene	52	Not Detected	270	Not Detected
1,2-Dichlorobenzene	52	Not Detected	310	Not Detected
1,2,4-Trichlorobenzene	210	Not Detected	1500	Not Detected
Hexachlorobutadiene	210	Not Detected	2200	Not Detected
Isobutylene	210	380	470	870

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1304197B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042017a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 06:35 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#: 1304197B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042017a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 06:35 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
Isobutylene	2.0	Not Detected	4.6	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	89	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: CCV

Lab ID#: 1304197B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042002**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 10:44 AM**	

Compound	%Recovery
Freon 12	79
Freon 114	88
Chloromethane	81
Vinyl Chloride	92
1,3-Butadiene	89
Bromomethane	94
Chloroethane	93
Freon 11	79
Ethanol	78
Freon 113	88
1,1-Dichloroethene	94
Acetone	89
2-Propanol	85
Carbon Disulfide	93
3-Chloropropene	94
Methylene Chloride	80
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	88
Hexane	92
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	97
cis-1,2-Dichloroethene	89
Tetrahydrofuran	87
Chloroform	83
1,1,1-Trichloroethane	78
Cyclohexane	92
Carbon Tetrachloride	82
2,2,4-Trimethylpentane	89
Benzene	97
1,2-Dichloroethane	81
Heptane	100
Trichloroethene	89
1,2-Dichloropropane	94
1,4-Dioxane	95
Bromodichloromethane	83
cis-1,3-Dichloropropene	87
4-Methyl-2-pentanone	92
Toluene	88
trans-1,3-Dichloropropene	102
1,1,2-Trichloroethane	98
Tetrachloroethene	90
2-Hexanone	106

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Client Sample ID: CCV

Lab ID#: 1304197B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042002**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 10:44 AM**	

Compound	%Recovery
Dibromochloromethane	92
1,2-Dibromoethane (EDB)	92
Chlorobenzene	81
Ethyl Benzene	89
m,p-Xylene	94
o-Xylene	91
Styrene	92
Bromoform	83
Cumene	88
1,1,2,2-Tetrachloroethane	85
Propylbenzene	87
4-Ethyltoluene	88
1,3,5-Trimethylbenzene	78
1,2,4-Trimethylbenzene	80
1,3-Dichlorobenzene	74
1,4-Dichlorobenzene	76
alpha-Chlorotoluene	78
1,2-Dichlorobenzene	73
1,2,4-Trichlorobenzene	75
Hexachlorobutadiene	76
Isobutylene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	86	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: LCS

Lab ID#: 1304197B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042003**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 11:16 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	97
Chloromethane	96
Vinyl Chloride	107
1,3-Butadiene	100
Bromomethane	109
Chloroethane	103
Freon 11	87
Ethanol	82
Freon 113	100
1,1-Dichloroethene	109
Acetone	104
2-Propanol	98
Carbon Disulfide	126
3-Chloropropene	119
Methylene Chloride	88
Methyl tert-butyl ether	107
trans-1,2-Dichloroethene	109
Hexane	101
1,1-Dichloroethane	97
2-Butanone (Methyl Ethyl Ketone)	106
cis-1,2-Dichloroethene	97
Tetrahydrofuran	90
Chloroform	93
1,1,1-Trichloroethane	88
Cyclohexane	101
Carbon Tetrachloride	92
2,2,4-Trimethylpentane	95
Benzene	106
1,2-Dichloroethane	87
Heptane	105
Trichloroethene	114
1,2-Dichloropropane	102
1,4-Dioxane	101
Bromodichloromethane	92
cis-1,3-Dichloropropene	96
4-Methyl-2-pentanone	98
Toluene	93
trans-1,3-Dichloropropene	112
1,1,2-Trichloroethane	104
Tetrachloroethene	96
2-Hexanone	111

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Client Sample ID: LCS

Lab ID#: 1304197B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042003**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 11:16 AM**	

Compound	%Recovery
Dibromochloromethane	98
1,2-Dibromoethane (EDB)	99
Chlorobenzene	87
Ethyl Benzene	96
m,p-Xylene	101
o-Xylene	98
Styrene	99
Bromoform	87
Cumene	94
1,1,2,2-Tetrachloroethane	77
Propylbenzene	95
4-Ethyltoluene	87
1,3,5-Trimethylbenzene	93
1,2,4-Trimethylbenzene	89
1,3-Dichlorobenzene	84
1,4-Dichlorobenzene	85
alpha-Chlorotoluene	97
1,2-Dichlorobenzene	83
1,2,4-Trichlorobenzene	82
Hexachlorobutadiene	83
Isobutylene	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	85	70-130
4-Bromofluorobenzene	91	70-130

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Client Sample ID: LCSD

Lab ID#: 1304197B-06AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 11:34 AM**	

Compound	%Recovery
Freon 12	90
Freon 114	100
Chloromethane	95
Vinyl Chloride	108
1,3-Butadiene	101
Bromomethane	112
Chloroethane	108
Freon 11	89
Ethanol	82
Freon 113	101
1,1-Dichloroethene	114
Acetone	102
2-Propanol	97
Carbon Disulfide	129
3-Chloropropene	119
Methylene Chloride	90
Methyl tert-butyl ether	107
trans-1,2-Dichloroethene	115
Hexane	101
1,1-Dichloroethane	98
2-Butanone (Methyl Ethyl Ketone)	108
cis-1,2-Dichloroethene	98
Tetrahydrofuran	92
Chloroform	94
1,1,1-Trichloroethane	88
Cyclohexane	102
Carbon Tetrachloride	93
2,2,4-Trimethylpentane	97
Benzene	107
1,2-Dichloroethane	89
Heptane	106
Trichloroethene	113
1,2-Dichloropropane	104
1,4-Dioxane	100
Bromodichloromethane	90
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	96
Toluene	93
trans-1,3-Dichloropropene	112
1,1,2-Trichloroethane	107
Tetrachloroethene	98
2-Hexanone	112

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Client Sample ID: LCSD

Lab ID#: 1304197B-06AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**j042004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/20/13 11:34 AM**	

Compound	%Recovery
Dibromochloromethane	98
1,2-Dibromoethane (EDB)	101
Chlorobenzene	88
Ethyl Benzene	97
m,p-Xylene	102
o-Xylene	98
Styrene	100
Bromoform	87
Cumene	95
1,1,2,2-Tetrachloroethane	76
Propylbenzene	94
4-Ethyltoluene	84
1,3,5-Trimethylbenzene	90
1,2,4-Trimethylbenzene	83
1,3-Dichlorobenzene	79
1,4-Dichlorobenzene	79
alpha-Chlorotoluene	90
1,2-Dichlorobenzene	78
1,2,4-Trichlorobenzene	74
Hexachlorobutadiene	75
Isobutylene	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
1,2-Dichloroethane-d4	87	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 Rodney Guritz

Collected by: (Print and Sign) Rodney Guritz

Company S&W Inc. Email rdgasharwil.com

Address 3355 Hall Rd City Fairbanks State AK Zip 99709

Phone 907-458-3147 Fax

Project Info:
P.O. #
Project # 31-1-11652-001
Project Name S.F. Annex VIA

Turn Around Time:
☑ Normal
☐ Rush
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)
01A	SubSlab A	21029	4/3/13	09:47	TO-15	-30.0	-6.5		
02A	SubSlab B	37687	4/4/13	09:14	↓	-28.0	-4.0		
03A	SubSlab C	34171	4/3/13	09:05	↓	-28.0	-5.0		
04A	Miguels_kitchen	33981	4/3-4/4/13	10:20	TO-15 SIM	<-30.0	-8.0		
05A	Miguels_office A	14869		10:35		<-30.0	-7.0		
06A	Miguels_office B	34245		10:25		<-30.0	-9.0		
07A	Bamboo_Panda	5562		11:00		<-30.0	-9.5		
08A	Fast Foto_office	34021		11:40		<-30.0	-9.5		
09A	Crawlspace_BP	16770		11:20		-29.0	-8.0		
10A	Crawlspace_FF	5735		11:30		<-30.0	-7.0		

CAO 04/04/13

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Rodney Guritz	4/4/13 1600	[signature] ATL	0920 4/8/13
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes:
Custom analyte list

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	good	Yes / No / None	1304197

Form 1293 rev.11

Laboratory Data Review Checklist For Air Samples

Completed by:	Rodney Guritz
Title:	Environmental Chemist
Date:	April 30, 2013
CS Report Name:	Shopper's Forum Annex - April Air Sampling Results
Report Date:	April 23, 2013 (lab report)
Consultant Firm:	Shannon & Wilson, Inc.
Laboratory Name:	Air Toxics Ltd.
Laboratory Report Number:	1304197B
ADEC File Number:	102.38.100
ADEC Hazard ID:	

1. Laboratory

   a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

   ● Yes ● No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

   ● Yes ● No Comments:

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ● Yes ● No Comments:

b. Correct analyses requested?

● Yes ● No Comments:

3. Laboratory Sample Receipt Documentation

a. Sample condition documented–Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

● Yes ● No Comments:

b. If there were any discrepancies, were they documented? For example, incorrect sample containers, sample holding times outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

N/A; there were no sample-receiving discrepancies.

● Yes ● No Comments:

c. Data quality or usability affected? Explain.

Comments:

Data quality and usability were not affected.

4. Case Narrative

a. Present and understandable?

● Yes ● No Comments:

b. Discrepancies, errors or QC failures identified by the lab?

● Yes ● No Comments:

N/A; there were no QC failures. The lab noted that several samples were diluted.

c. Were all corrective actions documented?

● Yes ● No Comments:

N/A; no corrective action was required/performed.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

● Yes ● No Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

● Yes ● No Comments:

c. Is the data reported in micrograms per meter cube volume (µg/m^3)?

● Yes ● No Comments:

d. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

PQLs were compared to ADEC target levels for the following target analytes for the project: PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride. PQLs for cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride, were above the sub-slab target levels in sample SubSlabA.

● Yes ● No Comments:

e. Data quality or usability affected? Explain.

Comments:

While we cannot determine whether cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride were present above target levels, PCE and TCE were detected in the sample well above target levels so data usability is not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

● Yes ● No Comments:

ii. All method blank results less than PQL?

● Yes ● No Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

● Yes ● No Comments:

v. Data quality or usability affected? Please Explain.

Comments:

No analytes were detected in the method blank; data quality and usability were unaffected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

● Yes ● No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

The lab did not report any RPD failures.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

● Yes ● No Comments:

N/A

vi. Data quality or usability affected? Explain.

Comments:

Data quality and usability were unaffected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – QC and laboratory samples?

● Yes ● No Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

● Yes ● No Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

N/A

● Yes ● No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality and usability were unaffected.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 soil gas or indoor air samples?

● Yes ● No Comments:

Duplicate samples were collected at the required frequency for the project, but none were reported in this work order.

ii. Submitted blind to lab?

● Yes ● No Comments:

N/A; see above.

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

N/A; see above.

● Yes ● No Comments:

iv. Data quality or usability affected? Explain.

Comments:

Data quality and usability were not affected.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

● Yes ● No Comments:

N/A