

Transmittal

To: Gavora, Inc.

Attn: Mr. Rudy Gavora

246 Illinois Street, #3B

Date: January 3, 2014

Fairbanks, Alaska 99707

Project: Air Monitoring Report

Copies To: Ms. Tamara Cardona (ADEC)

We have enclosed the following items:

Copies	Description
1	<i>Hard Copy 2013 Air Monitoring Report, Shopper's Forum Mall Annex, 1255 Airport Way, Fairbanks, Alaska</i>

These are transmitted by:

E-mail

USPS

Courier

Hand-delivered

Comments:

By: Rodney Guritz
Title: Environmental Scientist

January 3, 2014

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

Attn: Mr. Rudy Gavora

**RE: 2013 AIR MONITORING REPORT, SHOPPER'S FORUM MALL ANNEX, 1255
AIRPORT WAY, FAIRBANKS, ALASKA**

This letter presents the results of crawlspace and indoor-air sampling we conducted in April, August, October, and November 2013 in support of ongoing vapor-intrusion assessment (VIA) activities at the Shopper's Forum Mall annex in Fairbanks, Alaska. We conducted this vapor intrusion assessment 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 the mitigation efforts taken to improve indoor-air quality at the annex, which include the installation of heat-recovery ventilators (HRVs) in the crawlspaces on the east end of the building; a vapor barrier installed in the crawlspaces in July 2013; in-line granular activated carbon (GAC) filters installed in the building's ventilation system; an ADEC-supplied portable GAC filter in Miguel's; and a sub-slab depressurization system (SSDPS) installed in August-September 2013.

The purpose of this letter is to document our crawlspace and indoor-air sampling activities, and make a preliminary evaluation of the mitigation system and its effectiveness in reducing indoor-air concentrations of chlorinated solvents, particularly tetrachloroethylene (PCE). Background information on the site and previous investigations is presented in our July 2013 *Site Characterization and Vapor-Intrusion Monitoring Work Plan*, and is not repeated here. Sample locations were consistent with those from the 2011 and 2012 sampling events, where relevant. The sampling was conducted in general accordance with our July 2013 work plan and the ADEC Vapor Intrusion Guidance for Contaminated Sites (October 2012).

The results of the April 2013 sampling were presented in a letter report dated May 1, 2013; synopses of the remaining air data have been transmitted to ADEC, but the data have not been formally reported.

FIELD ACTIVITIES AND OBSERVATIONS

In addition to the sampling tasks described below, we assisted Gavora, Inc.'s building manager in designing, implementing, and evaluating various aspects of the mitigation system, which were customized to fit the building's characteristics, and incorporated the findings of our sub-slab vacuum measurements (presented in our July 2013 work plan). The following is a rough timeline of vapor-intrusion mitigation efforts and air-sampling events that occurred in 2013:

- Fall 2012 – Crawlspace HRV installed
- Fall 2012 – Portable GAC filter installed at Miguel's
- Fall 2012 – In-line GAC filters installed
- April, 2013 – Sub-slab, crawlspace, indoor-air sampling using Summa canisters, and split-sampling of crawlspace and indoor locations using Radiello[®] passive samplers (in-line and portable GAC filters and crawlspace HRV active)
- July 2013 – Crawlspace vapor-barriers installed, additional sealing between units
- August 2013 – Crawlspace and indoor-air sampling using Radiello[®] passive samplers (GAC filters and crawlspace HRV active)
- October 4, 2013 – SSDPS startup
- October 10, 2013 – interim indoor-air sampling at Miguel's using Radiello[®] passive samplers (SSDPS, crawlspace HRV, and GAC filters active)
- November 2013 – Crawlspace and indoor-air sampling using Radiello[®] passive samplers (SSDPS and crawlspace HRV active)

Quarterly Air Monitoring

We began quarterly air monitoring of the crawlspaces under the eastern half of the annex, as well as each indoor unit, in April 2013 with additional sampling events in August and November.. We also conducted an interim sampling of Miguel's kitchen and office spaces in October 2013 following startup of the SSDPS, partly due to concern over elevated PCE levels observed during the August 2013 sampling event.

Once the SSDPS had been running for about a month, but prior to the November 2013 sampling event, Gavora, Inc. turned off ADEC's portable air filter in Miguel's office and removed the in-line carbon filters in the air-handling system. This allowed us to evaluate the effectiveness of the permanent mitigation measures (SSDPS, crawlspace sealing and ventilating).

During each quarterly sampling event, we collected air samples from the two crawlspaces (beneath Bamboo Panda and Fairbanks Fast Foto) and four indoor locations (in Fairbanks Fast Foto, Bamboo Panda, Miguel's kitchen, and Miguel's office). We collected the samples using Radiello[®] 130 passive samplers with a 24-hour sample duration, placing the sampler in the breathing space (approximately 5-6 feet above the floor) in actively-used portions of each unit; see Figure 1 for sample locations.

We submitted the samples to Air Toxics, Ltd. in Folsom, California, for analysis of volatile organic compounds (VOCs); Air Toxics analyzed the Radiello[®] samplers using their in-house standard method.

RESULTS

Table 1 presents historic analytical results of crawlspace and indoor-air samples for PCE and trichloroethylene (TCE), the primary contaminants of potential concern (COPC). While 1,1-dichloroethylene; cis-1,2-dichloroethylene; trans-1,2-dichloroethylene; and vinyl chloride are also considered COPCs, historically they have only been detected in indoor air in association with significantly higher levels of PCE, thus PCE is of primary interest. Also, of these analytes, Air Toxics only reports PCE and TCE for the Radiello[®] samplers; a full round of confirmation sampling using summa canisters will be conducted in conjunction with one of the upcoming quarterly air sampling events in 2014 to check for the presence of other analytes and to confirm passive-sampling results. Remaining VOCs reported for Radiello[®] analysis are not target analytes; for full results refer to the individual laboratory reports (attached).

The table includes the ADEC target levels for Commercial Shallow Soil Gas Screening Levels (for crawlspace samples) and Commercial Indoor Air Screening Levels for comparison, as well as historic sub-slab soil gas results from April 2011 to April 2013.

QUALITY ASSURANCE/QUALITY CONTROL

We conducted a quality control (QC)/quality assurance (QA) review of the 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 laboratory data report. 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 target analytes for the VIA.

There were no sample-handling discrepancies identified by the laboratory, and the Radiello[®] 130 passive samplers were received in good condition. No analytes were detected in the method blanks. Reporting limits for each of the reported analytes were below ADEC target levels for target analytes. Laboratory control sample and duplicate (LCS/LCSD) recovery information showed the analyses were accurate. The laboratory did not present relative percent difference (RPD) calculations for the LCS/LCSD samples; however, RPD field-duplicate calculations showed the analyses were precise.

No data were rejected as unusable and 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 the crawlspaces beneath Bamboo Panda and Fairbanks Fast Foto have been significantly reduced by mitigation measures, and were below the ADEC shallow-soil-gas target level of 1,800 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for the past three sampling events. In addition, PCE concentrations in indoor-air samples collected from Bamboo Panda and Fairbanks Fast Foto mirror this trend, and were below the ADEC indoor-air target level of $180 \mu\text{g}/\text{m}^3$ in the August and November sampling events (with TCE below laboratory reporting limits).

Sub-slab sampling was conducted annually from 2011 to 2013. Sub-slab concentrations of PCE and TCE at the Annex are well above target levels, though the SSDPS should gradually reduce them over time.

PCE and TCE concentrations in the western half of the Annex (Miguel's) prior to the October startup of the SSDPS were highly variable, with a dramatic spike in concentration in August 2013 (as high as 4,800 $\mu\text{g}/\text{m}^3$ in Miguel's office). It is unclear what caused this spike, though it may have been a previously un-observed seasonal effect; no samples had been collected during summer in 2011 or 2012. However, following startup of the SSDPS, PCE concentrations fell to below ADEC target levels and TCE concentrations to below laboratory reporting limits. These lower levels were maintained through November, despite discontinued use of carbon filtration.

At this time, statistical analysis of trends for each sampling location is not warranted. While clearly there has been some decrease in concentrations for each unit, the statistical significance of possible trends may not be useful for decision-making. Trend analysis is ideal for systems where change is gradual over time, such as in natural attenuation of groundwater plumes; for systems where concentration is dramatically affected by variables such as operation of a SSDPS, and significant seasonal and building-pressure effects are expected, trends are not as relevant.

CONCLUSIONS AND RECOMMENDATIONS

Various interim measures to improve indoor-air quality were implemented at the Annex over the course of the past three years. Now, several long-term mitigation measures are in place, including vapor-barrier and HRV systems for the crawlspace beneath the eastern half of the building and a SSDPS at the western half (Miguel's). Preliminary results indicate these long-term mitigation measures are successful, with reduction of PCE and TCE concentrations to below ADEC target levels. We plan to continue long-term monitoring of indoor air at the Annex, with quarterly sampling for a year following SSDPS startup (in January, April, and July 2014). Passive-sampler results will also be confirmed by split sampling using active (canister-based) sampling during one of the quarterly events. Once one year of monitoring has been conducted, a full evaluation of mitigation-system effectiveness will be made, and a long-term maintenance and operations plan provided for the system.

LIMITATIONS

This report was prepared for the use of Gavora, Inc., and its representatives for evaluating crawlspace 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 crawlspace 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 Shannon & Wilson. Shannon &

Gavora, Inc.
Mr. Rudy Gavora
January 3, 2014
Page 7 of 7

SHANNON & WILSON, INC.

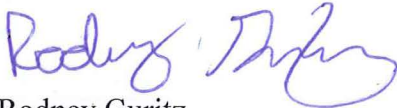
Wilson shall not be responsible for maintaining documents stored in electronic media format after acceptance by the Client.

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 Chris Darrah if you have any questions.

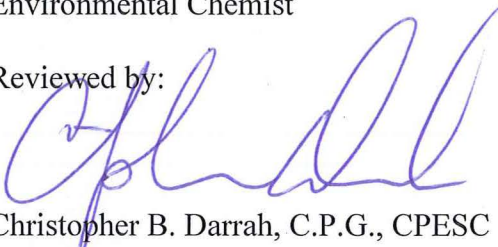
Sincerely,

SHANNON & WILSON, INC.



Rodney Guritz
Environmental Chemist

Reviewed by:



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

Enclosures: Table 1 – Historic Air-Sample Results
Figure 1 – Sample Locations
Air Toxics, Inc. Laboratory Data Reports (Work Orders 1304184, 1304197A,
1304197B, 1308170, 1310279, 1311142)
ADEC Laboratory Data Review Checklists

c: Dr. Tamara Cardona, ADEC Contaminated Sites Program

**Table 1
Historic Air-Sample Results**

Sampling Location	Date	PCE	TCE
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
Miguel's - Sub-Slab Port A	April 2011	1,400,000	11,000
	February 2012	490,000	7,500
	April 2013	2,900,000	18,000
Miguel's - Sub-Slab Port B	April 2011	840,000	3,300
	February 2012	6,100	250
	April 2013	17,000	1,000
Miguel's - Sub-Slab Port C	April 2011	420,000	5,600
	February 2012	400,000	5,000
	April 2013	100,000	3,600
Miguel's - Kitchen (indoor air)	April 2011	250E	1.6
	February 2012	280J	1.7J
	April 2013	260	1.8
	August 2013	1,200	7.6
	October 2013	43	<1.0
	November 2013	29	<1.0
Miguel's - Office (indoor air)	April 2011	1,600^a	7.3
	February 2012	940	4.6
	April 2013	470	2.7
	August 2013	4,800	25
	October 2013	67	<1.0
	November 2013	47	<1.0
Miguel's - Banquet Room	November 2013	45	<1.0
Bamboo Panda - Crawlspace	April 2011	2,000	9.8
	February 2012	3,600	20
	April 2013	1,400	7.1
	August 2013	190	<0.94
	November 2013	180	<1.0
Bamboo Panda - Indoor Air	February 2012	730J	3.6J
	April 2013	210	1.4
	August 2013	5.3 ^b	<0.93
	November 2013	27	<1.0
Fairbanks Fast Foto - Crawlspace	April 2013	620	3.1
	August 2013	120	<0.94
	November 2013	90	<1.0
Fairbanks Fast Foto - Indoor Air	February 2012	25	0.41
	April 2013	260	1.6
	August 2013	46	<0.93
	November 2013	47	<1.0
ADEC Shallow Soil Gas Target Level		1,800	88
ADEC Indoor-Air Target Level		180	8.8

Table 1
Historic Air-Sample Results

SHANNON & WILSON, INC.

Notes:

Highest of duplicate values reported

Date listed for indoor air samples is date of sample retrieval

Sub-slab depressurization system was turned on at the beginning of October 2013

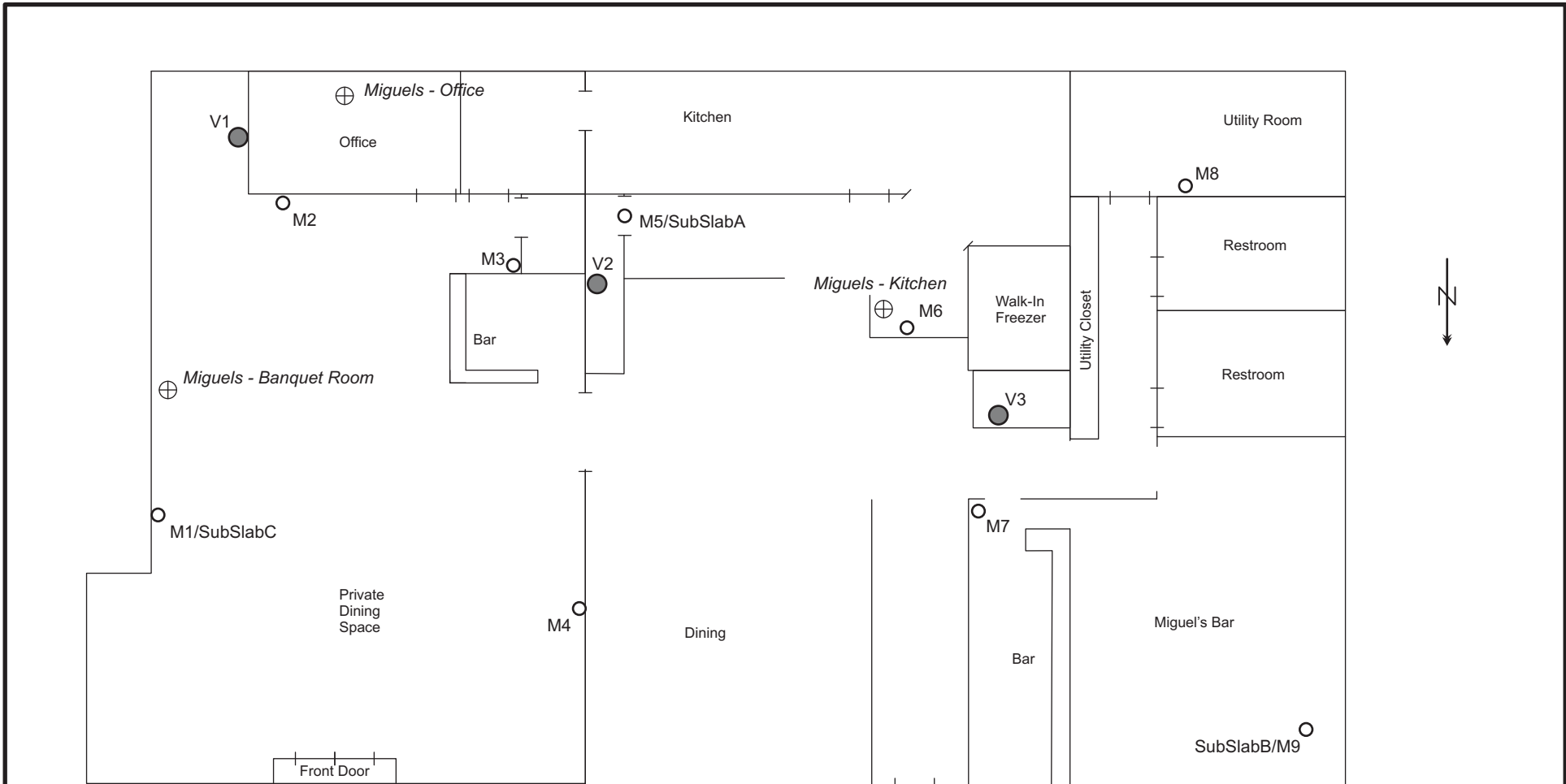
^a Miguel's had not yet expanded into this unit at the time of the April 2011 sampling.
The unit was closed off and was undergoing renovation.

^b The crawlspace hatch and back door to Bamboo Panda were found open upon
sample retrieval - restaurant workers indicated these had been left open due to an
issue with their refrigeration units in the crawlspace

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

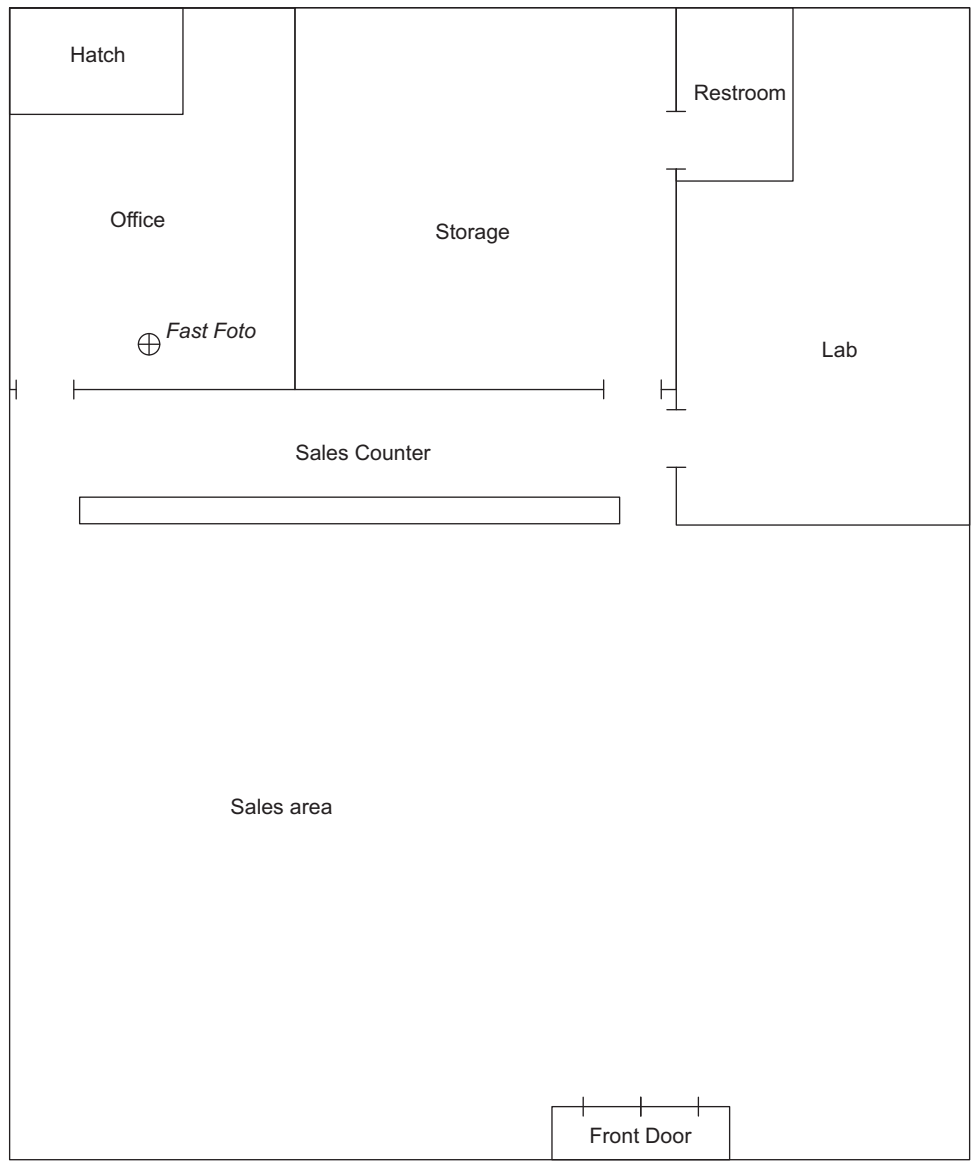


Not to Scale

Legend

- Sub-slab vacuum test port
- Sub-slab vacuum monitoring/sampling port
- ⊕ Approximate indoor-air sampling location


Shopper's Forum 2013 Air-Monitoring Report Fairbanks, Alaska	
SHOPPER'S FORUM ANNEX MIGUEL'S	
January 2014	31-1-11652-001
SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	Figure 1A

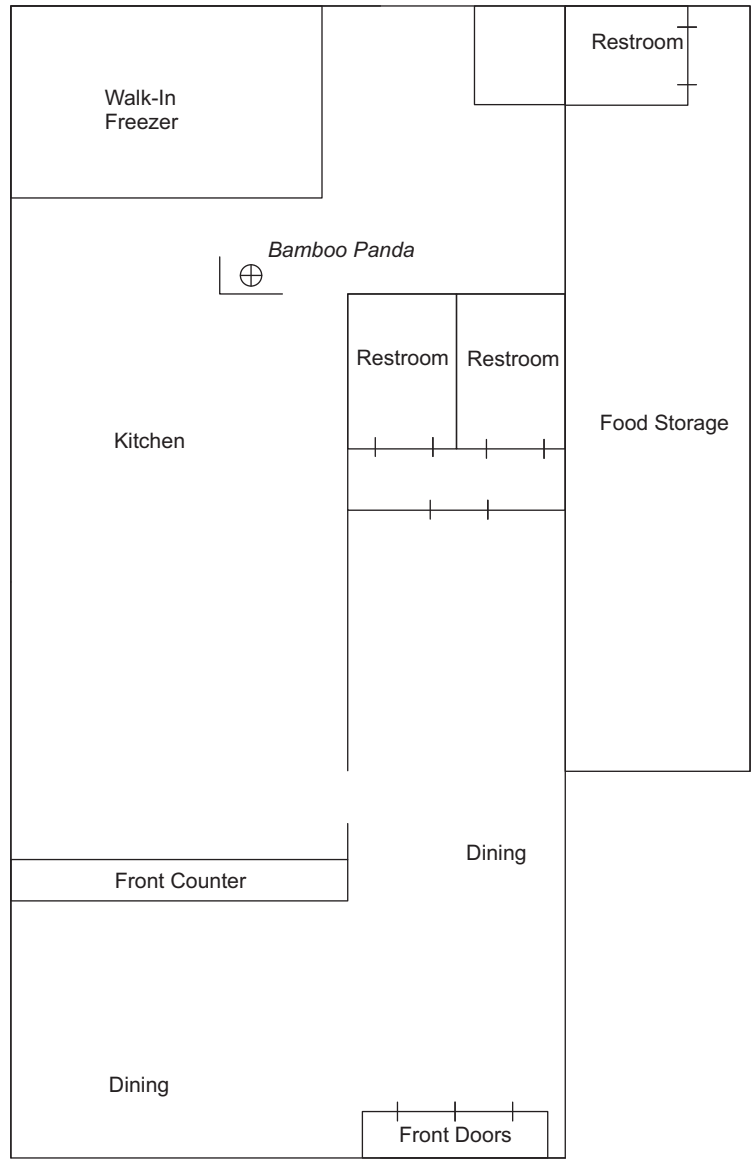


Legend

⊕ Approximate indoor-air sampling location

Not to Scale

Shopper's Forum 2013 Air-Monitoring Report Fairbanks, Alaska	
SHOPPER'S FORUM ANNEX FAIRBANKS FAST FOTO	
January 2014	31-1-11652-001
 SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	Figure 1B



Legend

⊕ Approximate indoor-air sampling location

Not to Scale

Shopper's Forum 2013 Air-Monitoring Report
Fairbanks, Alaska

**SHOPPER'S FORUM ANNEX
BAMBOO PANDA**

January 2014

31-1-11652-001

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

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

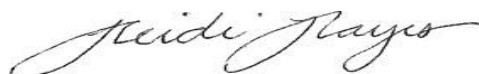
DATE RECEIVED: 04/08/2013

CONTACT: Kelly Buettner

DATE COMPLETED: 04/22/2013

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
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:



Technical Director

DATE: 04/22/13

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

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

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

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

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

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

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



Air Toxics

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

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

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



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

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



Air Toxics

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



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.

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

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

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	Turn Around Time:		Reporting Units:	Indoor Air	Outdoor Air	Workplace Monitoring	Other (Crawlspace)
								<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> Rush					
01A	Miguels_kitchen	X1357	4/3/13	10:20	4/4/13	10:32	VOC				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02A	Miguels_office.A	X1358		10:35		10:40					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03A	Miguels_office.B	X1359		10:25		10:35					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04A	Bambos_Panda	X1360		11:00		10:50					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05A	FuzFoto_office	X1363		11:40		11:15					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06A	Crawlspace_BF	X1361		11:20		10:58					<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
07A	Crawlspace_FF	X1362		11:30		11:00					<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Received by: (signature) [Signature] Date/Time 4/8/13 0920 Sample Site Air Temperature:
 Received by: (signature) _____ Date/Time _____
 Received by: (signature) _____ Date/Time _____
 Notes: See custom VOC list

Relinquished by: (signature) _____ Date/Time _____	Temp (°C) <u>N/A</u>	Condition <u>Good</u>	Custody Seals Intact? <u>Yes</u>	Work Order # <u>1304184</u>
Relinquished by: (signature) _____ Date/Time _____	Air Bill # _____	Shipper Name <u>Fedex</u>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

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

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
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:



Technical Director

DATE: 04/22/13

Certification 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

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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.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to <math>< 40\%</math> RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to <math>< 40\%</math> RSD
Daily Calibration	+/- 30% Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; 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

**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

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
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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

**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



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



Air Toxics

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



Air Toxics

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



Air Toxics

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



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



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



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



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

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

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

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

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: a041204sim.d & a041203sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 4/12/13 & 4/12/13

CAS Number	Compound	Original		Duplicate		RPD	Result Less Than 5X RL
		Amount	Flags	Amount	Flags		
71-55-6	1,1,1-Trichloroethane	92		91		1.1	
79-34-5	1,1,2,2-Tetrachloroethane	87		96		9.8	
79-00-5	1,1,2-Trichloroethane	104		106		1.9	
75-34-3	1,1-Dichloroethane	105		104		0.96	
75-35-4	1,1-Dichloroethene	106		105		0.95	
106-93-4	1,2-Dibromoethane (EDB)	107		104		2.8	
107-06-2	1,2-Dichloroethane	91		91		0	
71-43-2	Benzene	96		100		4.1	
56-23-5	Carbon Tetrachloride	98		97		1.0	
75-00-3	Chloroethane	90		88		2.2	
67-66-3	Chloroform	87		86		1.2	
74-87-3	Chloromethane	82		83		1.2	
156-59-2	cis-1,2-Dichloroethene	102		103		0.98	
100-41-4	Ethyl Benzene	104		106		1.9	
76-14-2	Freon 114	97		98		1.0	
75-71-8	Freon 12	89		88		1.1	
108-38-3	m,p-Xylene	111		110		0.90	
1634-04-4	Methyl tert-butyl ether	107		106		0.94	
95-47-6	o-Xylene	109		106		2.8	
127-18-4	Tetrachloroethene	98		97		1.0	
108-88-3	Toluene	94		100		6.2	
156-60-5	trans-1,2-Dichloroethene	114		114		0	
79-01-6	Trichloroethene	92		98		6.3	
75-01-4	Vinyl Chloride	95		92		3.2	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.



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**

Page 1 of 1

Project Manager Rodney Currier
 Collected by: (Print and Sign) Rodney Currier
 Company S&W Inc. Email rodgershawil.com
 Address 2355 Hill Rd City Fairbanks State AK Zip 99709
 Phone 907-458-3147 Fax _____

Project Info:
 P.O. # _____
 Project # 31-11652-001
 Project Name S.F. Annex VJA

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum	
						Initial	Final
01A	Sub Slab A	21029	4/3/13	09:47	TO-15	-30.0	-6.5
02A	Sub Slab B	37687	4/4/13	09:14	↓	-28.0	-4.0
03A	Sub Slab C	34171	4/3/13	09:05	↓	-28.0	-5.0
04A	Mignels - kitchen	33981	4/3-4/4/13	10:20	TO-15 SCM	-30.0	-8.0
05A	Mignels - office A	14869		10:35		-30.0	-7.0
06A	Mignels - 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	10770		10:20		-29.0	-8.0
10A	Crawlspace - FF	5735		11:30		-30.0	-7.0

Relinquished by: (signature) Rodney Currier Date/Time 4/4/13 16:00
 Relinquished by: (signature) _____ Date/Time _____
 Relinquished by: (signature) _____ Date/Time _____

Received by: (signature) _____ Date/Time 4/8/13
 Received by: (signature) _____ Date/Time _____
 Received by: (signature) _____ Date/Time _____

Shipper Name PEDEX Air Bill # _____ Temp (°C) 111F Condition good Custody Seals Intact? Yes No None Work Order # 1304197

04/09/13
 04/09/13
 04/09/13
 04/09/13
 04/09/13
 04/09/13
 04/09/13

Notes:
Custom analyte list

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

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

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
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:



Technical Director

DATE: 04/23/13

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

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

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 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

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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



Air Toxics

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

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: j042004.d & j042003.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 4/20/13 & 4/20/13

CAS Number	Compound	Original		Duplicate		RPD	Result Less Than 5X RL
		Amount	Flags	Amount	Flags		
71-55-6	1,1,1-Trichloroethane	88		88		0	
79-34-5	1,1,2,2-Tetrachloroethane	77		76		1.3	
79-00-5	1,1,2-Trichloroethane	104		107		2.8	
75-34-3	1,1-Dichloroethane	97		98		1.0	
75-35-4	1,1-Dichloroethene	109		114		4.5	
120-82-1	1,2,4-Trichlorobenzene	82		74		10	
95-63-6	1,2,4-Trimethylbenzene	89		83		7.0	
106-93-4	1,2-Dibromoethane (EDB)	99		101		2.0	
95-50-1	1,2-Dichlorobenzene	83		78		6.2	
107-06-2	1,2-Dichloroethane	87		89		2.3	
78-87-5	1,2-Dichloropropane	102		104		1.9	
108-67-8	1,3,5-Trimethylbenzene	93		90		3.3	
106-99-0	1,3-Butadiene	100		101		1.0	
541-73-1	1,3-Dichlorobenzene	84		79		6.1	
106-46-7	1,4-Dichlorobenzene	85		79		7.3	
123-91-1	1,4-Dioxane	101		100		1.0	
540-84-1	2,2,4-Trimethylpentane	95		97		2.1	
78-93-3	2-Butanone (Methyl Ethyl Ketone)	106		108		1.9	
591-78-6	2-Hexanone	111		112		0.90	
67-63-0	2-Propanol	98		97		1.0	
107-05-1	3-Chloropropene	119		119		0	
622-96-8	4-Ethyltoluene	87		84		3.5	
108-10-1	4-Methyl-2-pentanone	98		96		2.1	
67-64-1	Acetone	104		102		1.9	
100-44-7	alpha-Chlorotoluene	97		90		7.5	
71-43-2	Benzene	106		107		0.94	
75-27-4	Bromodichloromethane	92		90		2.2	
75-25-2	Bromoform	87		87		0	
74-83-9	Bromomethane	109		112		2.7	
106-97-8	Butane	108		109		0.92	
75-15-0	Carbon Disulfide	126		129		2.4	
56-23-5	Carbon Tetrachloride	92		93		1.1	
108-90-7	Chlorobenzene	87		88		1.1	
75-00-3	Chloroethane	103		108		4.7	
67-66-3	Chloroform	93		94		1.1	
74-87-3	Chloromethane	96		95		1.0	
156-59-2	cis-1,2-Dichloroethene	97		98		1.0	
10061-01-5	cis-1,3-Dichloropropene	96		95		1.0	
98-82-8	Cumene	94		95		1.0	
110-82-7	Cyclohexane	101		102		0.98	
124-48-1	Dibromochloromethane	98		98		0	
64-17-5	Ethanol	82		82		0	
100-41-4	Ethyl Benzene	96		97		1.0	
637-92-3	Ethyl-tert-butyl ether	ND	U	ND	U	0	
75-69-4	Freon 11	87		89		2.3	
76-13-1	Freon 113	100		101		1.0	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: j042004.d & j042003.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 4/20/13 & 4/20/13

CAS Number	Compound	Original		Duplicate		RPD	Result Less Than 5X RL
		Amount	Flags	Amount	Flags		
76-14-2	Freon 114	97		100		3.0	
75-71-8	Freon 12	90		90		0	
142-82-5	Heptane	105		106		0.95	
87-68-3	Hexachlorobutadiene	83		75		10	
110-54-3	Hexane	101		101		0	
78-78-4	Isopentane	95		94		1.0	
108-20-3	Isopropyl ether	ND	U	ND	U	0	
108-38-3	m,p-Xylene	101		102		0.98	
1634-04-4	Methyl tert-butyl ether	107		107		0	
108-87-2	Methylcyclohexane	96		97		1.0	
75-09-2	Methylene Chloride	88		90		2.2	
91-20-3	Naphthalene	68		64		6.1	
95-47-6	o-Xylene	98		98		0	
103-65-1	Propylbenzene	95		94		1.0	
115-07-1	Propylene	83		87		4.7	
100-42-5	Styrene	99		100		1.0	
994-05-8	tert-Amyl methyl ether	ND	U	ND	U	0	
75-65-0	tert-Butyl alcohol	ND	U	ND	U	0	
127-18-4	Tetrachloroethene	96		98		2.1	
109-99-9	Tetrahydrofuran	90		92		2.2	
108-88-3	Toluene	93		93		0	
156-60-5	trans-1,2-Dichloroethene	109		115		5.4	
10061-02-6	trans-1,3-Dichloropropene	112		112		0	
79-01-6	Trichloroethene	114		113		0.88	
108-05-4	Vinyl Acetate	107		110		2.8	
75-01-4	Vinyl Chloride	107		108		0.93	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.



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

Page 1 of 1

Project Manager Rodney Gurte
 Collected by: (Print and Sign) Rodney Gurte Email rdg@eshawil.com
 Company SAW Inc. Address 2355 Hill Rd City Fairbanks State AK Zip 99709
 Phone 907-458-3147 Fax _____

Project Info:
 P.O. # _____
 Project # 311-11652-001
 Project Name S.F. Annex VJA

Turn Around Time:
 Normal
 Rush
 specify _____
 Lab Use Only
 Pressurized by: _____
 Date: _____
 Pressurization Gas: _____
 N₂ He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum		
						Initial	Final	Receipt
01A	Sub Slab A	21029	4/3/13	09:47	TO-15	-30.0	-6.5	
02A	Sub Slab B	37687	4/4/13	09:14	↓	-28.0	-4.0	
03A	Sub Slab C	34171	4/3/13	09:05	↓	-28.0	-5.0	
04A	Miguels_kitchen	33981	4/3-4/4/13	10:20	TO-15 SCM	<-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	10770		10:20		-29.0	-8.0	
10A	Crawlspace_FF	5735		11:30		<-30.0	-7.0	

Relinquished by: (signature) Rodney Gurte Date/Time 4/4/13 16:00
 Received by: (signature) [Signature] Date/Time 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

Shipper Name RedTex Air Bill # _____ Temp (°C) with good Condition _____
 Custody Seals Intact? Yes No None Work Order # 1304197

CAO 04/09/13

8/24/2013

Mr. Rodney Guritz
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: Shoppers Forum
Project #: 31-1-11652-001
Workorder #: 1308170

Dear Mr. Rodney Guritz

The following report includes the data for the above referenced project for sample(s) received on 8/8/2013 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

WORK ORDER #: 1308170

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 Shoppers Forum

DATE RECEIVED: 08/08/2013

CONTACT: Kelly Buettner

DATE COMPLETED: 08/24/2013

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	Fast_Foto_Office	Passive S.E. RAD130/SKC
02A	Crawlspace_BP	Passive S.E. RAD130/SKC
03A	Crawlspace_FF	Passive S.E. RAD130/SKC
04A	Bamboo Panda	Passive S.E. RAD130/SKC
05A	Miguels_Kitchen	Passive S.E. RAD130/SKC
06A	Miguels_OfficeA	Passive S.E. RAD130/SKC
07A	Miguels_OfficeB	Passive S.E. RAD130/SKC
08A	Lab Blank	Passive S.E. RAD130/SKC
09A	LCS	Passive S.E. RAD130/SKC
09AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY:



Technical Director

DATE: 08/24/13

LABORATORY NARRATIVE
Passive SE GC/MS
Shannon & Wilson, Inc.
Workorder# 1308170

Seven Radiello 130 (Solvent) samples were received on August 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

There were no receiving discrepancies.

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 site temperature provided by the field sampler.

An exposure time of 1609 minutes and a temperature of 70 deg F was used to calculate concentrations for the Laboratory Blank.

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

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

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

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: Fast_Foto_Office

Lab ID#: 1308170-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.3	19	120
Acetone	0.20	1.7	1.4	12
2-Propanol	0.20	2.5	1.1	13
2-Butanone (Methyl Ethyl Ketone)	0.10	0.81	0.20	1.6
Heptane	0.10	1.1	0.11	1.2
Toluene	0.10	0.87	1.0	9.0
Tetrachloroethene	0.10	1.1	4.2	46
Ethyl Benzene	0.10	0.95	0.12	1.2
m,p-Xylene	0.10	0.92	0.37	3.4
o-Xylene	0.10	0.99	0.15	1.5
Propylbenzene	0.10	1.1	0.15	1.7

Client Sample ID: Crawlspace_BP

Lab ID#: 1308170-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.4	43	280
Acetone	0.20	1.7	1.8	15
2-Propanol	0.20	2.5	0.69	8.6
Hexane	0.10	0.98	0.15	1.4
Ethyl Acetate	0.40	3.3	0.48	4.0
2-Butanone (Methyl Ethyl Ketone)	0.10	0.82	0.43	3.5
Chloroform	0.10	0.86	0.26	2.2
Cyclohexane	0.10	1.2	0.11	1.3
Heptane	0.10	1.1	0.13	1.4
Toluene	0.10	0.88	0.99	8.7
Tetrachloroethene	0.10	1.1	17	190
Ethyl Benzene	0.10	0.95	0.28	2.7
m,p-Xylene	0.10	0.93	0.92	8.6
o-Xylene	0.10	1.0	0.41	4.1
Propylbenzene	0.10	1.1	0.44	5.0

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

Client Sample ID: Crawlspace_FF

Lab ID#: 1308170-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.3	27	170
Acetone	0.20	1.7	1.1	9.6
2-Propanol	0.20	2.5	0.52	6.5
Ethyl Acetate	0.40	3.3	0.43	3.6
2-Butanone (Methyl Ethyl Ketone)	0.10	0.82	0.22	1.8
Chloroform	0.10	0.86	0.15	1.3
Heptane	0.10	1.1	0.10	1.2
Toluene	0.10	0.87	1.2	10
Tetrachloroethene	0.10	1.1	11	120
Ethyl Benzene	0.10	0.95	0.29	2.8
m,p-Xylene	0.10	0.92	1.0	9.3
o-Xylene	0.10	1.0	0.47	4.7
Propylbenzene	0.10	1.1	0.55	6.2

Client Sample ID: Bamboo Panda

Lab ID#: 1308170-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.3	77	480
Acetone	0.20	1.6	1.4	12
2-Propanol	0.20	2.4	0.74	9.1
Hexane	0.10	0.97	0.10	1.0
Ethyl Acetate	0.40	3.3	0.51	4.2
2-Butanone (Methyl Ethyl Ketone)	0.10	0.81	0.16	1.3
Chloroform	0.10	0.85	0.18	1.5
Benzene	0.40	3.2	0.43	3.5
Toluene	0.10	0.86	0.52	4.5
Tetrachloroethene	0.10	1.1	0.49	5.3
m,p-Xylene	0.10	0.91	0.20	1.8

Client Sample ID: Miguels_Kitchen

Lab ID#: 1308170-05A

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

Client Sample ID: Miguels_Kitchen

Lab ID#: 1308170-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	94	590
Acetone	0.20	1.6	2.9	24
2-Propanol	0.20	2.4	5.8	71
Hexane	0.10	0.96	0.14	1.4
Ethyl Acetate	0.40	3.2	0.54	4.4
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	0.34	2.7
Chloroform	0.10	0.84	0.20	1.7
Benzene	0.40	3.2	0.43	3.4
Trichloroethene	0.10	0.92	0.83	7.6
Toluene	0.10	0.86	0.88	7.6
Tetrachloroethene	0.10	1.1	120	1200
Ethyl Benzene	0.10	0.93	0.12	1.1
m,p-Xylene	0.10	0.91	0.34	3.1
o-Xylene	0.10	0.98	0.11	1.1

Client Sample ID: Miguels_OfficeA

Lab ID#: 1308170-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	44	270
Acetone	0.20	1.6	2.5	21
2-Propanol	0.20	2.4	3.7	45
Ethyl Acetate	0.40	3.2	0.48	3.9
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	0.27	2.2
Chloroform	0.10	0.85	0.14	1.2
Trichloroethene	0.10	0.92	2.4	22
Toluene	0.10	0.86	0.78	6.7
Tetrachloroethene	0.13	1.4	400	4300
Ethyl Benzene	0.10	0.93	0.11	0.99
m,p-Xylene	0.10	0.91	0.28	2.5
o-Xylene	0.10	0.98	0.10	0.98

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

Client Sample ID: Miguels_OfficeB

Lab ID#: 1308170-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	51	320
Acetone	0.20	1.6	2.9	24
2-Propanol	0.20	2.4	4.0	49
Hexane	0.10	0.96	0.14	1.4
Ethyl Acetate	0.40	3.2	0.47	3.8
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	0.28	2.3
Chloroform	0.10	0.85	0.14	1.1
Benzene	0.40	3.2	0.42	3.3
Heptane	0.10	1.1	0.10	1.1
Trichloroethene	0.10	0.92	2.7	25
Toluene	0.10	0.86	0.81	6.9
Tetrachloroethene	0.14	1.5	450	4800
Ethyl Benzene	0.10	0.93	0.11	1.0
m,p-Xylene	0.10	0.91	0.30	2.7
o-Xylene	0.10	0.98	0.11	1.0



Air Toxics

Client Sample ID: Fast_Foto_Office

Lab ID#: 1308170-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080912sim	Date of Collection:	8/3/13 2:10:00 PM
Dil. Factor:	1.00	Date of Analysis:	8/9/13 03:17 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.3	19	120
Acetone	0.20	1.7	1.4	12
2-Propanol	0.20	2.5	1.1	13
Methyl tert-butyl ether	0.10	0.99	Not Detected	Not Detected
Hexane	0.10	0.97	Not Detected	Not Detected
Ethyl Acetate	0.40	3.3	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.81	0.20	1.6
Chloroform	0.10	0.86	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.96	Not Detected	Not Detected
Benzene	0.40	3.2	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.84	Not Detected	Not Detected
Heptane	0.10	1.1	0.11	1.2
Trichloroethene	0.10	0.93	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.87	1.0	9.0
Tetrachloroethene	0.10	1.1	4.2	46
Chlorobenzene	0.10	0.95	Not Detected	Not Detected
Ethyl Benzene	0.10	0.95	0.12	1.2
m,p-Xylene	0.10	0.92	0.37	3.4
o-Xylene	0.10	0.99	0.15	1.5
Styrene	0.10	1.0	Not Detected	Not Detected
Propylbenzene	0.10	1.1	0.15	1.7
1,4-Dichlorobenzene	0.10	1.3	Not Detected	Not Detected
Naphthalene	0.10	2.6	Not Detected	Not Detected

Temperature = 70F , duration time = 1586 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130

Client Sample ID: Crawlspace_BP

Lab ID#: 1308170-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080913sim	Date of Collection:	8/3/13 2:14:00 PM
Dil. Factor:	1.00	Date of Analysis:	8/9/13 03:40 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.4	43	280
Acetone	0.20	1.7	1.8	15
2-Propanol	0.20	2.5	0.69	8.6
Methyl tert-butyl ether	0.10	1.0	Not Detected	Not Detected
Hexane	0.10	0.98	0.15	1.4
Ethyl Acetate	0.40	3.3	0.48	4.0
2-Butanone (Methyl Ethyl Ketone)	0.10	0.82	0.43	3.5
Chloroform	0.10	0.86	0.26	2.2
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	0.11	1.3
Carbon Tetrachloride	0.10	0.97	Not Detected	Not Detected
Benzene	0.40	3.2	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.84	Not Detected	Not Detected
Heptane	0.10	1.1	0.13	1.4
Trichloroethene	0.10	0.94	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.88	0.99	8.7
Tetrachloroethene	0.10	1.1	17	190
Chlorobenzene	0.10	0.95	Not Detected	Not Detected
Ethyl Benzene	0.10	0.95	0.28	2.7
m,p-Xylene	0.10	0.93	0.92	8.6
o-Xylene	0.10	1.0	0.41	4.1
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.1	0.44	5.0
1,4-Dichlorobenzene	0.10	1.3	Not Detected	Not Detected
Naphthalene	0.10	2.6	Not Detected	Not Detected

Temperature = 70F , duration time = 1574 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130

Client Sample ID: Crawlspace_FF

Lab ID#: 1308170-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080914sim	Date of Collection:	8/3/13 2:15:00 PM
Dil. Factor:	1.00	Date of Analysis:	8/9/13 04:03 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.3	27	170
Acetone	0.20	1.7	1.1	9.6
2-Propanol	0.20	2.5	0.52	6.5
Methyl tert-butyl ether	0.10	1.0	Not Detected	Not Detected
Hexane	0.10	0.98	Not Detected	Not Detected
Ethyl Acetate	0.40	3.3	0.43	3.6
2-Butanone (Methyl Ethyl Ketone)	0.10	0.82	0.22	1.8
Chloroform	0.10	0.86	0.15	1.3
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.96	Not Detected	Not Detected
Benzene	0.40	3.2	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.84	Not Detected	Not Detected
Heptane	0.10	1.1	0.10	1.2
Trichloroethene	0.10	0.94	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.87	1.2	10
Tetrachloroethene	0.10	1.1	11	120
Chlorobenzene	0.10	0.95	Not Detected	Not Detected
Ethyl Benzene	0.10	0.95	0.29	2.8
m,p-Xylene	0.10	0.92	1.0	9.3
o-Xylene	0.10	1.0	0.47	4.7
Styrene	0.10	1.1	Not Detected	Not Detected
Propylbenzene	0.10	1.1	0.55	6.2
1,4-Dichlorobenzene	0.10	1.3	Not Detected	Not Detected
Naphthalene	0.10	2.6	Not Detected	Not Detected

Temperature = 70F , duration time = 1577 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130

Client Sample ID: Bamboo Panda

Lab ID#: 1308170-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080915sim	Date of Collection:	8/3/13 2:17:00 PM
Dil. Factor:	1.00	Date of Analysis:	8/9/13 04:27 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.3	77	480
Acetone	0.20	1.6	1.4	12
2-Propanol	0.20	2.4	0.74	9.1
Methyl tert-butyl ether	0.10	0.98	Not Detected	Not Detected
Hexane	0.10	0.97	0.10	1.0
Ethyl Acetate	0.40	3.3	0.51	4.2
2-Butanone (Methyl Ethyl Ketone)	0.10	0.81	0.16	1.3
Chloroform	0.10	0.85	0.18	1.5
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.95	Not Detected	Not Detected
Benzene	0.40	3.2	0.43	3.5
1,2-Dichloroethane	0.10	0.83	Not Detected	Not Detected
Heptane	0.10	1.1	Not Detected	Not Detected
Trichloroethene	0.10	0.93	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.86	0.52	4.5
Tetrachloroethene	0.10	1.1	0.49	5.3
Chlorobenzene	0.10	0.94	Not Detected	Not Detected
Ethyl Benzene	0.10	0.94	Not Detected	Not Detected
m,p-Xylene	0.10	0.91	0.20	1.8
o-Xylene	0.10	0.98	Not Detected	Not Detected
Styrene	0.10	1.0	Not Detected	Not Detected
Propylbenzene	0.10	1.1	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.2	Not Detected	Not Detected
Naphthalene	0.10	2.6	Not Detected	Not Detected

Temperature = 70F , duration time = 1597 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130

Client Sample ID: **Miguels_Kitchen**

Lab ID#: **1308170-05A**

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080916sim	Date of Collection: 8/3/13 2:19:00 PM
Dil. Factor:	1.00	Date of Analysis: 8/9/13 04:50 PM
		Date of Extraction: 8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	94	590
Acetone	0.20	1.6	2.9	24
2-Propanol	0.20	2.4	5.8	71
Methyl tert-butyl ether	0.10	0.98	Not Detected	Not Detected
Hexane	0.10	0.96	0.14	1.4
Ethyl Acetate	0.40	3.2	0.54	4.4
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	0.34	2.7
Chloroform	0.10	0.84	0.20	1.7
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.95	Not Detected	Not Detected
Benzene	0.40	3.2	0.43	3.4
1,2-Dichloroethane	0.10	0.82	Not Detected	Not Detected
Heptane	0.10	1.1	Not Detected	Not Detected
Trichloroethene	0.10	0.92	0.83	7.6
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.86	0.88	7.6
Tetrachloroethene	0.10	1.1	120	1200
Chlorobenzene	0.10	0.93	Not Detected	Not Detected
Ethyl Benzene	0.10	0.93	0.12	1.1
m,p-Xylene	0.10	0.91	0.34	3.1
o-Xylene	0.10	0.98	0.11	1.1
Styrene	0.10	1.0	Not Detected	Not Detected
Propylbenzene	0.10	1.1	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.2	Not Detected	Not Detected
Naphthalene	0.10	2.5	Not Detected	Not Detected

Temperature = 70F , duration time = 1609 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130

Client Sample ID: Miguels_OfficeA

Lab ID#: 1308170-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080917sim	Date of Collection:	8/3/13 2:21:00 PM
Dil. Factor:	1.00	Date of Analysis:	8/9/13 05:14 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	44	270
Acetone	0.20	1.6	2.5	21
2-Propanol	0.20	2.4	3.7	45
Methyl tert-butyl ether	0.10	0.98	Not Detected	Not Detected
Hexane	0.10	0.96	Not Detected	Not Detected
Ethyl Acetate	0.40	3.2	0.48	3.9
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	0.27	2.2
Chloroform	0.10	0.85	0.14	1.2
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.95	Not Detected	Not Detected
Benzene	0.40	3.2	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.82	Not Detected	Not Detected
Heptane	0.10	1.1	Not Detected	Not Detected
Trichloroethene	0.10	0.92	2.4	22
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.86	0.78	6.7
Tetrachloroethene	0.13	1.4	400	4300
Chlorobenzene	0.10	0.93	Not Detected	Not Detected
Ethyl Benzene	0.10	0.93	0.11	0.99
m,p-Xylene	0.10	0.91	0.28	2.5
o-Xylene	0.10	0.98	0.10	0.98
Styrene	0.10	1.0	Not Detected	Not Detected
Propylbenzene	0.10	1.1	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.2	Not Detected	Not Detected
Naphthalene	0.10	2.5	Not Detected	Not Detected

Tetrachloroethene was reported from file # 10081904sim analyzed on 8/19/2013 at a dilution factor of 1.33.

Temperature = 70F , duration time = 1608 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	105	70-130



Client Sample ID: Miguels_OfficeB

Lab ID#: 1308170-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080918sim	Date of Collection:	8/3/13 2:22:00 PM
Dil. Factor:	1.00	Date of Analysis:	8/9/13 05:38 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	51	320
Acetone	0.20	1.6	2.9	24
2-Propanol	0.20	2.4	4.0	49
Methyl tert-butyl ether	0.10	0.98	Not Detected	Not Detected
Hexane	0.10	0.96	0.14	1.4
Ethyl Acetate	0.40	3.2	0.47	3.8
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	0.28	2.3
Chloroform	0.10	0.85	0.14	1.1
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.95	Not Detected	Not Detected
Benzene	0.40	3.2	0.42	3.3
1,2-Dichloroethane	0.10	0.82	Not Detected	Not Detected
Heptane	0.10	1.1	0.10	1.1
Trichloroethene	0.10	0.92	2.7	25
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.86	0.81	6.9
Tetrachloroethene	0.14	1.5	450	4800
Chlorobenzene	0.10	0.93	Not Detected	Not Detected
Ethyl Benzene	0.10	0.93	0.11	1.0
m,p-Xylene	0.10	0.91	0.30	2.7
o-Xylene	0.10	0.98	0.11	1.0
Styrene	0.10	1.0	Not Detected	Not Detected
Propylbenzene	0.10	1.1	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.2	Not Detected	Not Detected
Naphthalene	0.10	2.5	Not Detected	Not Detected

Tetrachloroethene was reported from file # 10081905sim analyzed on 8/19/2013 at a dilution factor of 1.43.

Temperature = 70F , duration time = 1607 minutes.

Container Type: Radiello 130 (Solvent)

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

Client Sample ID: Lab Blank

Lab ID#: 1308170-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080905sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/9/13 12:32 PM
		Date of Extraction:	8/9/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.2	Not Detected	Not Detected
Acetone	0.20	1.6	Not Detected	Not Detected
2-Propanol	0.20	2.4	Not Detected	Not Detected
Methyl tert-butyl ether	0.10	0.98	Not Detected	Not Detected
Hexane	0.10	0.96	Not Detected	Not Detected
Ethyl Acetate	0.40	3.2	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.80	Not Detected	Not Detected
Chloroform	0.10	0.84	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	1.0	Not Detected	Not Detected
Cyclohexane	0.10	1.2	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.95	Not Detected	Not Detected
Benzene	0.40	3.2	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.82	Not Detected	Not Detected
Heptane	0.10	1.1	Not Detected	Not Detected
Trichloroethene	0.10	0.92	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	1.9	Not Detected	Not Detected
Toluene	0.10	0.86	Not Detected	Not Detected
Tetrachloroethene	0.10	1.1	Not Detected	Not Detected
Chlorobenzene	0.10	0.93	Not Detected	Not Detected
Ethyl Benzene	0.10	0.93	Not Detected	Not Detected
m,p-Xylene	0.10	0.91	Not Detected	Not Detected
o-Xylene	0.10	0.98	Not Detected	Not Detected
Styrene	0.10	1.0	Not Detected	Not Detected
Propylbenzene	0.10	1.1	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	1.2	Not Detected	Not Detected
Naphthalene	0.10	2.5	Not Detected	Not Detected

Temperature = 70F , duration time = 1609 minutes.

Container Type: Radiello 130 (Solvent)

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

Client Sample ID: LCS

Lab ID#: 1308170-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080903sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/9/13 11:46 AM
		Date of Extraction: 8/9/13

Compound	%Recovery	Method Limits
Ethanol	62	50-130
Acetone	93	70-130
2-Propanol	257 Q	50-130
Methyl tert-butyl ether	108	70-130
Hexane	101	70-130
Ethyl Acetate	98	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
Chloroform	101	70-130
1,1,1-Trichloroethane	100	70-130
Cyclohexane	116	70-130
Carbon Tetrachloride	107	70-130
Benzene	93	70-130
1,2-Dichloroethane	113	70-130
Heptane	94	70-130
Trichloroethene	104	70-130
4-Methyl-2-pentanone	104	70-130
Toluene	102	70-130
Tetrachloroethene	102	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	104	70-130
o-Xylene	96	70-130
Styrene	66	20-100
Propylbenzene	111	70-130
1,4-Dichlorobenzene	89	50-130
Naphthalene	12	5-100

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

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

Client Sample ID: LCSD

Lab ID#: 1308170-09AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10080904sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/9/13 12:09 PM
		Date of Extraction:	8/9/13

Compound	%Recovery	Method Limits
Ethanol	50	50-130
Acetone	79	70-130
2-Propanol	216 Q	50-130
Methyl tert-butyl ether	94	70-130
Hexane	117	70-130
Ethyl Acetate	90	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
Chloroform	91	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	107	70-130
Carbon Tetrachloride	104	70-130
Benzene	91	70-130
1,2-Dichloroethane	105	70-130
Heptane	94	70-130
Trichloroethene	102	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	101	70-130
Tetrachloroethene	102	70-130
Chlorobenzene	95	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	104	70-130
o-Xylene	93	70-130
Styrene	67	20-100
Propylbenzene	108	70-130
1,4-Dichlorobenzene	87	50-130
Naphthalene	12	5-100

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

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

PASSIVE SAMPLE COLLECTION



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

Page 1 of 1

Project Manager Rodney Guntz
 Collected by: (Print and Sign) Rodney Guntz/Heather Zindley Rodney
 Company Shannon & Wilson, Inc. Email rdg@shannonwil.com
 Address 2355 Hill Rd. City Fairbanks State AK Zip 99709
 Phone 907-458-3147 Fax _____

Project Info:
 P.O. # _____
 Project # 31-11652-001
 Project Name Shoppers Forum

Turn Around Time:
 Normal
 Rush
 specify _____

Reporting Units:
 ppmv
 ppbv
 µg/m3
 mg/m3

Analysis Requested
VOCs (PCE, TCE, cis-1,2-DCE)

Indoor Air Outdoor Air Workplace Monitoring Other (specify space)

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
01A	Fast-Photo-office	*	8/2/13	11:44	8/3/13	14:10	
02A	Crawlspace - BP			12:00		14:14	
03A	Crawlspace - FF			11:58		14:15	
04A	Bamboo Panda			11:40		14:17	
05A	Mignels - kitchen			11:30		14:19	
06A	Mignels - office A			11:33		14:21	
07A	Mignels - office B			11:35		14:22	

Received by: (signature) [Signature] Date/Time 8/8/13 07:80
 Received by: (signature) _____ Date/Time _____
 Received by: (signature) _____ Date/Time _____

Sample Site Air Temperature: 70°F

Notes: *
Sample vials are labelled

Relinquished by: (signature) [Signature] Date/Time _____
 Relinquished by: (signature) _____ Date/Time _____
 Relinquished by: (signature) _____ Date/Time _____

Lab Use Only

Shipper Name Feltz Air Bill # _____ Temp (°C) NA Condition good Custody Seals Intact? Yes No None Work Order # 1308170

10/17/2013
Mr. Rodney Guritz
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: Shopper's Forum
Project #: 31-1-11652-001
Workorder #: 1310279

Dear Mr. Rodney Guritz

The following report includes the data for the above referenced project for sample(s) received on 10/14/2013 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

WORK ORDER #: 1310279

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
FAX: 907-479-5691
DATE RECEIVED: 10/14/2013
DATE COMPLETED: 10/17/2013

P.O. #
PROJECT # 31-1-11652-001 Shopper's Forum
CONTACT: Kelly Buettner

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	Miguels_office A	Passive S.E. RAD130/SKC
02A	Miguels_kitchen	Passive S.E. RAD130/SKC
03A	Lab Blank	Passive S.E. RAD130/SKC
04A	LCS	Passive S.E. RAD130/SKC
04AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY:



Technical Director

DATE: 10/17/13

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LABORATORY NARRATIVE
Passive SE GC/MS
Shannon & Wilson, Inc.
Workorder# 1310279

Two Radiello 130 (Solvent) samples were received on October 14, 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

There were no receiving discrepancies.

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 site temperatures provided by the field sampler.

An exposure time of 1451 minutes and a temperature of 70 deg F was used to calculate concentrations for the Field Blanks and the Laboratory Blank.

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

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

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

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: Miguels_office A

Lab ID#: 1310279-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	43	300
Acetone	0.20	1.8	0.98	8.9
2-Propanol	0.20	2.7	1.1	15
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	0.15	1.3
Toluene	0.10	0.95	0.28	2.7
Tetrachloroethene	0.10	1.2	5.6	67
m,p-Xylene	0.10	1.0	0.18	1.8

Client Sample ID: Miguels_kitchen

Lab ID#: 1310279-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	60	410
Acetone	0.20	1.8	1.2	11
2-Propanol	0.20	2.7	1.4	18
2-Butanone (Methyl Ethyl Ketone)	0.10	0.89	0.19	1.7
Benzene	0.40	3.5	0.40	3.5
Toluene	0.10	0.95	0.32	3.0
Tetrachloroethene	0.10	1.2	3.6	43
m,p-Xylene	0.10	1.0	0.20	2.0



Client Sample ID: Miguels_office A

Lab ID#: 1310279-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10101508sim	Date of Collection:	10/10/13 4:43:00 PM
Dil. Factor:	1.00	Date of Analysis:	10/15/13 11:02 AM
		Date of Extraction:	10/15/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	43	300
Acetone	0.20	1.8	0.98	8.9
2-Propanol	0.20	2.7	1.1	15
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	0.15	1.3
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	0.91	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	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	0.28	2.7
Tetrachloroethene	0.10	1.2	5.6	67
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	0.18	1.8
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 = 70F , duration time = 1451 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

Client Sample ID: Miguels_kitchen

Lab ID#: 1310279-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10101509sim	Date of Collection:	10/10/13 4:45:00 PM
Dil. Factor:	1.00	Date of Analysis:	10/15/13 11:25 AM
		Date of Extraction:	10/15/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	60	410
Acetone	0.20	1.8	1.2	11
2-Propanol	0.20	2.7	1.4	18
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	0.19	1.7
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	0.40	3.5
1,2-Dichloroethane	0.10	0.91	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	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	0.32	3.0
Tetrachloroethene	0.10	1.2	3.6	43
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	0.20	2.0
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 = 70F , duration time = 1450 minutes.

Container Type: Radiello 130 (Solvent)

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



Client Sample ID: Lab Blank

Lab ID#: 1310279-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10101505sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	10/15/13 09:52 AM
		Date of Extraction:	10/15/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.9	Not Detected	Not Detected
Acetone	0.20	1.8	Not Detected	Not Detected
2-Propanol	0.20	2.7	Not Detected	Not Detected
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	Not Detected	Not Detected
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	0.91	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	2.1	Not Detected	Not Detected
Toluene	0.10	0.95	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	1.0	Not Detected	Not Detected
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 = 70F , duration time = 1451 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

Client Sample ID: LCS

Lab ID#: 1310279-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10101503sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/13 09:05 AM
		Date of Extraction: 10/15/13

Compound	%Recovery	Method Limits
Ethanol	60	50-130
Acetone	79	70-130
2-Propanol	162 Q	50-130
Methyl tert-butyl ether	106	70-130
Hexane	114	70-130
Ethyl Acetate	87	70-130
2-Butanone (Methyl Ethyl Ketone)	82	70-130
Chloroform	75	70-130
1,1,1-Trichloroethane	89	70-130
Cyclohexane	82	70-130
Carbon Tetrachloride	112	70-130
Benzene	100	70-130
1,2-Dichloroethane	78	70-130
Heptane	123	70-130
Trichloroethene	104	70-130
4-Methyl-2-pentanone	97	70-130
Toluene	94	70-130
Tetrachloroethene	102	70-130
Chlorobenzene	89	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	97	70-130
o-Xylene	86	70-130
Styrene	59	20-100
Propylbenzene	102	70-130
1,4-Dichlorobenzene	81	50-130
Naphthalene	8.9	5-100

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Client Sample ID: LCSD

Lab ID#: 1310279-04AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10101504sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/15/13 09:28 AM
		Date of Extraction: 10/15/13

Compound	%Recovery	Method Limits
Ethanol	63	50-130
Acetone	87	70-130
2-Propanol	170 Q	50-130
Methyl tert-butyl ether	103	70-130
Hexane	130	70-130
Ethyl Acetate	90	70-130
2-Butanone (Methyl Ethyl Ketone)	84	70-130
Chloroform	81	70-130
1,1,1-Trichloroethane	86	70-130
Cyclohexane	89	70-130
Carbon Tetrachloride	122	70-130
Benzene	108	70-130
1,2-Dichloroethane	75	70-130
Heptane	128	70-130
Trichloroethene	107	70-130
4-Methyl-2-pentanone	98	70-130
Toluene	95	70-130
Tetrachloroethene	103	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	98	70-130
o-Xylene	88	70-130
Styrene	63	20-100
Propylbenzene	100	70-130
1,4-Dichlorobenzene	74	50-130
Naphthalene	6.9	5-100

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

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

11/22/2013

Mr. Rodney Guritz
Shannon & Wilson, Inc.
2355 Hill Road

Fairbanks AK 99709

Project Name: Shopper's Forum

Project #: 31-1-11652-001

Workorder #: 1311142

Dear Mr. Rodney Guritz

The following report includes the data for the above referenced project for sample(s) received on 11/8/2013 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

WORK ORDER #: 1311142

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 Shopper's Forum
DATE RECEIVED:	11/08/2013	CONTACT:	Kelly Buettner
DATE COMPLETED:	11/22/2013		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	Miguels_Office A	Passive S.E. RAD130/SKC
02A	Miguels_Office B	Passive S.E. RAD130/SKC
03A	MiguelsBanquetRoom	Passive S.E. RAD130/SKC
04A	Miguels_Kitchen	Passive S.E. RAD130/SKC
05A	BambooPanda	Passive S.E. RAD130/SKC
06A	FastFoto_Office	Passive S.E. RAD130/SKC
07A	Crawlspace_FF	Passive S.E. RAD130/SKC
08A	Crawlspace_BP	Passive S.E. RAD130/SKC
09A	Lab Blank	Passive S.E. RAD130/SKC
10A	LCS	Passive S.E. RAD130/SKC
10AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: 

 Technical Director

DATE: 11/22/13

LABORATORY NARRATIVE
Passive SE GC/MS
Shannon & Wilson, Inc.
Workorder# 1311142

Eight Radiello 130 (Solvent) samples were received on November 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

There were no receiving discrepancies.

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 site temperatures provided by the field sampler.

An exposure time of 1493 minutes and a temperature of 70 deg F was used to calculate concentrations for the Laboratory Blank.

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

Definition of Data Qualifying Flags

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

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

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

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: Miguels_Office A

Lab ID#: 1311142-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.7	39	260
Acetone	0.20	1.8	0.95	8.5
2-Propanol	0.20	2.6	1.2	16
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.12	1.0
Chloroform	0.10	0.92	0.16	1.5
Benzene	0.40	3.4	0.42	3.6
Toluene	0.10	0.93	0.48	4.5
Tetrachloroethene	0.10	1.2	4.0	47
m,p-Xylene	0.10	0.98	0.23	2.2

Client Sample ID: Miguels_Office B

Lab ID#: 1311142-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.7	36	240
Acetone	0.20	1.8	0.88	7.8
2-Propanol	0.20	2.6	1.1	14
Hexane	0.10	1.0	0.11	1.2
2-Butanone (Methyl Ethyl Ketone)	0.10	0.86	0.12	1.0
Chloroform	0.10	0.91	0.15	1.4
Benzene	0.40	3.4	0.49	4.2
Toluene	0.10	0.92	0.45	4.2
Tetrachloroethene	0.10	1.2	3.8	44
m,p-Xylene	0.10	0.98	0.21	2.1

Client Sample ID: MiguelsBanquetRoom

Lab ID#: 1311142-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	45	300
Acetone	0.20	1.8	1.1	9.6
2-Propanol	0.20	2.6	1.4	19
Hexane	0.10	1.0	0.10	1.0

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

Client Sample ID: MiguelsBanquetRoom
Lab ID#: 1311142-03A

2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.13	1.1
Chloroform	0.10	0.92	0.24	2.2
Toluene	0.10	0.93	0.50	4.7
Tetrachloroethene	0.10	1.2	3.9	45
m,p-Xylene	0.10	0.99	0.22	2.2

Client Sample ID: Miguels_Kitchen
Lab ID#: 1311142-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	69	470
Acetone	0.20	1.8	0.99	8.9
2-Propanol	0.20	2.6	1.8	24
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.16	1.4
Chloroform	0.10	0.92	0.16	1.5
Benzene	0.40	3.4	0.45	3.9
Toluene	0.10	0.93	0.51	4.7
Tetrachloroethene	0.10	1.2	2.5	29
m,p-Xylene	0.10	0.99	0.21	2.1

Client Sample ID: BambooPanda
Lab ID#: 1311142-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	280	1900
Acetone	0.20	1.8	2.1	18
2-Propanol	0.20	2.6	2.3	30
Hexane	0.10	1.0	0.13	1.3
Ethyl Acetate	0.40	3.5	1.1	9.8
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.27	2.4
Chloroform	0.10	0.92	0.88	8.1
Benzene	0.40	3.4	0.63	5.5
Heptane	0.10	1.2	0.13	1.5
Toluene	0.10	0.93	0.52	4.8

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

Client Sample ID: BambooPanda

Lab ID#: 1311142-05A

Tetrachloroethene	0.10	1.2	2.3	27
m,p-Xylene	0.10	0.99	0.17	1.7

Client Sample ID: FastFoto_Office

Lab ID#: 1311142-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	16	110
Acetone	0.20	1.8	3.5	31
2-Propanol	0.20	2.6	64	840
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.26	2.3
Chloroform	0.10	0.92	0.19	1.8
Cyclohexane	0.10	1.3	0.11	1.4
Benzene	0.40	3.4	0.49	4.2
Heptane	0.10	1.2	0.57	6.8
Toluene	0.10	0.93	2.9	27
Tetrachloroethene	0.10	1.2	4.0	47
Ethyl Benzene	0.10	1.0	0.17	1.7
m,p-Xylene	0.10	0.99	0.40	3.9
o-Xylene	0.10	1.1	0.14	1.4

Client Sample ID: Crawlspace_FF

Lab ID#: 1311142-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	15	100
Acetone	0.20	1.8	1.4	12
2-Propanol	0.20	2.7	7.0	93
Hexane	0.10	1.0	0.17	1.8
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.17	1.5
Chloroform	0.10	0.92	0.20	1.9
Heptane	0.10	1.2	0.16	1.9
Toluene	0.10	0.94	0.97	9.1
Tetrachloroethene	0.10	1.2	7.6	90

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

Client Sample ID: Crawlspace_FF

Lab ID#: 1311142-07A

m,p-Xylene	0.10	0.99	0.20	2.0
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Client Sample ID: Crawlspace_BP

Lab ID#: 1311142-08A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	31	210
Acetone	0.20	1.8	1.4	12
2-Propanol	0.20	2.7	5.6	75
Hexane	0.10	1.0	0.11	1.1
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.24	2.1
Chloroform	0.10	0.93	0.37	3.4
Benzene	0.40	3.5	0.49	4.3
Heptane	0.10	1.2	0.12	1.4
Toluene	0.10	0.94	0.61	5.8
Tetrachloroethene	0.10	1.2	15	180
m,p-Xylene	0.10	0.99	0.17	1.7



Client Sample ID: Miguels_Office A

Lab ID#: 1311142-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111907sim	Date of Collection:	11/6/13 11:19:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 12:07 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.7	39	260
Acetone	0.20	1.8	0.95	8.5
2-Propanol	0.20	2.6	1.2	16
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	0.12	1.0
Chloroform	0.10	0.92	0.16	1.5
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	0.42	3.6
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	0.48	4.5
Tetrachloroethene	0.10	1.2	4.0	47
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	0.23	2.2
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	1.3	Not Detected	Not Detected
Naphthalene	0.10	2.8	Not Detected	Not Detected

Temperature = 70F , duration time = 1484 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130



Client Sample ID: Miguels_Office B

Lab ID#: 1311142-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111908sim	Date of Collection:	11/6/13 11:23:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 12:30 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.7	36	240
Acetone	0.20	1.8	0.88	7.8
2-Propanol	0.20	2.6	1.1	14
Methyl tert-butyl ether	0.10	1.0	Not Detected	Not Detected
Hexane	0.10	1.0	0.11	1.2
Ethyl Acetate	0.40	3.5	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.86	0.12	1.0
Chloroform	0.10	0.91	0.15	1.4
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	0.49	4.2
1,2-Dichloroethane	0.10	0.89	Not Detected	Not Detected
Heptane	0.10	1.2	Not Detected	Not Detected
Trichloroethene	0.10	0.99	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.0	Not Detected	Not Detected
Toluene	0.10	0.92	0.45	4.2
Tetrachloroethene	0.10	1.2	3.8	44
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	0.21	2.1
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	1.3	Not Detected	Not Detected
Naphthalene	0.10	2.7	Not Detected	Not Detected

Temperature = 70F , duration time = 1493 minutes.

Container Type: Radiello 130 (Solvent)

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



Client Sample ID: MiguelsBanquetRoom

Lab ID#: 1311142-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111909sim	Date of Collection:	11/6/13 11:13:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 12:53 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	45	300
Acetone	0.20	1.8	1.1	9.6
2-Propanol	0.20	2.6	1.4	19
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.0	0.10	1.0
Ethyl Acetate	0.40	3.5	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.13	1.1
Chloroform	0.10	0.92	0.24	2.2
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	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.93	0.50	4.7
Tetrachloroethene	0.10	1.2	3.9	45
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	0.22	2.2
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

Temperature = 70F , duration time = 1476 minutes.

Container Type: Radiello 130 (Solvent)

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



Air Toxics

Client Sample ID: Miguels_Kitchen

Lab ID#: 1311142-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111910sim	Date of Collection:	11/6/13 11:17:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 01:16 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	69	470
Acetone	0.20	1.8	0.99	8.9
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	0.16	1.4
Chloroform	0.10	0.92	0.16	1.5
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	0.45	3.9
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	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.93	0.51	4.7
Tetrachloroethene	0.10	1.2	2.5	29
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	0.21	2.1
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

Temperature = 70F , duration time = 1477 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130



Air Toxics

Client Sample ID: BambooPanda

Lab ID#: 1311142-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111911sim	Date of Collection:	11/6/13 11:23:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 01:39 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	280	1900
Acetone	0.20	1.8	2.1	18
2-Propanol	0.20	2.6	2.3	30
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.0	0.13	1.3
Ethyl Acetate	0.40	3.5	1.1	9.8
2-Butanone (Methyl Ethyl Ketone)	0.10	0.87	0.27	2.4
Chloroform	0.10	0.92	0.88	8.1
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	3.4	0.63	5.5
1,2-Dichloroethane	0.10	0.90	Not Detected	Not Detected
Heptane	0.10	1.2	0.13	1.5
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.93	0.52	4.8
Tetrachloroethene	0.10	1.2	2.3	27
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	1.7
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

Temperature = 70F , duration time = 1478 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130



Air Toxics

Client Sample ID: FastFoto_Office

Lab ID#: 1311142-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111912sim	Date of Collection:	11/6/13 11:30:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 02:03 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	16	110
Acetone	0.20	1.8	3.5	31
2-Propanol	0.20	2.6	64	840
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	0.26	2.3
Chloroform	0.10	0.92	0.19	1.8
1,1,1-Trichloroethane	0.10	1.1	Not Detected	Not Detected
Cyclohexane	0.10	1.3	0.11	1.4
Carbon Tetrachloride	0.10	1.0	Not Detected	Not Detected
Benzene	0.40	3.4	0.49	4.2
1,2-Dichloroethane	0.10	0.90	Not Detected	Not Detected
Heptane	0.10	1.2	0.57	6.8
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.93	2.9	27
Tetrachloroethene	0.10	1.2	4.0	47
Chlorobenzene	0.10	1.0	Not Detected	Not Detected
Ethyl Benzene	0.10	1.0	0.17	1.7
m,p-Xylene	0.10	0.99	0.40	3.9
o-Xylene	0.10	1.1	0.14	1.4
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

Temperature = 70F , duration time = 1478 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

Client Sample ID: Crawlspace_FF

Lab ID#: 1311142-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111913sim	Date of Collection:	11/6/13 11:33:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 02:26 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	15	100
Acetone	0.20	1.8	1.4	12
2-Propanol	0.20	2.7	7.0	93
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	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.17	1.5
Chloroform	0.10	0.92	0.20	1.9
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	0.16	1.9
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.94	0.97	9.1
Tetrachloroethene	0.10	1.2	7.6	90
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	0.20	2.0
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

Temperature = 70F , duration time = 1470 minutes.

Container Type: Radiello 130 (Solvent)

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

Client Sample ID: Crawlspace_BP

Lab ID#: 1311142-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111914sim	Date of Collection:	11/6/13 11:32:00 AM
Dil. Factor:	1.00	Date of Analysis:	11/19/13 02:49 PM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.8	31	210
Acetone	0.20	1.8	1.4	12
2-Propanol	0.20	2.7	5.6	75
Methyl tert-butyl ether	0.10	1.1	Not Detected	Not Detected
Hexane	0.10	1.0	0.11	1.1
Ethyl Acetate	0.40	3.6	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.10	0.88	0.24	2.1
Chloroform	0.10	0.93	0.37	3.4
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	0.49	4.3
1,2-Dichloroethane	0.10	0.90	Not Detected	Not Detected
Heptane	0.10	1.2	0.12	1.4
Trichloroethene	0.10	1.0	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.1	Not Detected	Not Detected
Toluene	0.10	0.94	0.61	5.8
Tetrachloroethene	0.10	1.2	15	180
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	1.7
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

Temperature = 70F , duration time = 1466 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130

Client Sample ID: Lab Blank

Lab ID#: 1311142-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111905sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	11/19/13 10:41 AM
		Date of Extraction:	11/19/13

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	6.7	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	0.86	Not Detected	Not Detected
Chloroform	0.10	0.91	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	0.99	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	2.0	Not Detected	Not Detected
Toluene	0.10	0.92	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	1.3	Not Detected	Not Detected
Naphthalene	0.10	2.7	Not Detected	Not Detected

Temperature = 70F , duration time = 1493 minutes.

Container Type: Radiello 130 (Solvent)

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

Client Sample ID: LCS

Lab ID#: 1311142-10A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111903sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/19/13 09:52 AM
		Date of Extraction: 11/19/13

Compound	%Recovery	Method Limits
Ethanol	51	50-130
Acetone	78	70-130
2-Propanol	154 Q	50-130
Methyl tert-butyl ether	107	70-130
Hexane	126	70-130
Ethyl Acetate	92	70-130
2-Butanone (Methyl Ethyl Ketone)	87	70-130
Chloroform	92	70-130
1,1,1-Trichloroethane	99	70-130
Cyclohexane	97	70-130
Carbon Tetrachloride	107	70-130
Benzene	93	70-130
1,2-Dichloroethane	94	70-130
Heptane	114	70-130
Trichloroethene	102	70-130
4-Methyl-2-pentanone	101	70-130
Toluene	98	70-130
Tetrachloroethene	101	70-130
Chlorobenzene	90	70-130
Ethyl Benzene	104	70-130
m,p-Xylene	98	70-130
o-Xylene	84	70-130
Styrene	56	20-100
Propylbenzene	108	70-130
1,4-Dichlorobenzene	82	50-130
Naphthalene	6.8	5-100

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130

Client Sample ID: LCS D

Lab ID#: 1311142-10AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	10111904sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 11/19/13 10:16 AM
		Date of Extraction: 11/19/13

Compound	%Recovery	Method Limits
Ethanol	50	50-130
Acetone	77	70-130
2-Propanol	153 Q	50-130
Methyl tert-butyl ether	92	70-130
Hexane	123	70-130
Ethyl Acetate	91	70-130
2-Butanone (Methyl Ethyl Ketone)	85	70-130
Chloroform	95	70-130
1,1,1-Trichloroethane	87	70-130
Cyclohexane	102	70-130
Carbon Tetrachloride	114	70-130
Benzene	100	70-130
1,2-Dichloroethane	82	70-130
Heptane	114	70-130
Trichloroethene	102	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	97	70-130
Tetrachloroethene	97	70-130
Chlorobenzene	88	70-130
Ethyl Benzene	102	70-130
m,p-Xylene	95	70-130
o-Xylene	86	70-130
Styrene	59	20-100
Propylbenzene	103	70-130
1,4-Dichlorobenzene	74	50-130
Naphthalene	6.4	5-100

Q = Exceeds Quality Control limits.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	106	70-130

PASSIVE SAMPLE COLLECTION



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

Page 1 of 1

Project Manager Rodney Guritz
 Collected by: (Print and Sign) Heather Zuckey HZuckey
 Company Shannon & Wilson Email hgz@shannwil.com
 Address 2355 Hill Rd City Fairbanks State AK Zip 99709
 Phone 907-479-0600 Fax _____

Project Info:
 P.O. # _____
 Project # 31-1-11052-001
 Project Name Shoppers Forum

Turn Around Time:
 Normal
 Rush
 specify _____

Reporting Units:
 ppbmv
 ppbv
 7ug/m3
 mg/m3

Analysis Requested
VOCs (PCE, TCE)

Indoor Air Outdoor Air Workplace Monitoring Other (crawl space)

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
01A	Miguels-office A	874BP	11/5/13	10:35	11/6/13	11:19	VOCs (PCE, TCE)
02A	Miguels-office B	875BP	11/5/13	10:30	11/6/13	11:23	
03A	MiguelsBanquetroom	876BP	11/5/13	10:37	11/6/13	11:13	
04A	Miguels-Kitchen	877BP	11/5/13	10:40	11/6/13	11:17	
05A	Bamboopanda	878BP	11/5/13	10:45	11/6/13	11:23	
06A	FastFoto-office	879BP	11/5/13	10:52	11/6/13	11:30	
07A	CrawlSpace-FF	880BP	11/5/13	11:03	11/6/13	11:33	
08A	CrawlSpace-BP	108AX	11/5/13	11:06	11/6/13	11:32	

Received by: (signature) [Signature] Date/Time 11/8/13 09:46
 Received by: (signature) _____ Date/Time _____
 Received by: (signature) _____ Date/Time _____

Relinquished by: (signature) [Signature] Date/Time 11/6/13 1230
 Relinquished by: (signature) _____ Date/Time _____
 Relinquished by: (signature) _____ Date/Time _____

Sample Site Air Temperature: ~70°F

Notes:
*Sample vials are labeled w/ Field Sample ID.

Temp (°C) N/A Condition Good

Shipper Name Fedex Air Bill # _____
 Custody Seals Intact? Yes No None Work Order # 1311142

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

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 ($\mu\text{g}/\text{m}^3$)?

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 %)

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

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

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

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.?

Yes No

Comments:

c. Data quality or usability affected? Explain.

Comments:

4. Case Narrative

a. Present and understandable?

Yes No

Comments:

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

Yes No

Comments:

c. Were all corrective actions documented?

Yes No

Comments:

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 ($\mu\text{g}/\text{m}^3$)?

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 %)

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

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

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

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 ($\mu\text{g}/\text{m}^3$)?

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 %)

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

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

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

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.?

Samples were received in good condition.

Yes No

Comments:

c. Data quality or usability affected? Explain.

Comments:

Data quality and usability was 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:

LCS and LCSD failures are not listed in the case narrative. See LCS section for further detail.

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 ($\mu\text{g}/\text{m}^3$)?

Yes No

Comments:

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

PQLs (reporting limits) were compared to ADEC target levels. PQLs were below target levels for non-detect results, where applicable.

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?

N/A

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:

LCS and LCSD recoveries of 2-propanol are above laboratory limits. Project sample results for 2-propanol are considered biased high, flagged with a 'JH'.

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 laboratory analyzed LCS and LCSD samples; however, RPDs are not presented in the laboratory report. In our opinion, the results are considered precise.

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:

Yes

vi. Data quality or usability affected? Explain.

Comments:

Yes, see above.

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:

Field duplicates were Miguels_OfficeA/Miguels_OfficeB.

ii. Submitted blind to lab?

Yes No

Comments:

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

RPDs were below 25%, where calculable.

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

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

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.?

Samples were received in good condition.

Yes No

Comments:

c. Data quality or usability affected? Explain.

Comments:

Data quality and usability was 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:

LCS and LCSD failures are not listed in the case narrative. See LCS section for further detail.

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 ($\mu\text{g}/\text{m}^3$)?

Yes No

Comments:

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

PQLs (reporting limits) were compared to ADEC target levels. PQLs were below target levels for non-detect results, where applicable.

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?

N/A

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:

LCS and LCSD recoveries of 2-propanol are above laboratory limits. Project sample results for 2-propanol are considered biased high, flagged with a 'JH'.

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 laboratory analyzed LCS and LCSD samples; however, RPDs are not presented in the laboratory report. The lab typically reports RPD failures using qualifiers where they occur. In our opinion, the results are considered precise.

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:

Yes

vi. Data quality or usability affected? Explain.

Comments:

Yes, see above.

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:

No field-duplicate samples were submitted for this abbreviated sampling event.

ii. Submitted blind to lab?

Yes No

Comments:

N/A

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

N/A

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

Laboratory Data Review Checklist For Air Samples

Completed by:

Title:

Date:

CS Report Name:

Report Date:

Consultant Firm:

Laboratory Name:

Laboratory Report Number:

ADEC File Number:

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.?

Samples were received in good condition.

Yes No

Comments:

c. Data quality or usability affected? Explain.

Comments:

Data quality and usability was 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:

LCS and LCSD failures are not listed in the case narrative. See LCS section for further detail.

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 ($\mu\text{g}/\text{m}^3$)?

Yes No

Comments:

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

PQLs (reporting limits) were compared to ADEC target levels. PQLs were below target levels for non-detect results, where applicable.

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?

N/A

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:

LCS and LCSD recoveries of 2-propanol are above laboratory limits. Project sample results for 2-propanol are considered biased high, flagged with a 'JH'.

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 laboratory analyzed LCS and LCSD samples; however, RPDs are not presented in the laboratory report. The lab typically reports RPD failures using qualifiers where they occur. In our opinion, the results are considered precise.

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:

Yes

vi. Data quality or usability affected? Explain.

Comments:

Yes, see above.

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:

Field-duplicate sample pair Miguels_Office A/Miguels_Office B were collected and reported in this work order.

ii. Submitted blind to lab?

Yes No

Comments:

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

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

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