# PERFORMANCE MONITORING AND CONFIRMATORY SAMPLING RESULTS BUILDING 330D

VOC Source Assessment Hopewell Junction, NY IBM East Fishkill Facility

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December 22, 2011

Alex G. Czuhanich New York State Department of Environmental Conservation **Division of Environmental Remediation** Remedial Bureau E 625 Broadway, 12<sup>th</sup> Floor Albany, NY 12233-7017

Re: Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment **RFI Work Plan Implementation** IBM East Fishkill Facility, Hopewell Junction, New York EPA ID No. NYD000707901

Dear Mr. Czuhanich:

The enclosed report presents the results of performance monitoring and confirmatory sampling associated with the startup of a subslab vapor extraction system to address the presence of volatile organic compounds (VOCs) beneath an area of Building 330D at the IBM East Fishkill facility. The scope of this work and progress updates have been communicated to the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) (collectively, the Agencies) through regular correspondence and meetings.

If you wish to further discuss this report or have questions, please contact me at (845) 892-3176.

Sincerely David E. Speed, Ph.D

Systems and Technology Group International Business Machines Corporation

cc: H. Wilkie (NYSDEC) E. Dassatti (NYSDEC) N. Walz (NYSDOH) G. Litwin (NYSDOH) S. Hawkins (IBM)

# Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment TABLE OF CONTENTS

| 1.0 | INTRODUCTION  | 1 |
|-----|---|---|
| 2.0 | SUBSLAB VAPOR EXTRACTION SYSTEM PERFORMANCE                     | 2 |
| 2.1 | Indoor Air and Subslab Differential Pressure Monitoring Results | 2 |
| 2.2 | PCE Source Mass Removal and Treatment                           | 3 |
| 3.0 | BUILDING-WIDE CONFIRMATORY SAMPLING OF JULY 2011                | 5 |
| 3.1 | HVAC Settings During Sampling                                   | 6 |
| 3.2 | 2 Sample Collection and Analysis                                | 6 |
| 3.3 | Summary of Field Observations                                   | 7 |
| 3.4 | Summary of Analytical Data                                      | 7 |
| 4.0 | QUALITY ASSURANCE/QUALITY CONTROL                               | 8 |
| 5.0 | SUMMARY   | 9 |

## TABLES

| Table 1 | 80K Area Sampling Results                            |
|---------|--|
| Table 2 | Summary of July 2011 Confirmatory Sample Information |
| Table 3 | July 2011 Confirmatory Sampling Results              |

## FIGURES

- Figure 1 Locus Plan
- Figure 2 Building Location Plan
- Figure 3 Subslab Pressure Response to Vapor Extraction October 2010
- Figure 4 Subslab Pressure Response to Vapor Extraction April 2011
- Figure 5 80K Area Pre- and Post-Mitigation Indoor Air PCE Results
- Figure 6 Building 330D Confirmatory Sampling Results

## APPENDICES

- Appendix A Limitations
- Appendix B Photograph Log
- Appendix C HVAC Operations During Sampling
- Appendix D Analytical Laboratory Data Reports (Enclosed on CD only)
- Appendix E Data Validation Report

## **1.0 INTRODUCTION**

This report presents the results of performance monitoring and confirmatory sampling associated with source mitigation measures to address the presence of volatile organic compounds (VOCs), principally tetrachloroethene (PCE), beneath an area of Building 330D at the IBM East Fishkill facility. A Site locus plan is provided as Figure 1, and the Building 330D location on the Site is shown on Figure 2.

As previously documented in a December 2008 report<sup>1</sup>, PCE was found in the indoor air within certain areas of Building 330D at concentrations that could not be explained by present occupational use and storage, nor by ambient (outdoor) air conditions. The PCE presence in indoor air was centered on, and found to originate from a source area beneath, the 80K clean room manufacturing area at the north end of the building (80K area).

As described in the December 2008 report, the PCE presence in indoor air was associated with PCE mass found beneath the floor slab of the 80K area, as evidenced by subslab PCE vapor concentrations indicative of residual solvent presence. IBM implemented measures to reduce PCE migration from the subslab source to indoor air, including grouting and sealing portions of the heating, ventilating, and air conditioning (HVAC) system in contact with the floor slab and adjusting HVAC operations in the 80K area. These measures successfully reduced indoor PCE concentrations.

Further, IBM installed a subslab vapor extraction system for the 80K area as a means of VOC source reduction, and conducted a performance assessment of the system, including building-wide confirmatory sampling following startup of the system. This report documents the results of those actions.

Sanborn, Head Engineering P.C. (Sanborn Head), with assistance from IBM personnel, conducted this performance assessment and sampling work consistent with the objectives and procedures described in IBM's Resource Conservation and Recovery Act (RCRA) Facility Investigation Work Plan (the Work Plan)<sup>2</sup>, approved by New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) (collectively, the Agencies). The assessment and this report are subject to the standard limitations of this type of work, as provided in Appendix A.

This report is organized into the following sections:

**Section 2** presents an overview of the subslab vapor extraction system and summarizes the performance monitoring results focused on the 80K area of Building 330D.

**Section 3** describes the field activities and results of building-wide confirmatory sampling in Building 330D.

<sup>&</sup>lt;sup>1</sup> IBM Corporation and Sanborn, Head Engineering P.C., *Report of Findings, Building 330D VOC Source Investigation and Mitigation, IBM East Fishkill Facility, Hopewell Junction, New York*, December 24, 2008.

<sup>&</sup>lt;sup>2</sup> IBM Corporation and Sanborn Head Engineering, P.C., *Work Plan, RCRA Facility Investigation (RFI), VOC Source Assessment, IBM East Fishkill Facility, Hopewell Junction, New York, June 15, 2009.* 

**Section 4** presents a summary of the quality assurance/quality control review associated with the confirmatory sampling results.

## 2.0 SUBSLAB VAPOR EXTRACTION SYSTEM PERFORMANCE

A subslab vapor extraction and treatment system for the 80K manufacturing area of Building 330D was started up on October 6, 2010. The system was intended to address the confirmed source of PCE identified below the building slab in the 80K area. The design basis for the system was communicated to the Agencies in an April 28, 2010 letter from IBM. The Agencies approved the design basis in a May 19, 2010 letter to IBM.

The system consists of five subslab vapor extraction ports (designated EP-1 through EP-5, shown on Figures 3 and 4) installed in the 80K area. The extraction ports are connected to a vacuum blower located on a skid outside the northwest corner of Building 330D (south of Tower 7) within an existing mechanical equipment area (see Exhibit 1 below). The subslab vapor extracted by the blower is treated through vapor-phase granular activated carbon (GAC) units connected in a lead-lag series configuration. Treated vapor is discharged to a process exhaust stack located outside Tower 7.

Exhibit 1: Vacuum blower skid - 80K area subslab vapor extraction system



## 2.1 Indoor Air and Subslab Differential Pressure Monitoring Results

Since the startup of the subslab vapor extraction system in October 2010, PCE has not been detected in three rounds of indoor air sampling in the 80K area conducted in December 2010, May 2011, and July 2011. Figure 5 shows the PCE indoor air levels before and after the startup of the vapor extraction system, including the three post-startup sampling

rounds. Table 1 provides a summary of the 80K area indoor air sampling data for VOCs, including pre- and post-mitigation data.

The system has also achieved subslab depressurization for the 80K area as indicated by monitoring events conducted shortly after startup in October 2010 and again in April 2011. Figure 3 shows the differential pressure between the subslab and indoor air recorded in October 2010, including the inferred extent of depressurization as defined by a pressure differential isopleth of at least 0.02 inches water column (in. wc), which is equivalent to 5 Pascals. The United States Environmental Protection Agency's (USEPA) guidance<sup>3</sup> considers this value or greater as indication that vapor extraction has influence at a given subslab monitoring location; however, recent reports suggests that 5 Pascals is conservative and any measureable depressurization (i.e., 1 Pascal, the approximate accuracy limit of digital manometers) should be sufficient to intercept subslab vapor. Figure 3 also shows the applied vacuum, airflow, and photo-ionization detector (PID) screening results of a vapor sample drawn from each extraction port riser.

Figure 4 shows the subslab depressurization field in April 2011 shortly after the blower speed was reduced. The blower was designed with extra capacity and a variable frequency drive to allow for adjustment of applied vacuum and air flow. The motor operating frequency was reduced slightly from 50 Hz to 45 Hz to bring the combination of vacuum and airflow more within the appropriate operating range of the blower and prevent potential for motor overheating at the previous operating condition. The depressurization field after the operating adjustment compares favorably to the October 2010 results, and as indicated above, subsequent indoor air sampling in the 80K area in May 2011 and July 2011 did not indicate PCE detections.

## 2.2 PCE Source Mass Removal and Treatment

The subslab vapor extraction system has successfully removed PCE source mass from below the floor slab. To estimate the PCE mass removed by the system and monitor the performance of the GAC treatment system, IBM has routinely sampled at the influent, midpoint, and effluent of the GAC vessels approximately weekly. These process vapor samples have been collected using charcoal tubes and analyzed by Columbia Analytical Services of Rochester, NY in accordance with USEPA Method 18. IBM plans to continue to conduct a routine sampling program to monitor PCE source mass recovery and the performance of the GAC treatment system.

Exhibit 2 below shows the PCE concentrations versus time at the influent, midpoint, and effluent of the GAC units, from system startup through the end of August 2011. The PCE concentration in the extracted vapor samples (GAC influent) exhibit a gradual decline over time. The effluent PCE concentrations were consistently below the laboratory reporting limit, which demonstrates the effectiveness of the GAC treatment system. The midpoint PCE concentrations were also below the laboratory reporting limit until about mid-July 2011, when breakthrough of PCE from the lead GAC vessel is observed. Change-out of the

<sup>&</sup>lt;sup>3</sup> USEPA, Engineering Issue: Indoor Air Vapor Intrusion Mitigation Approaches, EPA/600/R-08-115, October 2008

lead GAC vessel is planned before the midpoint concentration approaches the influent concentration.



Exhibit 3 below shows the PCE mass removal rate and cumulative mass removed, from system startup through the end of August 2011. Approximately 1,800 lbs of PCE have been removed by the system over the period shown.<sup>4</sup> As expected, the mass removal rate shows a gradual decline similar to the PCE influent concentration. A step decrease is observed at the end of April 2011 when the blower speed, and hence vapor flow rate, was reduced as described above, while still maintaining adequate subslab depressurization.

<sup>&</sup>lt;sup>4</sup> Mass removed is calculated based on the influent PCE concentration, flow rate, and hours of operation.



## 3.0 BUILDING-WIDE CONFIRMATORY SAMPLING OF JULY 2011

Indoor and ambient outdoor air samples were collected on July 26, 2011 at the locations shown on Figure 6. Indoor air samples were collected from the first floor of Building 330D, which is constructed slab-on-grade. Two ambient outdoor air samples were collected at HVAC intakes serving the building, within the intake plenums of two air handling units. For quality assurance/quality control (QA/QC) purposes, two field blanks and two field duplicate samples were also collected.<sup>5</sup> Information regarding the sample locations is summarized in the table provided below as Exhibit 4.

| Building | General Building  | Areas Targeted for   | # of Samples     |
|----------|-------------------|----------------------|------------------|
|          | Uses              | Sampling             |                  |
| 330D     | Manufacturing,    | Active and vacant    | (24) indoor, (2) |
|          | laboratories, and | clean room           | ambient outdoor  |
|          | offices.          | manufacturing areas, |                  |
|          |                   | laboratories,        |                  |
|          |                   | hallways adjacent to |                  |
|          |                   | offices.             |                  |

Exhibit 4: Summary of Sample Locations

<sup>5</sup> A field blank is a canister that is certified clean by the laboratory and filled in the field with ultra-high purity nitrogen. The purpose of a field blank is to assess for the presence of target compounds that could be due to equipment preparation and transportation of equipment to and from the field. A field duplicate sample is collected at the same time and location as another sample. Collection and analysis of field duplicate samples is intended to assess the precision (repeatability) of the sampling and analysis process. The field blank and duplicate samples are submitted to the analytical laboratory for analysis with the other samples.

During sampling, Sanborn Head personnel observed the vicinity of each location for general use (e.g., clean room manufacturing, offices), floor condition (e.g., sumps, trenches, drains, cracks, staining), chemicals used/stored, and other features. Photographs of sample locations are provided in Appendix B, and field observations for each sample location are provided in Table 2.

## 3.1 HVAC Settings During Sampling

Building 330D is divided into multiple HVAC zones. The first floor HVAC zones are shown on Figure 6. As presented on Table 2 and Figure 6, Sanborn Head collected ambient outdoor air samples proximate to air intakes for zones served by AC-15 and MAU-72.

The air handling units (AHUs) for Building 330D are equipped with outdoor air intake dampers that either remain in a fixed position, or automatically modulate position to vary outdoor air intake to achieve set points for air temperature or relative humidity. For the AHUs with modulating outdoor air dampers, the outdoor air intake and air changes per hour (ACH) varies across a defined range, for the zones served by these units. To obtain samples under conservative HVAC operating conditions (i.e., the low end of the ACH range), the outdoor air dampers on the AHUs that normally modulate were set at their minimum open position and not allowed to vary. For the AHUs whose outdoor air dampers do not modulate, these dampers were not changed from their fixed position.

Table C-1 provided in Appendix C summarizes the outdoor air damper settings of the AHUs during sampling. Unit MAU-79, which serves a vacant portion of the building, was not operational during the sampling period.

Where adjusted, AHU outdoor air dampers were set at minimum positions at least 24 hours prior to sampling to allow equilibration prior to sample collection.

The outdoor air damper actuator was accessible for only one unit (AC-71). Sanborn Head installed nylon wire ties and masking tape on this unit, which were designed to break if the damper position changed. As summarized in Table C-2, this action demonstrated that the damper position remained unchanged.

The remaining units had inaccessible outdoor air dampers. On these units, IBM locked the damper positions through the HVAC control system, and Sanborn Head periodically visually observed the damper positions and also monitored the HVAC control system readout during sampling for any indication of position change. The damper positions for all units remained unchanged during the sampling period. Table C-2 in Appendix C presents observations of AHU damper positions during the sampling event.

## 3.2 Sample Collection and Analysis

Samples were collected as 8-hour, time-integrated samples using Summa® canisters (6 liters) in accordance with the procedures described in the approved Work Plan, Appendix A.1. Sample canisters were deployed approximately simultaneously and were set at heights ranging from 3.5 to 5.5 feet above the floor. The samples were submitted to Air

Toxics Limited (ATL) of Folsom, California, a New York-certified laboratory<sup>6</sup> for laboratory analysis of the site-specific list of 22 VOCs by United States Environmental Protection Agency (USEPA) Method TO-15 Hi\Lo<sup>7</sup>. Additional sampling information, including sample collection times, initial and final canister pressures, canister identification numbers, and field screening values, is provided in Table 2.

Analytical data were provided to New Environmental Horizons (NEH) for independent, third-party, data validation evaluation. NEH's data validation report is included as Appendix E. NEH found the data to be useable in accordance with the project data quality objectives (DQOs), subject to a few qualifications discussed in Section 4.

#### 3.3 Summary of Field Observations

Sanborn Head's field observations during sampling related to building features and chemical use/presence are summarized below, and in Table 2, to provide context for the results. A summary of validated analytical results is provided in Table 3. The data for compounds detected above laboratory reporting limits are depicted on Figure 6. Analytical laboratory data reports and third-party data validation reports are provided as Appendices D and E, respectively.

The first floor of Building 330D houses clean room manufacturing areas, laboratories, and offices. The offices are located primarily around the perimeter of the first floor. The 80K clean room manufacturing area is located at the north end of the first floor, and the central portion of the first floor contains mainly vacant former manufacturing areas.

Solvents have been historically stored and used in parts of the building. Historically, several solvent-related Solid Waste Management Unit (SWMU) accumulation areas were located in and around Building 330D (see Figure 6). PCE was historically used in bulk quantities as a solvent for manufacturing operations, but has not been used or stored since 1997. No bulk storage or use of PCE or related chlorinated ethenes was observed during our sampling program. A groundwater monitoring well, MW-572, located inside the building near column BB-39 has historically contained separate-phase PCE. Sample locations included the room containing MW-572 and areas near former below-grade solvent lines and other utility floor penetrations.

#### 3.4 Summary of Analytical Data

As shown on Figure 6 and summarized in Table 3, the following analytes were detected in the indoor air samples at concentrations similar to, or only slightly greater than, those recorded for concurrent ambient outdoor air samples: carbon tetrachloride, methylene chloride, acetone, toluene, Freon 11, and Freon 12; however, these analytes were detected at concentrations typically on the order of a few micrograms per cubic meter or less, with a maximum of 14 micrograms per cubic meter ( $\mu$ g/m<sup>3</sup>).

<sup>&</sup>lt;sup>6</sup> New York - National Environmental Laboratory Accreditation Program (NELAC) Number 11291

<sup>&</sup>lt;sup>7</sup> Samples were analyzed using gas chromatograph/mass spectrometry (GC/MS) techniques. Trichloroethene (TCE), vinyl chloride, and carbon tetrachloride were also analyzed in Selective Ion Monitoring (SIM) mode.

PCE was detected in 16 out of 26 indoor air samples at concentrations ranging from 1.2 to  $30 \ \mu\text{g/m}^3$ , with a median concentration of 4.1  $\mu\text{g/m}^3$  among the detections. The highest PCE level was observed in a sample (IA BB-37) from the vacant former manufacturing area where the HVAC system (AC-79) is shut down. The sample in the room containing MW-572 (IA BB-39) exhibited 4.2  $\mu\text{g/m}^3$  of PCE. Consistent with the December 2010 and May 2011 sampling rounds, PCE was not detected in any of the six indoor air samples collected from the 80K area.

Trichloroethene (TCE) was detected at 0.43  $\mu$ g/m<sup>3</sup> in the sample from the vacant former manufacturing areas that exhibited the highest PCE concentration; otherwise, TCE was not detected in any of the other samples. In addition, m,p-xylene was detected in two indoor air samples at a concentration less than 1  $\mu$ g/m<sup>3</sup>.

Vinyl chloride and benzene were detected in one outdoor ambient air sample at concentrations less than  $1 \mu g/m^3$ , but were not detected in any of the indoor air samples. As further discussed in Section 4.0, vinyl chloride was also detected in one of the field blank samples collected during this sampling event.

## 4.0 QUALITY ASSURANCE/QUALITY CONTROL

Analytical data from the July 2011 confirmatory sampling round were provided to NEH for third-party independent data validation. NEH's data validation report is presented as Appendix E.

NEH's evaluation included a review of sample data, including raw data, to verify that the laboratory performed the analyses in compliance with the analytical methods required, laboratory procedures, consistency with the Work Plan QA/QC requirements, and USEPA and NYDEC guidelines for data validation of organic data. NEH prepared a Data Usability Report that summarized the quality control (QC) issues that required action (qualification of data) and compared QA/QC criteria to the DQOs described in the approved Work Plan.

In summary and as stated above, NEH found the data to be useable in accordance with the project data quality objectives subject to a few minor qualifications. The following QA/QC considerations were noted by NEH:

- The chain of custody (COC) provided to the analytical laboratory incorrectly reported the canister serial identification number for one sample (IA BG-38). Canister certifications provided by the analytical laboratory indicated the correct canister number, which was used by the laboratory for association with the sample.
- Toluene in sample IA BB-37 was reported at a value below the sample-specific reporting limit and flagged as an estimated value by the analytical laboratory. NEH qualified this result as estimated (i.e., "J" flagged), with an indeterminate bias. The reported concentration of toluene was 0.60  $\mu$ g/m<sup>3</sup> compared to a reporting limit of 0.61  $\mu$ g/m<sup>3</sup>.

- Although 1,2-dichlorobenzene was not recorded above laboratory reporting limits in any of the samples, results for 20 samples were reported by the laboratory outside the initial calibration criteria. NEH qualified these non-detect results as estimated (i.e. "J" flagged), with an indeterminate bias. The laboratory reporting limits (including Jflagged results) were all below 1 µg/m<sup>3</sup>.
- Vinyl chloride was detected in a field blank sample (FB-01) at a concentration of 0.17 µg/m<sup>3</sup>. As a result, the vinyl chloride result in ambient outdoor air sample AA AC-15 was flagged with "EB" (equipment blank) with a potential for high bias.<sup>8</sup> While vinyl chloride was detected in the AA AC-15 ambient air sample, the concentration was only 0.83 µg/m<sup>3</sup>. Vinyl chloride was not detected in any other ambient air or indoor air samples.

In summary and as stated above, the data were found to be useable in accordance with the project data quality objectives and subject to only minor qualifications.

## 5.0 SUMMARY

The installation and operation of the subslab vapor extraction system in the 80K area of Building 330D is successfully meeting its design objectives of reducing PCE source mass below the floor slab and preventing PCE vapor migration. Since the startup of the vapor extraction system, PCE has not been detected in three separate indoor air sampling rounds within the 80K area, while more than 1,800 pounds of residual PCE source mass have been removed.

Building-wide indoor air sampling indicates that the operation of the subslab vapor extraction system in the 80K area has also improved air quality throughout the building. By intercepting this mass at the source, indoor PCE concentration reductions have been observed beyond the 80K area.

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<sup>&</sup>lt;sup>8</sup> The data validator determined that the sample reporting limits are likely to be biased high relative to the true value due to the presence of the analyte in the blank sample.

TABLES

#### TABLE 1 80K Area Sampling Results Performance Monitoring and Confirmatory Sampling Results **Building 330D VOC Source Assessment** IBM East Fishkill Facility Hopewell Junction, New York

|   |        |            |                  |           |        |           |        |           |         |           |         | Co        | ncentratio | ons in µg, | /m <sup>3</sup> |           |         |           |        |           |        |           |         |           |                         |
|---|--------|------------|------------------|-----------|--------|-----------|--------|-----------|---------|-----------|---------|-----------|------------|------------|-----------------|-----------|---------|-----------|--------|-----------|--------|-----------|---------|-----------|-------------------------|
| Analyte Name                                      |        | Am<br>Outd | bient<br>oor Air |           |        |           |        |           |         |           |         |           |            |            | Indo            | or Air    |         |           |        |           |        |           |         |           |                         |
| Analyte Name                                      |        | AA M       | AU-72            |           |        |           |        | IA E      | BE-23   |           |         |           | IA B       | F-23       |                 |           |         |           |        | IA E      | 3F-24  |           |         |           |                         |
|   | 05/    | 12/11      | 07/              | 26/11     | 11/    | 20/08     | 12/0   | 02/10     | 05/     | /12/11    | 07/     | 26/11     | 07/2       | 1/08       | 06/2            | 18/08     | 06/18/  | /08 Dup.  | 12/    | /02/10    | 05/    | 12/11     | 07/     | 26/11     | 07/26/11 Dup.           |
|   | Result | Qualifier  | Result           | Qualifier | Result | Qualifier | Result | Qualifier | Result  | Qualifier | Result  | Qualifier | Result     | Qualifier  | Result          | Qualifier | Result  | Qualifier | Result | Qualifier | Result | Qualifier | Result  | Qualifier | <b>Result</b> Qualifier |
| Tetrachloroethene (PCE)                           | <1.2   | U          | <1.1             | U         | 9.8    |           | <1.1   | U         | <1.1    | U         | <1.0    | U         | 80         |            | 240             |           | 250     |           | <1.1   | U         | <1.0   | U         | <1.1    | U         | <1.1 U                  |
| Trichloroethene (TCE)                             | < 0.19 | U          | < 0.17           | U         | < 0.90 | U         | < 0.18 | U         | < 0.18  | U         | < 0.16  | U         | 0.30       |            | 0.42            |           | < 0.40  | U         | <0.18  | U         | < 0.17 | U         | < 0.17  | U         | <0.18 U                 |
| cis-1,2-Dichloroethene (cDCE)                     | < 0.71 | U          | < 0.64           | U         | < 0.67 | U         | < 0.67 | U         | < 0.65  | U         | <0.61   | U         | <0.16      | U          | < 0.21          | U         | < 0.30  | U         | <0.67  | U         | <0.61  | U         | < 0.63  | U         | <0.65 U                 |
| 1,1-Dichloroethene (DCE)                          | < 0.71 | U          | < 0.64           | U         | < 0.67 | U         | <0.67  | U         | < 0.65  | U         | <0.61   | U         | <0.082     | U          | < 0.11          | U         | < 0.15  | U         | <0.67  | U         | <0.61  | U         | < 0.63  | U         | <0.65 U                 |
| Vinyl chloride (VC)                               | 0.10   |            | < 0.041          | U         | < 0.43 | U         | 1.5    |           | < 0.042 | U         | < 0.039 | U         | < 0.053    | U          | < 0.068         | U         | < 0.096 | U         | 1.5    |           | 0.062  |           | < 0.041 | U         | <0.042 U                |
| 1,1,1-Trichloroethane (TCA)                       | <0.98  | U          | <0.88            | U         | < 0.92 | U         | <0.92  | U         | <0.89   | U         | <0.83   | U         | <0.22      | U          | < 0.29          | U         | < 0.41  | U         | <0.92  | U         | < 0.84 | U         | < 0.87  | U         | <0.90 U                 |
| Carbon tetrachloride                              | 0.55   |            | 0.43             |           |        |           | 0.36   |           | 0.53    |           | 0.43    |           |            |            |                 |           |         |           | 0.33   |           | 0.56   |           | 0.48    |           | 0.48                    |
| Methylene chloride (MeCI)                         | <1.2   | U          | <1.1             | U         | <1.2   | U         | <1.2   | U         | <1.1    | U         | <1.1    | U         | <1.4       | U          | <1.9            | U         | <2.6    | U         | 1.8    | В         | <1.1   | U         | <1.1    | U         | <1.1 U                  |
| Chlorobenzene                                     | < 0.82 | U          | < 0.74           | U         | < 0.77 | U         | < 0.77 | U         | < 0.76  | U         | < 0.70  | U         | <0.19      | U          | < 0.25          | U         | < 0.34  | U         | < 0.77 | U         | < 0.71 | U         | < 0.74  | U         | <0.76 U                 |
| 1,2,4-Trichlorobenzene                            | <6.6   | U          | <6.0             | U         | <6.2   | U         | <6.2   | U         | <6.1    | U         | <5.7    | U         | <1.5       | U          | <2.0            | U         | <2.8    | U         | <6.2   | U         | <5.8   | U         | <5.9    | U         | <6.1 U                  |
| 1,2-Dichlorobenzene                               | <1.1   | U          | < 0.97           | UJ        | <1.0   | U         | <1.0   | U         | <0.99   | U         | <0.92   | U         | <0.25      | U          | < 0.32          | U         | < 0.45  | U         | <1.0   | U         | <0.93  | U         | <0.96   | U         | <0.99 U                 |
| 1,3-Dichlorobenzene                               | <1.1   | U          | < 0.97           | U         | <1.0   | U         | <1.0   | U         | <0.99   | U         | <0.92   | U         | <0.25      | U          | < 0.32          | U         | < 0.45  | U         | <1.0   | U         | <0.93  | U         | <0.96   | U         | <0.99 U                 |
| 1,4-Dichlorobenzene                               | <1.1   | U          | < 0.97           | U         | <1.0   | U         | <1.0   | U         | <0.99   | U         | <0.92   | U         | <0.25      | U          | 1.3             |           | < 0.45  | U         | <1.0   | U         | <0.93  | U         | <0.96   | U         | <0.99 U                 |
| Acetone   | 6.2    |            | 6.0              |           | 9.3    |           | 9.6    |           | 9.2     |           | 7.4     |           | 12         |            | 5.9             |           | 7.9     |           | 9.8    |           | 8.6    |           | 7.3     |           | 7.3                     |
| Benzene   | < 0.57 | U          | < 0.52           | U         | 0.66   |           | 0.77   |           | < 0.52  | U         | <0.49   | U         | < 0.33     | U          | < 0.43          | U         | <0.60   | U         | 0.98   |           | < 0.50 | U         | < 0.51  | U         | <0.53 U                 |
| Ethylbenzene                                      | <0.78  | U          | < 0.70           | U         | 0.95   |           | < 0.73 | U         | < 0.71  | U         | <0.66   | U         | < 0.18     | U          | 0.40            |           | < 0.32  | U         | < 0.73 | U         | <0.67  | U         | <0.69   | U         | <0.72 U                 |
| m,p-Xylene  | <0.78  | U          | < 0.70           | U         | 3.6    |           | <0.73  | U         | < 0.71  | U         | <0.66   | U         | < 0.36     | U          | 1.3             |           | < 0.65  | U         | < 0.73 | U         | <0.67  | U         | <0.69   | U         | <0.72 U                 |
| o-Xylene  | <0.78  | U          | < 0.70           | U         | 1.6    |           | <0.73  | U         | < 0.71  | U         | <0.66   | U         | <0.18      | U          | 0.46            | J         | < 0.32  | U         | <0.73  | U         | <0.67  | U         | <0.69   | U         | <0.72 U                 |
| Toluene   | < 0.67 | U          | < 0.61           | U         | 3.5    |           | <0.63  | U         | < 0.62  | U         | <0.58   | U         | 0.84       |            | 2.2             |           | 1.1     |           | 0.81   |           | <0.58  | U         | <0.60   | U         | <0.62 U                 |
| Trichlorofluoromethane (Freon 11)                 | 2.2    | J          | 1.2              |           | 2.0    |           | 1.7    |           | 2.2     | J         | 1.5     |           | 1.2        |            | 1.4             |           | 1.4     |           | 1.5    |           | 2.3    | J         | 1.5     |           | 1.5                     |
| Dichlorodifluoromethane (Freon 12)                | 2.9    |            | 2.5              |           | 3.2    |           | 2.1    |           | 2.7     |           | 2.3     |           | 2.4        |            | 2.5             |           | 2.5     |           | 2.1    |           | 3.0    |           | 2.4     |           | 2.5                     |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | <1.4   | U          | <1.2             | U         | <1.3   | U         | <1.3   | U         | <1.2    | U         | <1.2    | U         | 0.76       |            | 0.72            |           | 0.70    |           | <1.3   | U         | <1.2   | U         | <1.2    | U         | <1.3 U                  |

#### Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated using 6-liter summa canisters equipped with 8-hour flow controllers.

2. Sample analysis was completed by Air Toxics Limited (ATL) of Folsom, California. Samples collected in 2011 and 2010 were analyzed using United States Environmental Protection Agency (USEPA) Method TO-15 (Hi/Lo). Samples collected in 2008 were analyzed using either method T0-15, T0-15 in Selective Ion Monitoring (SIM) mode, or T0-15 with tentatively identified compounds (TICs). Refer to the analytical laboratory reports in Appendix D for further information.

3. Sample designations among the various sampling rounds were standardized for presentation purposes of this table.

4. "<" indicates a non-detection at the reporting limit shown.

5. New Environmental Horizons, Inc (NEH) performed an independent validation of the analytical data from the July 2011 sampling round, as described in their Data Usability Report, dated September 2, 2011 and provided as Appendix E. All results were considered acceptable. Refer to Table 3 for additional notes regarding biases of qualified data.

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6. An independent validation was not performed for the analytical data collected in 2008, 2010, and May 2011. The following qualifiers for these sampling rounds were assigned by the analytical laboratory: "U" - The compound was analyzed for, but was not detected. The associated numerical value is the sample-specific reporting limit. "J" - Indicates Result is an estimated value.

"B" - indicates the compound was present in the laboratory blank greater than the reporting limit.

7. Bold values indicate the analyte was detected above reporting limits.

8. Gray shading indicates pre-mitigation results.

Yellow shading indicates preliminary mitigation results (grouting and sealing).

Blue shading indicates post-mitigation results (HVAC system modifications).

Green shading indicates results after installation and operation of the sub-slab vapor extraction system.

#### TABLE 1 80K Area Sampling Results Performance Monitoring and Confirmatory Sampling Results **Building 330D VOC Source Assessment** IBM East Fishkill Facility Hopewell Junction, New York

|   |        |           |        |           |         |           |         |           |        |           | Co     | ncentrati | ons in µg, | /m <sup>3</sup> |         |           |        |           |        |           |         |           |         | -         |
|---|--------|-----------|--------|-----------|---------|-----------|---------|-----------|--------|-----------|--------|-----------|------------|-----------------|---------|-----------|--------|-----------|--------|-----------|---------|-----------|---------|-----------|
| Analyta Nama                                      |        |           |        |           |         |           |         |           |        |           |        | Indo      | or Air     |                 |         |           |        |           |        |           |         |           |         |           |
| Analyte Name                                      | 1      |           |        | IA B      | G-22    |           |         |           |        |           |        | IA B      | G-23       |                 |         |           |        |           |        | IA B      | G-24    |           |         |           |
|   | 11/2   | 20/08     | 12/    | 02/10     | 05/2    | 12/11     | 07/     | 26/11     | 11/    | 20/08     | 12/    | 02/10     | 05/1       | 2/11            | 07/     | 26/11     | 11/    | 20/08     | 12/0   | 02/10     | 05/1    | .2/11     | 07/1    | 26/11     |
|   | Result | Qualifier | Result | Qualifier | Result  | Qualifier | Result  | Qualifier | Result | Qualifier | Result | Qualifier | Result     | Qualifier       | Result  | Qualifier | Result | Qualifier | Result | Qualifier | Result  | Qualifier | Result  | Qualifier |
| Tetrachloroethene (PCE)                           | 9.8    |           | <1.1   | U         | <1.1    | U         | <1.1    | U         | 24     |           | <1.1   | U         | <1.2       | U               | <1.1    | U         | 12     |           | <1.1   | U         | <0.98   | U         | <1.1    | U         |
| Trichloroethene (TCE)                             | <0.90  | U         | <0.18  | U         | <0.18   | U         | < 0.17  | U         | < 0.92 | U         | <0.18  | U         | <0.18      | U               | < 0.17  | U         | < 0.92 | U         | <0.18  | U         | < 0.15  | U         | <0.18   | U         |
| cis-1,2-Dichloroethene (cDCE)                     | <0.67  | U         | <0.67  | U         | <0.65   | U         | < 0.63  | U         | <0.68  | U         | <0.67  | U         | <0.68      | U               | < 0.63  | U         | <0.68  | U         | <0.65  | U         | < 0.57  | U         | <0.66   | U         |
| 1,1-Dichloroethene (DCE)                          | < 0.67 | U         | <0.67  | U         | < 0.65  | U         | < 0.63  | U         | <0.68  | U         | < 0.67 | U         | <0.68      | U               | < 0.63  | U         | <0.68  | U         | <0.65  | U         | < 0.57  | U         | <0.66   | U         |
| Vinyl chloride (VC)                               | < 0.43 | U         | 1.3    |           | < 0.042 | U         | < 0.041 | U         | < 0.44 | U         | 1.2    |           | < 0.044    | U               | < 0.040 | U         | < 0.44 | U         | 0.69   |           | < 0.037 | U         | < 0.042 | U         |
| 1,1,1-Trichloroethane (TCA)                       | < 0.92 | U         | <0.92  | U         | <0.89   | U         | < 0.87  | U         | < 0.93 | U         | <0.92  | U         | <0.93      | U               | <0.86   | U         | < 0.93 | U         | <0.89  | U         | < 0.78  | U         | <0.90   | U         |
| Carbon tetrachloride                              |        |           | 0.37   |           | 0.58    |           | 0.20    |           |        |           | 0.36   |           | 0.41       |                 | 0.36    |           |        |           | 0.35   |           | 0.58    |           | 0.34    |           |
| Methylene chloride (MeCI)                         | <1.2   | U         | <1.2   | U         | <1.1    | U         | 1.4     |           | <1.2   | U         | <1.2   | U         | <1.2       | U               | <1.1    | U         | <1.2   | U         | <1.1   | U         | <1.0    | U         | <1.2    | U         |
| Chlorobenzene                                     | < 0.77 | U         | < 0.77 | U         | <0.76   | U         | < 0.74  | U         | < 0.79 | U         | < 0.77 | U         | <0.79      | U               | < 0.73  | U         | < 0.79 | U         | <0.76  | U         | <0.66   | U         | <0.76   | U         |
| 1,2,4-Trichlorobenzene                            | <6.2   | U         | <6.2   | U         | <6.1    | U         | <5.9    | U         | <6.3   | U         | <6.2   | U         | <6.3       | U               | <5.9    | U         | <6.3   | U         | <6.1   | U         | <5.3    | U         | <6.2    | U         |
| 1,2-Dichlorobenzene                               | <1.0   | U         | <1.0   | U         | <0.99   | U         | <0.96   | UJ        | <1.0   | U         | <1.0   | U         | <1.0       | U               | < 0.95  | UJ        | <1.0   | U         | <0.99  | U         | <0.86   | U         | <1.0    | UJ        |
| 1,3-Dichlorobenzene                               | <1.0   | U         | <1.0   | U         | <0.99   | U         | <0.96   | U         | <1.0   | U         | <1.0   | U         | <1.0       | U               | < 0.95  | U         | <1.0   | U         | <0.99  | U         | <0.86   | U         | <1.0    | U         |
| 1,4-Dichlorobenzene                               | <1.0   | U         | <1.0   | U         | <0.99   | U         | <0.96   | U         | <1.0   | U         | <1.0   | U         | <1.0       | U               | < 0.95  | U         | <1.0   | U         | <0.99  | U         | <0.86   | U         | <1.0    | U         |
| Acetone   | 5.8    |           | 8.4    |           | 7.4     |           | 7.1     |           | 5.7    |           | 6.1    |           | 8.8        |                 | 11      |           | 4.7    |           | 9.4    |           | 9.5     |           | 7.1     |           |
| Benzene   | 0.72   |           | 1.1    |           | < 0.52  | U         | < 0.51  | U         | 0.79   |           | 0.80   |           | < 0.55     | U               | < 0.50  | U         | 0.71   |           | 0.78   |           | < 0.46  | U         | < 0.53  | U         |
| Ethylbenzene                                      | < 0.73 | U         | < 0.73 | U         | < 0.71  | U         | <0.69   | U         | < 0.74 | U         | <0.73  | U         | < 0.74     | U               | <0.69   | U         | < 0.74 | U         | < 0.71 | U         | < 0.62  | U         | < 0.72  | U         |
| m,p-Xylene  | < 0.73 | U         | <0.73  | U         | <0.71   | U         | <0.69   | U         | < 0.74 | U         | <0.73  | U         | < 0.74     | U               | 0.70    |           | < 0.74 | U         | < 0.71 | U         | < 0.62  | U         | <0.72   | U         |
| o-Xylene  | < 0.73 | U         | <0.73  | U         | <0.71   | U         | <0.69   | U         | < 0.74 | U         | <0.73  | U         | < 0.74     | U               | <0.69   | U         | < 0.74 | U         | < 0.71 | U         | < 0.62  | U         | <0.72   | U         |
| Toluene   | 3.9    |           | 0.80   |           | <0.62   | U         | < 0.60  | U         | 3.8    |           | 0.86   |           | < 0.64     | U               | 1.7     |           | 3.6    |           | 0.86   |           | < 0.54  | U         | <0.62   | U         |
| Trichlorofluoromethane (Freon 11)                 | 2.2    |           | 1.7    |           | 2.2     | J         | 1.0     |           | 2.0    |           | 1.6    |           | 2.2        | J               | 1.6     |           | 2.1    |           | 1.4    |           | 2.2     | J         | 1.4     |           |
| Dichlorodifluoromethane (Freon 12)                | 3.2    |           | 2.2    |           | 3.0     |           | 1.5     |           | 3.3    |           | 2.1    |           | 2.9        |                 | 2.5     |           | 3.3    |           | 2.1    |           | 3.0     |           | 2.3     |           |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | <1.3   | U         | <1.3   | U         | <1.2    | U         | <1.2    | U         | <1.3   | U         | <1.3   | U         | <1.3       | U               | <1.2    | U         | <1.3   | U         | <1.2   | U         | <1.1    | U         | <1.3    | U         |

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated using 6-liter summa canisters equipped with 8-hour flow controllers.

2. Sample analysis was completed by Air Toxics Limited (ATL) of Folsom, California. Samples collected in 2011 and 2010 were analyzed using United States Environmental Protection Agency (USEPA) Method TO-15 (Hi/Lo). Samples collected in 2008 were analyzed using either method TO-15, TO-15 in Selective Ion Monitoring (SIM) mode, or TO-15 with tentatively identified compounds (TICs). Refer to the analytical laboratory reports in Appendix D for further information.

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8. Gray shading indicates pre-mitigation results.

Yellow shading indicates preliminary mitigation results (grouting and sealing).

Blue shading indicates post-mitigation results (HVAC system modifications). Green shading indicates results after installation and operation of the sub-slab vapor extraction system.

#### TABLE 1 80K Area Sampling Results Performance Monitoring and Confirmatory Sampling Results **Building 330D VOC Source Assessment** IBM East Fishkill Facility Hopewell Junction, New York

|   |        |           | Co     | oncentrati | ons in µ | g/m <sup>3</sup> |         |          |
|---|--------|-----------|--------|------------|----------|------------------|---------|----------|
| Analyte Name                                      |        |           |        | Indo       | or Air   |                  |         |          |
| Analyte Name                                      | L      | A-03      | L      | A-04       | IA       | BD-25            | L       | A-06     |
|   | 06/    | /18/08    | 06/    | /18/08     | 07/      | /26/11           | 06/     | 18/08    |
|   | Result | Qualifier | Result | Qualifier  | Result   | Qualifier        | Result  | Qualifie |
| Tetrachloroethene (PCE)                           | 92     |           | <6.1   | U          | <1.1     | U                | 120     |          |
| Trichloroethene (TCE)                             | <4.2   | U         | <4.8   | U          | < 0.17   | U                | 1.1     |          |
| cis-1,2-Dichloroethene (cDCE)                     | <3.1   | U         | <3.5   | U          | < 0.62   | U                | 0.40    |          |
| 1,1-Dichloroethene (DCE)                          | <3.1   | U         | <3.5   | U          | < 0.62   | U                | < 0.091 | U        |
| Vinyl chloride (VC)                               | <2.0   | U         | <2.3   | U          | < 0.040  | U                | < 0.059 | U        |
| 1,1,1-Trichloroethane (TCA)                       | <4.3   | U         | <4.9   | U          | <0.86    | U                | < 0.25  | U        |
| Carbon tetrachloride                              | <5.0   | U         | <5.6   | U          | 0.44     |                  |         |          |
| Methylene chloride (MeCI)                         | <2.7   | U         | <3.1   | U          | <1.1     | U                | <1.6    | U        |
| Chlorobenzene                                     | <3.6   | U         | <4.1   | U          | < 0.72   | U                | < 0.21  | U        |
| 1,2,4-Trichlorobenzene                            | <23    | U         | <26    | U          | <5.8     | U                | <1.7    | U        |
| 1,2-Dichlorobenzene                               | <4.7   | U         | <5.4   | U          | < 0.94   | U                | < 0.28  | U        |
| 1,3-Dichlorobenzene                               | <4.8   | U         | <5.4   | U          | < 0.94   | U                | < 0.28  | U        |
| 1,4-Dichlorobenzene                               | <4.8   | U         | <5.4   | U          | < 0.94   | U                | < 0.28  | U        |
| Acetone   | 22     |           | <8.5   | U          | 7.5      |                  | 5.0     |          |
| Benzene   | <2.5   | U         | <2.8   | U          | < 0.50   | U                | < 0.37  | U        |
| Ethylbenzene                                      | 3.7    |           | <3.9   | U          | <0.68    | U                | < 0.20  | U        |
| m,p-Xylene  | 3.9    |           | <3.9   | U          | <0.68    | U                | < 0.40  | U        |
| o-Xylene  | <3.4   | U         | <3.9   | U          | <0.68    | U                | < 0.20  | U        |
| Toluene   | 34     |           | 5.0    |            | < 0.59   | U                | 1.3     |          |
| Trichlorofluoromethane (Freon 11)                 | <4.4   | U         | <5.0   | U          | 1.2      |                  | 1.4     |          |
| Dichlorodifluoromethane (Freon 12)                | <3.9   | U         | <4.4   | U          | 2.5      |                  | 2.5     |          |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | <6.0   | U         | <6.8   | U          | <1.2     | U                | 0.83    |          |

#### Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated using 6-liter summa canisters equipped with 8-hour flow controllers.

2. Sample analysis was completed by Air Toxics Limited (ATL) of Folsom, California. Samples collected in 2011 and 2010 were analyzed using United States Environmental Protection Agency (USEPA) Method TO-15 (Hi/Lo). Samples collected in 2008 were analyzed using either method TO-15, TO-15 in Selective Ion Monitoring (SIM) mode, or TO-15 with tentatively identified compounds (TICs). Refer to the analytical laboratory reports in Appendix D for further information.

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#### TABLE 2 Summary of July 2011 Confirmatory Sample Information Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Facility Hopewell Junction, New York

| Sample ID                           | Building<br>Floor | Sample<br>Matrix | Canister<br>Number | Sample<br>Height (ft.<br>above floor) | Start<br>Time<br>(hrs) | Start<br>Pressure<br>(in. Hg) | Stop<br>Time<br>(hrs) | Stop<br>Pressure<br>(in. Hg) | PID<br>(ppbv) | Temperature<br>(°F) | Location Description                    | Chemicals Observed Near Sample Location  | Other Observations  |
|-------------------------------------|-------------------|------------------|--------------------|---------------------------------------|------------------------|-------------------------------|-----------------------|------------------------------|---------------|---------------------|---|--|---|
| IA AP-30                            | Ground            | Indoor<br>Air    | 435                | 3.5                                   | 0730                   | >30                           | 1600                  | 7.5                          | 0             | 70                  | Former MLC Control Center               | "Simple Green" cleaner (1-gallon can). Non-<br>hazardous waste labeled "Green sheets (ceramic<br>strips and pieces, plastic strips - 55-gallon<br>drum).   | Currently used for storage.   |
| IA AR-27                            | Ground            | Indoor<br>Air    | 33789              | 3.5                                   | 0723                   | 28                            | 1525                  | 4.5                          | 0             | 70                  | Reception                               | None observed.   |   |
| IA AR-28                            | Ground            | Indoor<br>Air    | 33560              | 3.5                                   | 0736                   | >30                           | 1536                  | 5                            | 0             | 70                  | Hallway                                 | None observed.   |   |
| IA AY-35                            | Ground            | Indoor<br>Air    | 438                | 3.5                                   | 0811                   | >30                           | 1635                  | 6                            | 0             | 70                  | TMAH Support                            | Tetra-methyl-ammonium hydroxide (TMAH)<br>mixed in vessels and piped to other areas of the<br>building for use.  | Subsurface utility penetrations for fluoride and TMAH<br>and unidentified cleanout near sample location.<br>Overhead piping. Secondary containment berm around<br>most of room.   |
| IA AY-43                            | Ground            | Indoor<br>Air    | 14006              | 4                                     | 0839                   | 29.5                          | 1705                  | 6.5                          | 13            | 65                  | JDA Lab                                 | None observed.   | Overhead lines for compressed air and nitrogen;<br>overhead discharge vents for machinery.  |
| IA BA-28                            | Ground            | Indoor<br>Air    | 14010              | 3.5                                   | 0735                   | >30                           | 1535                  | 7                            | 0             | 68                  | Mask Crib                               | Bench-top quantities of isopropyl alcohol. Waste<br>can labeled "Mo/Cu/IPA/TMAH- contaminated<br>solids" (5-gallon can).   | Utility penetrations near sample location.  |
| IA BA-39                            | Ground            | Indoor<br>Air    | 5672               | 5.0                                   | 0826                   | 29                            | 1505                  | 3.5                          | 0             | 70                  | Office (for MLC Equipment<br>Support)   | Non-hazardous waste labeled "solids<br>contaminated with oil" (two 55-gallon drums).   | Utility cleanouts near sample location.   |
| IA BA-44                            | Ground            | Indoor<br>Air    | 4213               | 4                                     | 0844                   | >30                           | 1710                  | 4                            | 114           | 65                  | JDA Lab                                 | Flammable chemical storage cabinet labeled<br>"resist and solvent waste collections system"<br>approximately 25 feet from sample location.   | Utility penetration and elevated floor near sample<br>location. Sample location adjacent to overhead lines for<br>acid discharge/vent, deionized water, nitrogen, and<br>compressed air.  |
| IA BB-24                            | Ground            | Indoor<br>Air    | 5794               | 3.5                                   | 0710                   | >30                           | 1607                  | 6.5                          | 0             | 80                  | Mechanical Room ("Spencer<br>Vac")      | Non-hazardous "ceramic kerf waste" (55-gallon<br>drum).  | Several "Spencer Vacuum" units are located in this room.  |
| IA BB-37                            | Ground            | Indoor<br>Air    | 33988              | 4.5                                   | 0818                   | 29.5                          | 1645                  | 5.5                          | 0             | 70                  | Core 20D                                | Non-hazardous waste labeled "corrosive contaminated solids" (55-gallon drum).  | Currently unoccupied. HVAC unit MAU-79, which serves<br>this area, was not operating at the time of sampling.<br>Concrete floor with chipped epoxy coating. Two floor<br>sumps labeled "TMAH sumps #1 & #2" near sample<br>location. Overhead piping. |
| IA BB-39                            | Ground            | Indoor<br>Air    | 14877              | 3.5                                   | 0834                   | >30                           | 1650                  | 6                            | 0             | 70                  | Semiconductor Cooling<br>Technology Lab | Hazardous waste labeled "solvent contaminated<br>solids" (55-gallon drum) and "lead contaminated<br>solids" (5-gallon can). Bench-top quantities of<br>isopropyl alcohol and "Mega Bond" adhesive. | Two monitoring wells that historically have contained free-phase solvent near sample location.  |
| Dup34437<br>(IA BB-39<br>Duplicate) | Ground            | Indoor<br>Air    | 34437              | 3.5                                   | 0834                   | >30                           | 1650                  | 5.5                          | 0             | 70                  | Semiconductor Cooling<br>Technology Lab | Hazardous waste labeled "solvent contaminated<br>solids" (55-gallon drum) and "lead contaminated<br>solids" (5-gallon can). Bench-top quantities of<br>isopropyl alcohol and "Mega Bond" adhesive. | Two monitoring wells that historically have contained free-phase solvent near sample location.  |
| IA BB-40                            | Ground            | Indoor<br>Air    | 34418              | 4                                     | 0830                   | 30                            | 1555                  | 4                            | 0             | 65                  | Former Gemba Manufacturing              | Hazardous waste labeled "lead contaminated<br>solids" (two 5-gallon cans). Bench-top<br>quantities of isopropyl alcohol and "Mega Bond"<br>adhesive.   | Currently unoccupied. Several utility cleanouts labeled<br>"solvent" and "fluoride" near sample location. Two<br>eyewash stations with floor drains nearby.   |

#### TABLE 2 Summary of July 2011 Confirmatory Sample Information Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Facility Hopewell Junction, New York

| Sample ID                           | Building<br>Floor | Sample<br>Matrix | Canister<br>Number | Sample<br>Height (ft.<br>above floor) | Start<br>Time<br>(hrs) | Start<br>Pressure<br>(in. Hg) | Stop<br>Time<br>(hrs) | Stop<br>Pressure<br>(in. Hg) | PID<br>(ppbv) | Temperature<br>(°F) | Location Description      | Chemicals Observed Near Sample Location   | Other Observations   |
|-------------------------------------|-------------------|------------------|--------------------|---------------------------------------|------------------------|-------------------------------|-----------------------|------------------------------|---------------|---------------------|---------------------------|---|--|
| IA BC-32                            | Ground            | Indoor<br>Air    | 34487              | 3.5                                   | 0753                   | >30                           | 1542                  | 5                            | 0             | 65                  | Former Punch              | None observed   | Currently unoccupied. Utility cleanout near sample location.   |
| IA BD-25                            | Ground            | Indoor<br>Air    | 34747              | 5                                     | 0729                   | >30                           | 1529                  | 5.5                          | 0             | 68                  | Screening (80K Area)      | Lines for TMAH into machinery. Bench-top<br>quantities of "way lube #11830" and isopropyl<br>alcohol. Non-hazardous waste (moly/copper<br>paste solids, 55-gallon drum). Several waste cans<br>labeled "moly/copper/tungsten/IPA/ TMAH" (5-<br>gallons each).                                   | Unidentifiable "rotten" odor.  |
| IA BE-23                            | Ground            | Indoor<br>Air    | 34262              | 5                                     | 0722                   | >30                           | 1526                  | 5                            | 0             | 68                  | Punch (80K Area)          | Bench-top quantities of isopropyl alcohol.<br>Evidence of subgrade solvent lines.   | Several utility cleanouts labeled "solvent" and "fluoride" near sample location.   |
| IA BE-28                            | Ground            | Indoor<br>Air    | 12077              | 5                                     | 0731                   | 30                            | 1531                  | 5.5                          | 0             | 68                  | Midas                     | Waste can labeled "Mo/Cu/IPA/TMAH-<br>contaminated solids" (10-gallons). Bench-top<br>quantities of isopropyl alcohol.  | Several utility cleanouts labeled "CO" and "DA" near sample location.  |
| IA BF-24                            | Ground            | Indoor<br>Air    | 4205               | 3.5                                   | 0718                   | >30                           | 1522                  | 5.5                          | 0             | 68                  | Punch (80K Area)          | None observed.  | One utility cleanout labeled "solvent" and another unlabeled cleanout located near sample location.  |
| Dup23989<br>(IA BF-24<br>Duplicate) | Ground            | Indoor<br>Air    | 23989              | 3.5                                   | 0718                   | >30                           | 1522                  | 6                            | 0             | 68                  | Punch (80K Area)          | None observed.  | Utility cleanouts for "solvent" and others not specified near sample location.   |
| IA BF-34                            | Ground            | Indoor<br>Air    | 13656              | 3.5                                   | 0739                   | >30                           | 1550                  | 6                            | 0             | 65                  | Former Manufacturing Area | Waste can labeled "Mo/Cu/IPA/TMAH-<br>contaminated solids" (5-gallons).   | Currently unoccupied. Utility cleanouts labeled "DA" near sample location.   |
| IA BG-22                            | Ground            | Indoor<br>Air    | 913                | 5                                     | 0702                   | >30                           | 1502                  | 5.5                          | 0             | 68                  | Crib 2 (80K Area)         | Waste can labeled "solvent" (5-gallons). Several<br>containers each of methyl alcohol (1-gallon) and<br>10% isopropyl alcohol (1-gallon), methanol,<br>"Permabond," "Fantastik" cleaner, "Z-212<br>granite surface plate cleaner," "Loctite 290<br>threadlocker," and "Dieco die makers grease" |  |
| IA BG-23                            | Ground            | Indoor<br>Air    | 36029              | 4                                     | 0703                   | 29.5                          | 1503                  | 4.5                          | 0             | 68                  | Crib 1 (80K Area)         | Hazardous waste labeled "solvent contaminated<br>solids" (55-gallons) and ten waste methyl<br>alcohol containers (1-gallon) within 5 feet of<br>sample location.  | Utility cleanouts labeled "fluoride" and others not<br>specified near sample location. Eyewash station with<br>floor drain nearby.   |
| IA BG-24                            | Ground            | Indoor<br>Air    | 33327              | 5                                     | 0715                   | 29.5                          | 1519                  | 6                            | 0             | 68                  | Gowning (80K Area)        | None observed.  | Utility penetration for 80K Area subslab vapor extraction<br>system exhaust line and unlabeled utility cleanouts near<br>sample location.  |
| IA BG-38                            | Ground            | Indoor<br>Air    | 33895              | 3.5                                   | 0811                   | >30                           | 1545                  | 4.5                          | 0             | 65                  | JDA Lift Station          | None observed.  | Room appeared partially occupied with little machinery<br>and under construction at time of sampling. Unspecified<br>utility penetration adjacent to sample location. Subgrade<br>sump with lines for "acid waste pumped drain" and "tool<br>sump discharge" near sample location. Overhead vent<br>lines for "solvent & TMAH exhaust" appeared new and<br>unconnected to any machinery. |
| IA BG-45                            | Ground            | Indoor<br>Air    | 5701               | 4.8                                   | 0849                   | >30                           | 1700                  | 4                            | 0             | 65                  | Reliability Lab           | Bench-top containers of oil and plumbers joint compound.  | Batch in flooring next to sample location.   |

#### TABLE 2 Summary of July 2011 Confirmatory Sample Information Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Facility Hopewell Junction, New York

| Sample ID | Building<br>Floor | Sample<br>Matrix | Canister<br>Number | Sample<br>Height (ft.<br>above floor) | Start<br>Time<br>(hrs) | Start<br>Pressure<br>(in. Hg) | Stop<br>Time<br>(hrs) | Stop<br>Pressure<br>(in. Hg) | PID<br>(ppbv) | Temperature<br>(°F) | Location Description     | Chemicals Observed Near Sample Location | Other Observations                                |
|-----------|-------------------|------------------|--------------------|---------------------------------------|------------------------|-------------------------------|-----------------------|------------------------------|---------------|---------------------|--------------------------|---|---|
| IA BH-40  | Ground            | Indoor<br>Air    | 1564               | 5.5                                   | 0816                   | >30                           | 1640                  | 5                            | 0             | 70                  | Hallway                  | None observed.                          | Paper and cardboard recycling area; water cooler. |
| AA AC-15  | 2nd               | Ambient<br>Air   | 4225               | N/A                                   | 0732                   | >30                           | 1535                  | 5                            | 0             | 85                  | Intake plenum for AC-15  | None observed.                          |   |
| AA MAU-72 | Ground            | Ambient<br>Air   | 34228              | N/A                                   | 0748                   | 28.5                          | 1530                  | 5                            | 0             | 85                  | Intake plenum for MAU-72 | None observed.                          |   |

Notes:

1. Samples were collected on July 26, 2011 by Sanborn, Head & Associates, Inc. (Sanborn Head) personnel.

2. Samples were collected into 6-liter, stainless steel, pre-evacuated Summa<sup>®</sup> canisters using 8-hour metering regulators and in-line 2-micron filters. Canisters and regulators were laboratory-certified clean (100% certification).

3. PID screening was conducted using a ppbRAE, calbirated to a 10 parts per million by volume (ppmv) isobutylene-in-air standard.

4. "N/A" indicates not applicable.

#### TABLE 3 July 2011 Confirmatory Sampling Results Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Facility Hopewell Junction, New York

|   | Field Blank |                 |       |         |           |      |          |                |        |           |                    |      |         | Conce                | ntrati | ons in µg | g/m <sup>3</sup> |      |         |           |      |         |           |      |         |           |      |         |                |
|---|-------------|-----------------|-------|---------|-----------|------|----------|----------------|--------|-----------|--------------------|------|---------|----------------------|--------|-----------|------------------|------|---------|-----------|------|---------|-----------|------|---------|-----------|------|---------|----------------|
|   |             |                 | Field | Blank   |           |      |          | Amb            | ient ( | )utdoor A | lir                |      |         |                      |        |           |                  |      |         |           | Indo | or Air  |           |      |         |           |      |         |                |
|   |             | FB-01           |       |         |           |      | A        | A AC-15        |        | A         | A MAU-72           | 2    |         | IA AP-30             |        | ]         | A AR-27          |      | ]       | A AR-28   |      | ]       | A AY-35   |      |         | IA AY-43  |      | L       | A BA-28        |
| Analyte Name                                      |             | FB-01           |       |         | FB-02     |      | Intake p | lenum fo<br>15 | r AC-  | Intak     | e plenum<br>MAU-72 | for  | Form    | er MLC Coi<br>Center | ntrol  | R         | leception        |      |         | Hallway   |      | TM      | AH Suppo  | rt   |         | JDA Lab   |      | М       | ask Crib       |
|   | 7/3         | 26/2011         |       | 7/      | /26/2011  |      | 7/       | 26/2011        |        | 7.        | 26/2011            |      | 7       | /26/2011             |        | 7         | /26/2011         |      | 7       | /26/2011  |      | 7       | /26/2011  |      | 7       | /26/2011  |      | 7/      | 26/2011        |
|   | Result      | Qualifier       | Bias  | Result  | Qualifier | Bias | Result   | Qualifier      | Bias   | Result    | Qualifier          | Bias | Result  | Qualifier            | Bias   | Result    | Qualifier        | Bias | Result  | Qualifier | Bias | Result  | Qualifier | Bias | Result  | Qualifier | Bias | Result  | Qualifier Bias |
| Tetrachloroethene (PCE)                           | <1.1        | U               |       | <1.1    | U         |      | <1.1     | U              |        | <1.1      | U                  |      | 1.2     |                      |        | 1.2       |                  |      | 1.2     |           |      | 2.6     |           |      | 4.7     |           |      | <1.1    | U              |
| Trichloroethene (TCE)                             | < 0.18      | U               |       | < 0.17  | U         |      | < 0.17   | U              |        | < 0.17    | U                  |      | < 0.17  | U                    |        | < 0.16    | U                |      | < 0.17  | U         |      | < 0.18  | U         |      | < 0.17  | U         |      | < 0.18  | U              |
| cis-1,2-Dichloroethene (cDCE)                     | <0.66       | U               |       | < 0.64  | U         |      | < 0.64   | U              |        | < 0.64    | U                  |      | < 0.64  | U                    |        | < 0.59    | U                |      | < 0.64  | U         |      | < 0.65  | U         |      | < 0.64  | U         |      | < 0.65  | U              |
| 1,1-Dichloroethene (DCE)                          | <0.66       | U               |       | < 0.64  | U         |      | <0.64    | U              |        | < 0.64    | U                  |      | < 0.64  | U                    |        | < 0.59    | U                |      | < 0.64  | U         |      | < 0.65  | U         |      | < 0.64  | U         |      | < 0.65  | U              |
| Vinyl chloride (VC)                               | 0.17        |                 |       | < 0.041 | U         |      | 0.83     | EB             | H      | < 0.041   | U                  |      | < 0.041 | U                    |        | < 0.038   | U                |      | < 0.041 | U         |      | < 0.042 | U         |      | < 0.041 | U         |      | < 0.042 | U              |
| 1,1,1-Trichloroethane (TCA)                       | <0.90       | U               |       | <0.88   | U         |      | <0.88    | U              |        | <0.88     | U                  |      | <0.88   | U                    |        | < 0.82    | U                |      | <0.88   | U         |      | <0.89   | U         |      | <0.88   | U         |      | < 0.90  | U              |
| Carbon tetrachloride                              | < 0.21      | U               |       | < 0.20  | U         |      | 0.53     |                |        | 0.43      |                    |      | 0.40    |                      |        | 0.38      |                  |      | 0.39    |           |      | 0.41    |           |      | 0.36    |           |      | < 0.21  | U              |
| Methylene chloride (MeCI)                         | <1.2        | U               |       | <1.1    | U         |      | 1.2      |                |        | <1.1      | U                  |      | <1.1    | U                    |        | <1.0      | U                |      | <1.1    | U         |      | <1.1    | U         |      | <1.1    | U         |      | <1.1    | U              |
| Chlorobenzene                                     | <0.76       | U               |       | < 0.74  | U         |      | < 0.74   | U              |        | < 0.74    | U                  |      | < 0.74  | U                    |        | <0.69     | U                |      | < 0.74  | U         |      | <0.75   | U         |      | < 0.74  | U         |      | <0.76   | U              |
| 1,2,4-Trichlorobenzene                            | <6.2        | U               |       | <6.0    | U         |      | <6.0     | U              |        | <6.0      | U                  |      | <6.0    | U                    |        | <5.6      | U                |      | <6.0    | U         |      | <6.0    | U         |      | <6.0    | U         |      | <6.1    | U              |
| 1,2-Dichlorobenzene                               | <1.0        | UJ              | Ι     | < 0.97  | UJ        | Ι    | < 0.97   | UJ             | Ι      | < 0.97    | UJ                 | Ι    | < 0.97  | UJ                   | Ι      | <0.90     | UJ               | Ι    | < 0.97  | UJ        | Ι    | <0.98   | UJ        | Ι    | < 0.97  | UJ        | Ι    | <0.99   | UJ I           |
| 1,3-Dichlorobenzene                               | <1.0        | U               |       | < 0.97  | U         |      | < 0.97   | U              |        | <0.97     | U                  |      | < 0.97  | U                    |        | <0.90     | U                |      | < 0.97  | U         |      | <0.98   | U         |      | < 0.97  | U         |      | <0.99   | U              |
| 1,4-Dichlorobenzene                               | <1.0        | U               |       | < 0.97  | U         |      | <0.97    | U              |        | <0.97     | U                  |      | < 0.97  | U                    |        | < 0.90    | U                |      | < 0.97  | U         |      | <0.98   | U         |      | < 0.97  | U         |      | <0.99   | U              |
| Acetone   | <2.0        | U               |       | <1.9    | U         |      | 7.9      |                |        | 6.0       |                    |      | 10      |                      |        | 5.4       |                  |      | 9.6     |           |      | 8.8     |           |      | 11      |           |      | 8.5     |                |
| Benzene   | < 0.53      | U               |       | < 0.51  | U         |      | 0.78     |                |        | < 0.52    | U                  |      | < 0.51  | U                    |        | < 0.48    | U                |      | < 0.52  | U         |      | < 0.52  | U         |      | < 0.52  | U         |      | < 0.53  | U              |
| Ethylbenzene                                      | < 0.72      | U               |       | < 0.70  | U         |      | < 0.70   | U              |        | < 0.70    | U                  |      | < 0.70  | U                    |        | < 0.65    | U                |      | < 0.70  | U         |      | < 0.71  | U         |      | < 0.70  | U         |      | < 0.72  | U              |
| m,p-Xylene  | < 0.72      | U               |       | < 0.70  | U         |      | <0.70    | U              |        | < 0.70    | U                  |      | < 0.70  | U                    |        | < 0.65    | U                |      | < 0.70  | U         |      | < 0.71  | U         |      | < 0.70  | U         |      | < 0.72  | U              |
| o-Xylene  | < 0.72      | U               |       | < 0.70  | U         |      | < 0.70   | U              |        | < 0.70    | U                  |      | < 0.70  | U                    |        | < 0.65    | U                |      | < 0.70  | U         |      | < 0.71  | U         |      | < 0.70  | U         |      | < 0.72  | U              |
| Toluene   | <0.62       | :0.62 U <0.61 U |       |         | 0.65      |      |          | <0.61          | U      |           | 1.0                |      |         | 0.61                 |        |           | 1.0              |      |         | < 0.61    | U    |         | 0.70      |      |         | < 0.62    | U    |         |                |
| Trichlorofluoromethane (Freon 11)                 | <0.93       | :0.93 U <0.90 U |       | 1.8     |           |      | 1.2      |                |        | 4.1       |                    |      | 3.4     |                      |        | 4.0       |                  |      | 3.0     |           |      | 2.4     |           |      | 2.6     |           |      |         |                |
| Dichlorodifluoromethane (Freon 12)                | <0.82       | U               |       | <0.80   | U         |      | 2.7      |                |        | 2.5       |                    |      | 3.8     |                      |        | 3.5       |                  |      | 3.7     |           |      | 5.3     |           |      | 3.0     |           |      | 2.6     |                |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | <1.3        | U               |       | <1.2    | U         |      | <1.2     | U              |        | <1.2      | U                  |      | <1.2    | U                    |        | <1.1      | U                |      | <1.2    | U         |      | <1.2    | U         |      | <1.2    | U         |      | <1.3    | U              |

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated using 6-liter summa canisters equipped with 8-hour flow controllers.

2. Sample analysis was completed by Air Toxics Limited (ATL) of Folsom, California using United States Environmental Protection Agency (USEPA) Method TO-15 (Hi/Lo). Trichloroethene, vinyl chloride, and carbon tetrachloride were analyzed in Selective Ion Monitoring (SIM) mode. Refer to analytical laboratory reports in Appendix D for additional nformation.

3. "<" indicates a non-detection at the reporting limit shown.

4. New Environmental Horizons, Inc (NEH) performed an independent validation of the analytical data, as described in their Data Usability Report, dated September 2, 2011 and provided as Appendix E. All results were considered acceptable, with the understanding of the potential uncertainty (bias) in the qualified results. In some cases, NEH assigned the following qualifiers and biases to the data: "U" - Indicates Analyte is non-detect at or above the sample specific practical quantification limit (PQL).

"J" - Indicates Result is an estimated value.

"UJ" - Indicates non-detect is estimated at the PQL.

"EB" - Indicates analyte was also present in a non-matrix matched Field Equipment Blank.

"H"- Indicates High bias

"I" - Indicates Indeterminate bias.

5. **Bold** values indicate the analyte was detected above reporting limits.

6. "Max" indicates the maximum detected concentration in the indoor air samples. For those analytes that were not detected in any of the samples, the maximum reporting limit value is presented. "Min" indicates the minimum detected concentration in the indoor air samples. For those analytes that were not detected in any of the samples, the minimum reporting limit value is presented. For those analytes that were detected, the reporting limit values were not considered when calculating the minimum values.

"Median" indicates the median detected concentration in the indoor air samples. "ND" indicates that the analyte was not detected above laboratory reporting limits in any of the indoor air samples.

#### TABLE 3 July 2011 Confirmatory Sampling Results Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Facility Hopewell Junction, New York

|   |                 |                       |           |         |           |      |                |                        |          |         |           |      |         | Conce        | ntrati          | ons in µĮ          | g/m <sup>3</sup> |      |        |                     |       |         |           |      |         |           |       |         |                |
|---|-----------------|-----------------------|-----------|---------|-----------|------|----------------|------------------------|----------|---------|-----------|------|---------|--------------|-----------------|--------------------|------------------|------|--------|---------------------|-------|---------|-----------|------|---------|-----------|-------|---------|----------------|
|   |                 |                       |           | _       |           |      | _              |                        |          | _       |           |      | _       |              | Indo            | or Air             |                  | _    |        |                     | _     |         |           |      | _       |           |       | _       |                |
|   | I/              | A BA-39               |           | I       | A BA-44   |      | I/             | A BB-24                |          | J       | IA BB-37  |      |         | IA BB-39     |                 | IA                 | BB-39 Dup.       |      | I      | A BB-40             |       | J       | IA BC-32  |      |         | IA BD-25  |       | L       | A BE-23        |
| Analyte Name                                      | Offic<br>Equipm | e (for ML<br>ent Supp | C<br>ort) | ]       | JDA Lab   |      | Mecha<br>("Spe | anical Ro<br>encer Vac | om<br>") |         | Core 20D  |      |         | Se<br>Coolir | emico<br>1g Tec | nductor<br>hnology | Lab              | G    | emba I | Former<br>Manufactu | ıring | For     | mer Punc  | h    | Screen  | ing (80K  | Area) | Punch   | ı (80K Area)   |
|   | 7/2             | 26/2011               |           | 7/      | /26/2011  |      | 7/             | 26/2011                |          | 7       | /26/2011  |      | 7       | /26/2011     |                 | 7                  | /26/2011         |      | 7/     | 26/2011             |       | 7,      | /26/2011  |      | 7       | /26/2011  |       | 7/      | 26/2011        |
|   | Result          | Qualifier             | Bias      | Result  | Qualifier | Bias | Result         | Qualifier              | Bias     | Result  | Qualifier | Bias | Result  | Qualifier    | Bias            | Result             | Qualifier Bi     | as R | lesult | Qualifier           | Bias  | Result  | Qualifier | Bias | Result  | Qualifier | Bias  | Result  | Qualifier Bias |
| Tetrachloroethene (PCE)                           | 4.4             |                       |           | 4.0     |           |      | <1.1           | U                      |          | 30      |           |      | 4.2     |              |                 | <1.1               | U                |      | 2.1    |                     |       | 4.5     |           |      | <1.1    | U         |       | <1.0    | U              |
| Trichloroethene (TCE)                             | < 0.17          | U                     |           | < 0.16  | U         |      | < 0.18         | U                      |          | 0.43    |           |      | < 0.18  | U            |                 | < 0.17             | U                |      | < 0.17 | U                   |       | < 0.17  | U         |      | < 0.17  | U         |       | < 0.16  | U              |
| cis-1,2-Dichloroethene (cDCE)                     | < 0.63          | U                     |           | <0.60   | U         |      | <0.67          | U                      |          | < 0.64  | U         |      | < 0.65  | U            |                 | < 0.63             | U                |      | < 0.63 | U                   |       | < 0.61  | U         |      | < 0.62  | U         |       | < 0.61  | U              |
| 1,1-Dichloroethene (DCE)                          | < 0.63          | U                     |           | <0.60   | U         |      | <0.67          | U                      |          | < 0.64  | U         |      | < 0.65  | U            |                 | < 0.63             | U                |      | < 0.63 | U                   |       | < 0.61  | U         |      | < 0.62  | U         |       | < 0.61  | U              |
| Vinyl chloride (VC)                               | < 0.041         | U                     |           | < 0.039 | U         |      | < 0.043        | U                      |          | < 0.041 | U         |      | < 0.042 | U            |                 | < 0.040            | U                | <    | 0.041  | U                   |       | < 0.040 | U         |      | < 0.040 | U         |       | < 0.039 | U              |
| 1,1,1-Trichloroethane (TCA)                       | <0.87           | U                     |           | <0.83   | U         |      | <0.92          | U                      |          | <0.88   | U         |      | <0.89   | U            |                 | <0.86              | U                |      | < 0.87 | U                   |       | <0.84   | U         |      | <0.86   | U         |       | < 0.83  | U              |
| Carbon tetrachloride                              | 0.36            |                       |           | 0.38    |           |      | 0.33           |                        |          | 0.34    |           |      | 0.46    |              |                 | 0.34               |                  |      | 0.52   |                     |       | 0.53    |           |      | 0.44    |           |       | 0.43    |                |
| Methylene chloride (MeCI)                         | <1.1            | U                     |           | <1.0    | U         |      | <1.2           | U                      |          | <1.1    | U         |      | <1.1    | U            |                 | <1.1               | U                |      | <1.1   | U                   |       | <1.1    | U         |      | <1.1    | U         |       | <1.1    | U              |
| Chlorobenzene                                     | < 0.74          | U                     |           | < 0.70  | U         |      | < 0.77         | U                      |          | < 0.74  | U         |      | < 0.75  | U            |                 | < 0.73             | U                |      | < 0.74 | U                   |       | < 0.71  | U         |      | < 0.72  | U         |       | < 0.70  | U              |
| 1,2,4-Trichlorobenzene                            | <5.9            | U                     |           | <5.6    | U         |      | <6.2           | U                      |          | <6.0    | U         |      | <6.0    | U            |                 | <5.9               | U                |      | <5.9   | U                   |       | <5.8    | U         |      | <5.8    | U         |       | <5.7    | U              |
| 1,2-Dichlorobenzene                               | <0.96           | UJ                    | Ι         | <0.91   | UJ        | Ι    | <1.0           | UJ                     | Ι        | < 0.97  | UJ        | Ι    | <0.98   | U            |                 | < 0.95             | U                |      | <0.96  | U                   |       | <0.93   | U         |      | < 0.94  | U         |       | < 0.92  | U              |
| 1,3-Dichlorobenzene                               | <0.96           | U                     |           | <0.91   | U         |      | <1.0           | U                      |          | < 0.97  | U         |      | <0.98   | U            |                 | < 0.95             | U                |      | <0.96  | U                   |       | <0.93   | U         |      | < 0.94  | U         |       | < 0.92  | U              |
| 1,4-Dichlorobenzene                               | <0.96           | U                     |           | <0.91   | U         |      | <1.0           | U                      |          | < 0.97  | U         |      | <0.98   | U            |                 | < 0.95             | U                |      | <0.96  | U                   |       | <0.93   | U         |      | < 0.94  | U         |       | < 0.92  | U              |
| Acetone   | 11              |                       |           | 13      |           |      | 10             |                        |          | 14      |           |      | 8.2     |              |                 | 8.6                |                  |      | 11     |                     |       | 9.8     |           |      | 7.5     |           |       | 7.4     |                |
| Benzene   | < 0.51          | U                     |           | <0.48   | U         |      | < 0.54         | U                      |          | < 0.51  | U         |      | < 0.52  | U            |                 | < 0.50             | U                |      | < 0.51 | U                   |       | < 0.50  | U         |      | < 0.50  | U         |       | < 0.49  | U              |
| Ethylbenzene                                      | <0.69           | U                     |           | <0.66   | U         |      | <0.73          | U                      |          | < 0.70  | U         |      | < 0.71  | U            |                 | <0.69              | U                |      | <0.69  | U                   |       | <0.67   | U         |      | <0.68   | U         |       | <0.66   | U              |
| m,p-Xylene  | <0.69           | U                     |           | <0.66   | U         |      | <0.73          | U                      |          | < 0.70  | U         |      | < 0.71  | U            |                 | <0.69              | U                |      | <0.69  | U                   |       | <0.67   | U         |      | <0.68   | U         |       | <0.66   | U              |
| o-Xylene  | <0.69           | U                     |           | <0.66   | U         |      | <0.73          | U                      |          | < 0.70  | U         |      | < 0.71  | U            |                 | <0.69              | U                |      | <0.69  | U                   |       | <0.67   | U         |      | <0.68   | U         |       | <0.66   | U              |
| Toluene   | <0.60           | ).60 U (              |           | 0.81    |           |      | < 0.63         | U                      |          | 0.60    | J         | Ι    | 0.64    |              |                 | <0.60              | U                | •    | <0.60  | U                   |       | <0.58   | U         |      | < 0.59  | U         |       | < 0.58  | U              |
| Trichlorofluoromethane (Freon 11)                 | 1.4             | .4                    |           | 2.4     |           |      | 1.8            |                        |          | 3.4     |           |      | 1.4     |              |                 | 1.4                |                  |      | 1.6    |                     |       | 5.0     |           |      | 1.2     |           |       | 1.5     |                |
| Dichlorodifluoromethane (Freon 12)                | 2.6             |                       |           | 3.0     |           |      | 2.6            |                        |          | 3.1     |           |      | 3.0     |              |                 | 2.8                |                  |      | 2.9    |                     |       | 3.2     |           |      | 2.5     |           |       | 2.3     |                |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | <1.2            | U                     |           | <1.2    | U         |      | <1.3           | U                      |          | <1.2    | U         |      | <1.2    | U            |                 | <1.2               | U                |      | <1.2   | U                   |       | <1.2    | U         |      | <1.2    | U         |       | <1.2    | U              |

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated using 6-liter summa canisters equipped with 8-hour flow controllers.

2. Sample analysis was completed by Air Toxics Limited (ATL) of Folsom, California using United States Environmental Protection Agency (USEPA) Method TO-15 (Hi/Lo). Trichloroethene, vinyl chloride, and carbon tetrachloride were analyzed in Selective Ion Monitoring (SIM) mode. Refer to analytical laboratory reports in Appendix D for additional nformation.

3. "<" indicates a non-detection at the reporting limit shown.

4. New Environmental Horizons, Inc (NEH) performed an independent validation of the analytical data, as described in their Data Usability Report, dated September 2, 2011 and provided as Appendix E. All results were considered acceptable, with the understanding of the potential uncertainty (bias) in the qualified results. In some cases, NEH assigned the following qualifiers and biases to the data: "U" - Indicates Analyte is non-detect at or above the sample specific practical quantification limit (PQL).

"J" - Indicates Result is an estimated value.

"UJ" - Indicates non-detect is estimated at the PQL.

"EB" - Indicates analyte was also present in a non-matrix matched Field Equipment Blank.

"H"- Indicates High bias

"I" - Indicates Indeterminate bias.

5. Bold values indicate the analyte was detected above reporting limits.

6. "Max" indicates the maximum detected concentration in the indoor air samples. For those analytes that were not detected in any of the samples, the maximum reporting limit value is presented. "Min" indicates the minimum detected concentration in the indoor air samples. For those analytes that were not detected in any of the samples, the minimum reporting limit value is presented. For those analytes that were detected, the reporting limit values were not considered when calculating the minimum values.

"Median" indicates the median detected concentration in the indoor air samples. "ND" indicates that the analyte was not detected above laboratory reporting limits in any of the indoor air samples.

#### TABLE 3 July 2011 Confirmatory Sampling Results Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Facility Hopewell Junction, New York

|   |         |           |      |         |           |        |          |           |      |         |                  |        |         | Concer     | ntrati | ons in µg | g/m <sup>3</sup> |      |         |            |      |         |             |      |         |               |          |                |
|---|---------|-----------|------|---------|-----------|--------|----------|-----------|------|---------|------------------|--------|---------|------------|--------|-----------|------------------|------|---------|------------|------|---------|-------------|------|---------|---------------|----------|----------------|
|   |         |           | _    |         |           |        | _        |           |      |         |                  |        | _       |            | Indo   | or Air    |                  | -    |         |            |      |         |             |      | _       |               | _        |                |
|   | L       | A BE-28   |      | L       | A BF-24   |        | IAI      | 3F-24 Dup | p.   | J       | A BF-34          |        |         | IA BG-22   |        | J         | IA BG-23         |      | ]       | A BG-24    |      | I       | A BG-38     |      | J       | A BG-45       | I        | A BH-40        |
| Analyte Name                                      |         | Midas     |      |         | Pu        | nch (8 | BOK Area | )         |      | Former  | Manufact<br>Area | turing | Crib    | 2 (80K Are | ea)    | Crib      | 1 (80K Ar        | ea)  | Gowni   | ng (80K Ar | ea)  | JDA     | Lift Statio | n    | Rel     | iability Lab  | ]        | Hallway        |
|   | 7/      | 26/2011   |      | 7/      | 26/2011   |        | 7/       | 26/2011   |      | 7,      | /26/2011         |        | 7       | /26/2011   |        | 7         | /26/2011         |      | 7       | /26/2011   |      | 7       | /26/2011    |      | 7       | /26/2011      | 7/       | /26/2011       |
|   | Result  | Qualifier | Bias | Result  | Qualifier | Bias   | Result   | Qualifier | Bias | Result  | Qualifier        | Bias   | Result  | Qualifier  | Bias   | Result    | Qualifier        | Bias | Result  | Qualifier  | Bias | Result  | Qualifier   | Bias | Result  | Qualifier Bia | s Result | Qualifier Bias |
| Tetrachloroethene (PCE)                           | 3.3     |           |      | <1.1    | U         |        | <1.1     | U         |      | 12      |                  |        | <1.1    | U          |        | <1.1      | U                |      | <1.1    | U          |      | 6.2     |             |      | 1.3     |               | 8.4      |                |
| Trichloroethene (TCE)                             | < 0.17  | U         |      | < 0.17  | U         |        | <0.18    | U         |      | < 0.17  | U                |        | < 0.17  | U          |        | < 0.17    | U                |      | <0.18   | U          |      | < 0.17  | U           |      | < 0.16  | U             | < 0.17   | U              |
| cis-1,2-Dichloroethene (cDCE)                     | < 0.64  | U         |      | <0.63   | U         |        | <0.65    | U         |      | <0.64   | U                |        | < 0.63  | U          |        | <0.63     | U                |      | <0.66   | U          |      | < 0.61  | U           |      | < 0.61  | U             | < 0.63   | U              |
| 1,1-Dichloroethene (DCE)                          | < 0.64  | U         |      | <0.63   | U         |        | <0.65    | U         |      | <0.64   | U                |        | < 0.63  | U          |        | < 0.63    | U                |      | <0.66   | U          |      | < 0.61  | U           |      | < 0.61  | U             | < 0.63   | U              |
| Vinyl chloride (VC)                               | < 0.041 | U         |      | < 0.041 | U         |        | < 0.042  | U         |      | < 0.041 | U                |        | < 0.041 | U          |        | < 0.040   | U                |      | < 0.042 | U          |      | < 0.040 | U           |      | < 0.039 | U             | < 0.040  | U              |
| 1,1,1-Trichloroethane (TCA)                       | <0.88   | U         |      | < 0.87  | U         |        | <0.90    | U         |      | <0.88   | U                |        | < 0.87  | U          |        | <0.86     | U                |      | <0.90   | U          |      | <0.84   | U           |      | < 0.83  | U             | <0.86    | U              |
| Carbon tetrachloride                              | 0.45    |           |      | 0.48    |           |        | 0.48     |           |      | 0.47    |                  |        | 0.20    |            |        | 0.36      |                  |      | 0.34    |            |      | 0.36    |             |      | 0.35    |               | 0.32     |                |
| Methylene chloride (MeCI)                         | <1.1    | U         |      | <1.1    | U         |        | <1.1     | U         |      | <1.1    | U                |        | 1.4     |            |        | <1.1      | U                |      | <1.2    | U          |      | 1.1     |             |      | <1.1    | U             | <1.1     | U              |
| Chlorobenzene                                     | < 0.74  | U         |      | < 0.74  | U         |        | <0.76    | U         |      | < 0.74  | U                |        | < 0.74  | U          |        | < 0.73    | U                |      | < 0.76  | U          |      | < 0.71  | U           |      | < 0.70  | U             | < 0.73   | U              |
| 1,2,4-Trichlorobenzene                            | <6.0    | U         |      | <5.9    | U         |        | <6.1     | U         |      | <6.0    | U                |        | <5.9    | U          |        | <5.9      | U                |      | <6.2    | U          |      | <5.8    | U           |      | <5.7    | U             | <5.9     | U              |
| 1,2-Dichlorobenzene                               | < 0.97  | U         |      | <0.96   | U         |        | <0.99    | U         |      | < 0.97  | U                |        | <0.96   | UJ         | Ι      | < 0.95    | UJ               | Ι    | <1.0    | UJ         | Ι    | <0.93   | UJ          | Ι    | < 0.92  | UJ I          | < 0.95   | UJ I           |
| 1,3-Dichlorobenzene                               | <0.97   | U         |      | <0.96   | U         |        | <0.99    | U         |      | < 0.97  | U                |        | <0.96   | U          |        | < 0.95    | U                |      | <1.0    | U          |      | <0.93   | U           |      | < 0.92  | U             | < 0.95   | U              |
| 1,4-Dichlorobenzene                               | <0.97   | U         |      | <0.96   | U         |        | <0.99    | U         |      | < 0.97  | U                |        | <0.96   | U          |        | < 0.95    | U                |      | <1.0    | U          |      | <0.93   | U           |      | < 0.92  | U             | < 0.95   | U              |
| Acetone   | 7.7     |           |      | 7.3     |           |        | 7.3      |           |      | 8.8     |                  |        | 7.1     |            |        | 11        |                  |      | 7.1     |            |      | 9.6     |             |      | 12      |               | 11       |                |
| Benzene   | < 0.51  | U         |      | < 0.51  | U         |        | < 0.53   | U         |      | < 0.52  | U                |        | < 0.51  | U          |        | < 0.50    | U                |      | < 0.53  | U          |      | < 0.50  | U           |      | < 0.49  | U             | < 0.50   | U              |
| Ethylbenzene                                      | < 0.70  | U         |      | <0.69   | U         |        | < 0.72   | U         |      | < 0.70  | U                |        | <0.69   | U          |        | <0.69     | U                |      | < 0.72  | U          |      | < 0.67  | U           |      | <0.66   | U             | <0.69    | U              |
| m,p-Xylene  | < 0.70  | U         |      | <0.69   | U         |        | <0.72    | U         |      | < 0.70  | U                |        | <0.69   | U          |        | 0.70      |                  |      | < 0.72  | U          |      | <0.67   | U           |      | 0.76    |               | <0.69    | U              |
| o-Xylene  | < 0.70  | U         |      | <0.69   | U         |        | < 0.72   | U         |      | < 0.70  | U                |        | < 0.69  | U          |        | <0.69     | U                |      | < 0.72  | U          |      | < 0.67  | U           |      | <0.66   | U             | <0.69    | U              |
| Toluene   | <0.61   | U         |      | <0.60   | U         |        | <0.62    | U         |      | <0.61   | U                |        | < 0.60  | U          |        | 1.7       |                  |      | < 0.62  | U          |      | <0.58   | U           |      | 0.86    |               | <0.60    | U              |
| Trichlorofluoromethane (Freon 11)                 | 2.1     | 1         |      | 1.5     |           |        | 1.5      |           |      | 3.9     |                  |        | 1.0     |            |        | 1.6       |                  |      | 1.4     |            |      | 2.3     |             |      | 1.8     |               | 2.4      |                |
| Dichlorodifluoromethane (Freon 12)                | 2.6     |           |      | 2.4     |           |        | 2.5      |           |      | 3.0     |                  |        | 1.5     |            |        | 2.5       |                  |      | 2.3     |            |      | 2.4     |             |      | 2.6     |               | 2.8      |                |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | <1.2    | 5<br>2 U  |      | <1.2    | U         |        | <1.3     | U         |      | <1.2    | U                |        | <1.2    | U          |        | <1.2      | U                |      | <1.3    | U          |      | <1.2    | U           |      | <1.2    | U             | <1.2     | U              |

Notes:

1. Samples were collected by Sanborn Head personnel on the dates indicated using 6-liter summa canisters equipped with 8-hour flow controllers.

2. Sample analysis was completed by Air Toxics Limited (ATL) of Folsom, California using United States Environmental Protection Agency (USEPA) Method TO-15 (Hi/Lo). Trichloroethene, vinyl chloride, and carbon tetrachloride were analyzed in Selective Ion Monitoring (SIM) mode. Refer to analytical laboratory reports in Appendix D for additional nformation.

3. "<" indicates a non-detection at the reporting limit shown.

4. New Environmental Horizons, Inc (NEH) performed an independent validation of the analytical data, as described in their <u>Data Usability Report</u>, dated September 2, 2011 and provided as Appendix E. All results were considered acceptable, with the understanding of the potential uncertainty (bias) in the qualified results. In some cases, NEH assigned the following qualifiers and biases to the data:

"U" - Indicates Analyte is non-detect at or above the sample specific practical quantification limit (PQL).

"J" - Indicates Result is an estimated value.

"UJ" - Indicates non-detect is estimated at the PQL.

"EB" - Indicates analyte was also present in a non-matrix matched Field Equipment Blank.

"H"- Indicates High bias

"I" - Indicates Indeterminate bias.

5. Bold values indicate the analyte was detected above reporting limits.

6. "Max" indicates the maximum detected concentration in the indoor air samples. For those analytes that were not detected in any of the samples, the maximum reporting limit value is presented. "Min" indicates the minimum detected concentration in the indoor air samples. For those analytes that were not detected in any of the samples, the minimum reporting limit value is presented. For those analytes that were detected, the reporting limit values were not considered when calculating the minimum values.

"Median" indicates the median detected concentration in the indoor air samples. "ND" indicates that the analyte was not detected above laboratory reporting limits in any of the indoor air samples.

| Indoor Air |           |         |  |  |  |
|------------|-----------|---------|--|--|--|
| Max        | Min       | Median  |  |  |  |
| 30         | 1.2       | 4.1     |  |  |  |
| 0.43       | 0.43      | 0.43    |  |  |  |
| < 0.67     | < 0.59    | ND      |  |  |  |
| < 0.67     | < 0.59    | ND      |  |  |  |
| < 0.043    | < 0.038   | ND      |  |  |  |
| < 0.92     | < 0.82    | ND      |  |  |  |
| 0.53       | 0.20      | 0.38    |  |  |  |
| 1.4        | 1.1       | 1.3     |  |  |  |
| < 0.77     | <0.69     | ND      |  |  |  |
| <6.2       | <5.6      | ND      |  |  |  |
| <1         | <0.9      | ND      |  |  |  |
| <1         | <0.9      | ND      |  |  |  |
| <1         | <0.9      | ND      |  |  |  |
| 14         | 5.4       | 9.2     |  |  |  |
| < 0.54     | <0.48     | ND      |  |  |  |
| < 0.73     | <0.65     | ND      |  |  |  |
| 0.76       | 0.70      | 0.73    |  |  |  |
| < 0.73     | <0.65     | ND      |  |  |  |
| 1.7        | 0.60 0.81 |         |  |  |  |
| 5.0        | 1.0 2.0   |         |  |  |  |
| 5.3        | 1.5       | 1.5 2.7 |  |  |  |
| <1.3       | <1.1      | ND      |  |  |  |

**FIGURES** 

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Building 330D VOC Source Assessment

This figure shows the inferred subslab pressure field (measured in inches of water column [in. wc]) in response to vapor extraction conducted on April 26, 2011.

digital manometer referenced to room pressure. Air flow was measured using a TSI 9555 Air Velocity Meter, and screening for the presence of volatile organic compounds (VOCs) was conducted using a MiniRAE 2000 photoionization detector

subslab vapor extraction test port EP-1 subslab vapor extraction ports installed September 28-29, 2009 Subslab pressure contour (dashed Subslab pressure (in. wc) relative Gross VOCs (parts per million by

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## Figure 5 80K Area Pre- and Post-Mitigation Indoor Air PCE Results

Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment

> IBM East Fishkill Facility Hopewell Junction, New York

> > Drawn By: E. Wright Designed By: B. Green/ L. Atwell Reviewed By: D. Shea Project No: 2999.00 Date: December 2011

#### **Figure Narrative**

This figure shows the results of indoor air samples collected prior to and after completion of mitigation activities in the 80K manufacturing area (80K Area). Preliminary mitigation measures, which included sealing and grouting of chase floors within the 80K Area, were performed during early July 2008. Post preliminary mitigation sampling was performed in mid-July 2008, and the results are shown in the yellow shaded boxes.

Additional mitigation measures, which included modifications to HVAC system operations, were completed in November 2008. Post HVAC modification sampling was performed on November 20, 2008, and the results are shown in blue shaded boxes. A sub-slab vapor extraction system was installed and began operation in October 2010; results of subsequent sampling events are shown in green shaded boxes.

The indoor air samples were collected using summa canisters (Summa) and charcoal sorbent tubes (Sorbent) on the dates indicated. Summas were analyzed by Air Toxics, Ltd. using USEPA Method TO-15. Sorbent samples were analyzed by the Hudson Valley Environmental Laboratory using modified Method 18.

Legend

Location of indoor air sample (Sorbent)

Location of indoor air sample (Summa)

Location of ambient air sample (Summa)

| IA BG-24 | 7/22/08 | 11/20/08 | 12/2/10 | 5/12/11 | 7/26/11 |
|----------|---------|----------|---------|---------|---------|
| Sorbent  | 270     |          |         |         |         |
| Summa    |         | 12       | <1.1    | <0.98   | <1.1    |
|          |         |          |         |         |         |

Concentrations of tetrachloroethene (PCE) in units of micrograms per cubic meter (ug/m $^3$ ):

Gray indicates pre-mitigation results;

Yellow indicates preliminary mitigation results (grouting and sealing);

Blue indicates post-mitigation results (HVAC system modifications); and

Green indicates results after installation and operation of the sub-slab vapor extraction system.



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# **APPENDIX A**

# LIMITATIONS

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# APPENDIX A LIMITATIONS

- 1. The findings and conclusions described in this report are based in part on the data obtained from a finite number of samples from widely spaced locations. The figures are intended to depict inferred conditions during a given period of time, consistent with available information. The actual conditions will vary from that shown, both spatially and temporally. Other interpretations are possible. The nature and extent of variations between sampling locations may not become evident until further investigation is initiated. If variations or other latent conditions then appear evident, it may be necessary to re-evaluate the conclusions of this report.
- 2. The conclusions contained in this report are based in part upon various types of chemical data, as well as historical and hydrogeologic information developed by previous investigators. While SHPC has reviewed that data available to us at the time the report was prepared and information as stated in this report, any of SHPC's interpretations and conclusions that have relied on that information will be contingent on its validity. SHPC has not performed an independent assessment of the reliability of the data; should additional chemical data, historical information, or hydrogeologic information become available in the future, such information should be reviewed by SHPC and the interpretations and conclusions presented herein may be modified accordingly.
- 3. Sampling and quantitative laboratory testing was performed by others as part of the investigation as noted within the report. Where such analyses have been conducted by an outside laboratory, unless otherwise stated in the report, SHPC has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data. It must be noted that additional compounds not searched for during the current study may be present in vapor and groundwater at the site. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their distribution within the groundwater and vapor may occur due to the passage of time, seasonal water table fluctuations, recharge events, and other factors.
- 4. This report has been prepared for the exclusive use of IBM for specific application to Building 330D at the East Fishkill facility in accordance with generally accepted engineering and scientific practices. No warranty, expressed or implied, is made. The contents of this report should not be relied on by any other party without the express written consent of SHPC.
- 5. In preparing this report, SHPC has endeavored to conform to generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area. SHPC has attempted to observe a degree of care and skill generally exercised by the technical community under similar circumstances and conditions.

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# **APPENDIX B**

# **PHOTOGRAPH LOG**

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# APPENDIX B Photograph Log



Photo #1: Sample IA-AP-30, located in the Former MLC Control Center.



Photo #2: Sample IA AR-27, located in the Reception area.



Photo #3: Sample IA AY-35, located in the TMAH Support room.



Photo #4: Sample IA AY-43, located in the JDA Lab.



Photo #5: Sample IA BA-28, located in the Mask Crib.



Photo #6: Sample IA BA-39, located in the Office area for MLC Equipment Support.



Photos #7 and #8: Sample IA BA-44, located in the JDA Lab. Arrow indicates location of sample.



Photos #9 and #10: Sample IA BB-24, located in the Mechanical Room with three "Spencer" vacuum machines. Photo #10 is taken at the sample location looking into the room.


Photo #11: Sample IA BB-39, located in the Semiconductor Cooling Technology Lab. A duplicate sample (not photographed) was also collected from this location, immediately adjacent to the primary sample. Arrow indicates the locations of two monitoring wells. MW-572 has historically contained separate phase solvent.



Photo #12: Sample IA BC-32, located in the Former Punch room.



Photo #13: Sample IA BD-25, located in the Screening room in the 80K Area.



Photo #14: Sample IA BE-23, located in the Punch room in the 80K Area.



Photo #15: Sample IA BE-28, located in the Midas area.



Photo #16: Sample IA BF-24, located in the Punch room in the 80K Area.



Photo #17: Sample IA BF-34, located in the Former Manufacturing area.



Photo #18: Sample IA BG-22, located in Crib 2 in the 80K Area.



Photo #19: Sample IA BG-24, located in the Gowning room of the 80K Area. Arrow indicates location of exhaust line for subslab vapor extraction system.



Photos #20: Sample IA BG-45, located in the Reliability Lab.



Photos #21 and #22: Sample AA AC-15, located in the plenum intake for AC-15. Arrow indicates location of outside air dampers, which are approximately 11 to 15 feet above the floor of the plenum.



Photos #23: Sample AA MAU-72, located in the plenum intake for MAU-72.

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# **APPENDIX C**

# HVAC OPERATION DURING SAMPLING

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#### TABLE C-1 Summary of HVAC Unit Outside Air Damper Positions Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Hopewell Junction, New York

| HVAC Unit     | Outside Air<br>Damper - Normal<br>Operating Position | Outside Air Damper<br>Minimum<br>Position (% Open) | Source of Information<br>Regarding Minimum<br>Position |
|---------------|--|--|--|
| Building 330D |  |  |  |
| AC-4          | Fixed - no variation                                 | 50   |  |
| AC-6A2        | Fixed - no variation                                 | 20   | Control System   |
| AC-12         | Fixed - no variation                                 | 40   |  |
| AC-13         | Fixed - no variation                                 | NA <sup>2</sup>                                    | Observed   |
| AC-14         | Auto - variable                                      | 20   |  |
| AC-15         | Auto - variable                                      | 20   | Control System   |
| AC-25         | Auto - variable                                      | 22   | Control System   |
| AC-60         | Auto - variable                                      | 30   |  |
| AC-61         | Auto - variable                                      | NA <sup>2</sup>                                    | Observed   |
| AC-69         | Fixed - no variation                                 | 10   |  |
| AC-71         | Auto - variable                                      | 20   |  |
| AC-83         | Fixed - no variation                                 | 30   |  |
| MAU-5B2       | Fixed - no variation                                 | NA <sup>3</sup>                                    |  |
| MAU-6B1       | Fixed - no variation                                 | NA <sup>3</sup>                                    | Control System   |
| MAU-72        | Fixed - no variation                                 | NA <sup>3</sup>                                    |  |
| MAU-79        | OFF  | $\mathrm{OFF}^4$                                   |  |
| MAU-82        | Fixed - no variation                                 | NA <sup>3</sup>                                    |  |

Notes:

1. This table summarizes the normal operating configration for the outside air dampers for each heating, ventilation and air conditioning (HVAC) unit serving the zones sampled. For dampers that automatically modulate, these dampers were set and fixed in their minimum position at least 24 hours prior to and during sampling.

2. Outside air dampers for these units were not accessible, and the units are not on the control system; therefore, minimum outside air damper positions could not be determined.

3. These are make-up air units that operate at 100 percent outside air. Damper positions remain contant and were not adjusted during sampling.

4. MAU-79 was not in use during sampling. When the make-up air unit is operational, it operates at 100 percent outside air and damper positions remain constant.

#### TABLE C-2 Summary of Damper Position Survey During Sampling Performance Monitoring and Confirmatory Sampling Results Building 330D VOC Source Assessment IBM East Fishkill Hopewell Junction, New York

|           | Date and Time of Inspection  |                               |                 |                |                |           |
|-----------|--|-------------------------------|-----------------|----------------|----------------|-----------|
| HVAC Unit | Assessment   | 7/20/2011 7/25/2011 7/26/2011 |                 |                |                |           |
|           | гуре   | 1100 hrs                      | 1300 hrs        | 1000 hrs       | 1215 hrs       | 1430 hrs  |
|           | Fusible Link   |                               | -               | -              | -              | -         |
| AC-4      | Visual   |                               | ✓               | ✓              | ✓              | √         |
|           | Control System   |                               | √               | √              | √              | √         |
|           | Fusible Link   |                               | -               | -              | -              | -         |
| AC-6A2    | Visual   |                               | ✓               | 1              | ✓              | √         |
|           | Control System   |                               | ✓               | ~              | ✓              | √         |
|           | Fusible Link   |                               | -               | -              | -              | -         |
| AC-12     | Visual   |                               | ✓               | ✓              | ✓              | √         |
|           | Control System   |                               | ✓               | ~              | ✓              | √         |
|           | Fusible Link   |                               | -               | -              | -              | -         |
| AC-13     | Visual   |                               | ✓               | ✓              | ✓              | √         |
|           | Control System   |                               | -               | -              | -              | -         |
|           | Fusible Link   | -                             | -               | -              | -              | -         |
| AC-14     | Visual   | ✓                             | ✓               | ✓              | ✓              | √         |
|           | Control System   | ✓                             | ✓               | ✓              | ✓              | ✓         |
|           | Fusible Link   | -                             | -               | -              | -              | -         |
| AC-15     | Visual   | ✓                             | ✓               | ✓              | ✓              | ✓         |
|           | Control System   | ✓                             | ✓               | ~              | ✓              | √         |
|           | Fusible Link   | -                             | -               | -              | -              | -         |
| AC-25     | Visual   | ✓                             | ✓               | ✓              | ✓              | √         |
|           | Control System   | ✓                             | ✓               | ✓              | ✓              | √         |
|           | Fusible Link   | -                             | -               | -              | -              | -         |
| AC-60     | Visual   | ✓                             | ✓               | ✓              | ✓              | √         |
|           | Control System   | ✓                             | ✓               | ✓              | ✓              | ✓         |
|           | Fusible Link   | -                             | -               | -              | -              | -         |
| AC-61     | Visual   | ✓                             | ✓               | ✓              | ✓              | ✓         |
|           | Control System   | -                             | -               | -              | -              | -         |
|           | Fusible Link   |                               | -               | -              | -              | -         |
| AC-69     | Visual   |                               | ✓               | ✓              | ✓              | ✓         |
|           | Control System   |                               | ✓               | ~              | ✓              | √         |
|           | Fusible Link   | Installed                     | ✓               | ~              | ✓              | ✓         |
| AC-71     | Visual   | ✓                             | ✓               | ✓              | ✓              | √         |
|           | Control System   | ✓                             | ✓               | √              | $\checkmark$   | √         |
|           | Fusible Link   |                               | -               | -              | -              | -         |
| AC-83     | Visual   |                               | ✓               | <b>√</b>       | ✓              | ✓         |
|           | Control System   |                               | $\checkmark$    | $\checkmark$   | $\checkmark$   | ✓         |
| MAU-5B2   | These are ma   | ke-up air unit                | s that normall  | y operate at 1 | 100% outside   | e air. No |
| MAU-6B1   | changes to outs  | side air dampe                | er positions w  | vere made, an  | d no fusible l | inks were |
| MAU-72    |  | ir                            | istalled on the | ese units.     |                |           |
| MAU-79    |  |                               | OFF             |                |                |           |
| MAU-82    | This is a make-up air unit that normally operates at 100% outside air. No changes to outside air damper positions were made, and no fusible links were installed on this unit. |                               |                 |                |                |           |

Notes:

1. Fusible links were constructed from nylon zip ties and masking tape; visual assessment was performed by visually observing the outside air damper positions; control system observations were made by checking the outside air damper postions on the HVAC control system. Dampers were inspected several times during sampling to determine if outside air dampers changed positions.

2. The outside air dampers on air handling units that automatically modulate were set and locked in their minimum positions on July 20, 2011. Air handling units with fixed position dampers were not adjusted, and their damper positions were not assessed unitl July 25, 2011. Shaded cells indicate that the unit was not assessed.

3. " $\checkmark$ " indicates that during inspection, the damper positions were observed to be in the position set prior to sampling.

4. "-" indicates that a fusible link was not installed or that the unit is not available on the HVAC control system.

# **APPENDIX D**

# ANALYTICAL LABORATORY DATA RESULTS

# (ENCLOSED ON CD)

SANBORN II HEAD ENGINEERING



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Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020 Hours 8:00 A.M to 6:00 P.M. Pacific



## WORK ORDER #: 0806409A

Work Order Summary

| CLIENT:                           | Ms. Claire Lund<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:      | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------------------------|---|---------------|--|
| PHONE:                            | 603-229-1900  | <b>P.O.</b> # | 2924.00.020  |
| FAX:                              | 603-229-1919  | PROJECT #     | 2924.00.020 80K  |
| DATE RECEIVED:<br>DATE COMPLETED: | 06/20/2008<br>07/03/2008  | CONTACT:      | Bryanna Langley  |

|            |                     |                | RECEIPT    | FINAL    |
|------------|---------------------|----------------|------------|----------|
| FRACTION # | <u>NAME</u>         | <u>TEST</u>    | VAC./PRES. | PRESSURE |
| 03A        | IA-03               | Modified TO-15 | 4.5 "Hg    | 5 psi    |
| 03AA       | IA-03 Lab Duplicate | Modified TO-15 | 4.5 "Hg    | 5 psi    |
| 04A        | IA-04               | Modified TO-15 | 7.5 "Hg    | 5 psi    |
| 05A        | Lab Blank           | Modified TO-15 | NA         | NA       |
| 06A        | CCV                 | Modified TO-15 | NA         | NA       |
| 07A        | LCS                 | Modified TO-15 | NA         | NA       |
|            |                     |                |            |          |

Sinda d. Fruman

DATE: <u>07/03/08</u>

Laboratory Director

CERTIFIED BY:

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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Page 1 of 16



## LABORATORY NARRATIVE Modified TO-15 Sanborn, Head & Associates Workorder# 0806409A

Two 6 Liter Summa Canister (SIM Certified) samples were received on June 20, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 0.2 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

| Requirement             | TO-15                         | ATL Modifications  |
|-------------------------|-------------------------------|--|
| Daily CCV               | +- 30% Difference             | = 30% Difference with two allowed out up to </=40%.;<br flag and narrate outliers  |
| Sample collection media | Summa canister                | ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request   |
| Method Detection Limit  | Follow 40CFR Pt.136<br>App. B | The MDL met all relevant requirements in Method TO-15<br>(statistical MDL less than the LOQ). The concentration of<br>the spiked replicate may have exceeded 10X the calculated<br>MDL in some cases |

# **Receiving Notes**

There were no receiving discrepancies.

# **Analytical Notes**

All Quality Control Limit failures 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. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

# **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 no performed).

J - Estimated value.

- E Exceeds instrument calibration range.
- S Saturated peak.



- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

#### Client Sample ID: IA-03

#### Lab ID#: 0806409A-03A

| Compound                         | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Ethanol                          | 3.2                  | 10               | 6.0                   | 19                |
| Acetone                          | 3.2                  | 9.2              | 7.5                   | 22                |
| 2-Propanol                       | 3.2                  | 5.6              | 7.8                   | 14                |
| Carbon Disulfide                 | 0.79                 | 0.93             | 2.5                   | 2.9               |
| Hexane                           | 0.79                 | 1.4              | 2.8                   | 4.8               |
| 2-Butanone (Methyl Ethyl Ketone) | 0.79                 | 1.1              | 2.3                   | 3.3               |
| Toluene                          | 0.79                 | 8.9              | 3.0                   | 34                |
| Tetrachloroethene                | 0.79                 | 13               | 5.4                   | 92                |
| Ethyl Benzene                    | 0.79                 | 0.85             | 3.4                   | 3.7               |
| m,p-Xylene                       | 0.79                 | 0.91             | 3.4                   | 3.9               |

#### Client Sample ID: IA-03 Lab Duplicate

#### Lab ID#: 0806409A-03AA

| Compound                         | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|----------------------------------|----------------------|------------------|-----------------------|-------------------|
| Ethanol                          | 3.2                  | 9.2              | 6.0                   | 17                |
| Acetone                          | 3.2                  | 9.0              | 7.5                   | 21                |
| 2-Propanol                       | 3.2                  | 5.3              | 7.8                   | 13                |
| Carbon Disulfide                 | 0.79                 | 0.92             | 2.5                   | 2.8               |
| Hexane                           | 0.79                 | 1.3              | 2.8                   | 4.5               |
| 2-Butanone (Methyl Ethyl Ketone) | 0.79                 | 1.1              | 2.3                   | 3.2               |
| Toluene                          | 0.79                 | 8.7              | 3.0                   | 33                |
| Tetrachloroethene                | 0.79                 | 14               | 5.4                   | 96                |
| Ethyl Benzene                    | 0.79                 | 0.93             | 3.4                   | 4.0               |
| m,p-Xylene                       | 0.79                 | 0.92             | 3.4                   | 4.0               |

#### Client Sample ID: IA-04

#### Lab ID#: 0806409A-04A

|            | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|------------|------------|--------|------------|---------|
| Compound   | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Ethanol    | 3.6        | 3.5 J  | 6.7        | 6.7 J   |
| 2-Propanol | 3.6        | 13     | 8.8        | 31      |
| Toluene    | 0.90       | 1.3    | 3.4        | 5.0     |



Client Sample ID: IA-03

Lab ID#: 0806409A-03A

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

| File Name:<br>Dil. Factor:       | z062619   |                    | Date of Collection: | 6/18/08<br>/27/08 02:50 AM |
|----------------------------------|-----------|--------------------|---------------------|----------------------------|
|                                  | Dot Limit | Amount             | Rnt Limit           |                            |
| Compound                         | (ppby)    | (ppby)             | (uG/m3)             | (uG/m3)                    |
| Eroon 12                         | 0.79      |                    | 3.0                 | Not Detected               |
| Freen 114                        | 0.79      | Not Detected       | 5.5                 | Not Detected               |
| Chloromothana                    | 0.79      | Not Detected       | 5.5                 | Not Detected               |
| Vinul Chlorida                   | 0.70      | Not Detected       | 2.0                 | Not Detected               |
| 1 2 Rutadiana                    | 0.79      | Not Detected       | 2.0                 | Not Detected               |
| Promomothano                     | 0.79      | Not Detected       | 2.1                 | Not Detected               |
| Chloroothana                     | 0.79      | Not Detected       | J. I<br>D 1         | Not Detected               |
| From 11                          | 0.79      | Not Detected       | 2.1                 | Not Detected               |
| Fleon                            | 0.79      |                    | 4.4                 |                            |
|                                  | 3.Z       | IU<br>Not Detected | 6.0                 | 19<br>Not Detected         |
|                                  | 0.79      | Not Detected       | 0.0                 | Not Detected               |
| 1,1-Dichloroethene               | 0.79      |                    | 3.1                 |                            |
| Acetone                          | 3.2       | 9.2                | 7.5                 | 22                         |
| 2-Propanol                       | 3.2       | 5.6                | 7.8                 | 14                         |
| Carbon Disulfide                 | 0.79      | 0.93               | 2.5                 | 2.9                        |
| 3-Chloropropene                  | 3.2       | Not Detected       | 9.9                 | Not Detected               |
| Methylene Chloride               | 0.79      | Not Detected       | 2.7                 | Not Detected               |
| Methyl tert-butyl ether          | 0.79      | Not Detected       | 2.8                 | Not Detected               |
| trans-1,2-Dichloroethene         | 0.79      | Not Detected       | 3.1                 | Not Detected               |
| Hexane                           | 0.79      | 1.4                | 2.8                 | 4.8                        |
| 1,1-Dichloroethane               | 0.79      | Not Detected       | 3.2                 | Not Detected               |
| 2-Butanone (Methyl Ethyl Ketone) | 0.79      | 1.1                | 2.3                 | 3.3                        |
| cis-1,2-Dichloroethene           | 0.79      | Not Detected       | 3.1                 | Not Detected               |
| Tetrahydrofuran                  | 0.79      | Not Detected       | 2.3                 | Not Detected               |
| Chloroform                       | 0.79      | Not Detected       | 3.8                 | Not Detected               |
| 1,1,1-Trichloroethane            | 0.79      | Not Detected       | 4.3                 | Not Detected               |
| Cyclohexane                      | 0.79      | Not Detected       | 2.7                 | Not Detected               |
| Carbon Tetrachloride             | 0.79      | Not Detected       | 5.0                 | Not Detected               |
| 2,2,4-Trimethylpentane           | 0.79      | Not Detected       | 3.7                 | Not Detected               |
| Benzene                          | 0.79      | Not Detected       | 2.5                 | Not Detected               |
| 1,2-Dichloroethane               | 0.79      | Not Detected       | 3.2                 | Not Detected               |
| Heptane                          | 0.79      | Not Detected       | 3.2                 | Not Detected               |
| Trichloroethene                  | 0.79      | Not Detected       | 4.2                 | Not Detected               |
| 1,2-Dichloropropane              | 0.79      | Not Detected       | 3.6                 | Not Detected               |
| 1,4-Dioxane                      | 3.2       | Not Detected       | 11                  | Not Detected               |
| Bromodichloromethane             | 0.79      | Not Detected       | 5.3                 | Not Detected               |
| cis-1,3-Dichloropropene          | 0.79      | Not Detected       | 3.6                 | Not Detected               |
| 4-Methyl-2-pentanone             | 0.79      | Not Detected       | 3.2                 | Not Detected               |
| Toluene                          | 0.79      | 8.9                | 3.0                 | 34                         |
| trans-1,3-Dichloropropene        | 0.79      | Not Detected       | 3.6                 | Not Detected               |



Client Sample ID: IA-03 Lab ID#: 0806409A-03A

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

| File Name:                | z062619              |                    | Date of Collection: 6/18/08 |                    |
|---------------------------|----------------------|--------------------|-----------------------------|--------------------|
| Dil. Factor:              | 1.58                 |                    | Date of Analysis: 6/2       | 27/08 02:50 AM     |
| Compound                  | Rpt. Limit<br>(ppby) | Amount<br>(ppbv)   | Rpt. Limit<br>(uG/m3)       | Amount<br>(uG/m3)  |
| 1 1 2 Triphleroothana     | 0.70                 | Not Detected       | 13                          | Not Detected       |
|                           | 0.79                 |                    | 4.5<br>5.4                  |                    |
|                           | 0.79                 | ای<br>Not Dotostad | 0.4<br>12                   | 92<br>Not Dotoctod |
| 2-Hexanone                | 3.2                  | Not Detected       | 13                          | Not Detected       |
| Dibromochloromethane      | 0.79                 | Not Detected       | 6.7                         | Not Detected       |
| 1,2-Dibromoethane (EDB)   | 0.79                 | Not Detected       | 6.1                         | Not Detected       |
| Chlorobenzene             | 0.79                 | Not Detected       | 3.6                         | Not Detected       |
| Ethyl Benzene             | 0.79                 | 0.85               | 3.4                         | 3.7                |
| m,p-Xylene                | 0.79                 | 0.91               | 3.4                         | 3.9                |
| o-Xylene                  | 0.79                 | Not Detected       | 3.4                         | Not Detected       |
| Styrene                   | 0.79                 | Not Detected       | 3.4                         | Not Detected       |
| Bromoform                 | 0.79                 | Not Detected       | 8.2                         | Not Detected       |
| Cumene                    | 0.79                 | Not Detected       | 3.9                         | Not Detected       |
| 1,1,2,2-Tetrachloroethane | 0.79                 | Not Detected       | 5.4                         | Not Detected       |
| Propylbenzene             | 0.79                 | Not Detected       | 3.9                         | Not Detected       |
| 4-Ethyltoluene            | 0.79                 | Not Detected       | 3.9                         | Not Detected       |
| 1,3,5-Trimethylbenzene    | 0.79                 | Not Detected       | 3.9                         | Not Detected       |
| 1,2,4-Trimethylbenzene    | 0.79                 | Not Detected       | 3.9                         | Not Detected       |
| 1,3-Dichlorobenzene       | 0.79                 | Not Detected       | 4.8                         | Not Detected       |
| 1,4-Dichlorobenzene       | 0.79                 | Not Detected       | 4.8                         | Not Detected       |
| alpha-Chlorotoluene       | 0.79                 | Not Detected       | 4.1                         | Not Detected       |
| 1,2-Dichlorobenzene       | 0.79                 | Not Detected       | 4.7                         | Not Detected       |
| 1,2,4-Trichlorobenzene    | 3.2                  | Not Detected       | 23                          | Not Detected       |
| Hexachlorobutadiene       | 3.2                  | Not Detected       | 34                          | Not Detected       |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| Toluene-d8            | 106       | 70-130 |
| 1,2-Dichloroethane-d4 | 116       | 70-130 |
| 4-Bromofluorobenzene  | 102       | 70-130 |



# Client Sample ID: IA-03 Lab Duplicate Lab ID#: 0806409A-03AA

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

| File Name:<br>Dil. Factor:       | z062620<br>1.58 |              | Date of Collection: 6 | 6/18/08<br>27/08 03:40 AM |
|----------------------------------|-----------------|--------------|-----------------------|---------------------------|
|                                  | Rpt. Limit      | Amount       | Rpt. Limit            | Amount                    |
| Compound                         | (ppbv)          | (ppbv)       | (uG/m3)               | (uG/m3)                   |
| Freon 12                         | 0.79            | Not Detected | 3.9                   | Not Detected              |
| Freon 114                        | 0.79            | Not Detected | 5.5                   | Not Detected              |
| Chloromethane                    | 3.2             | Not Detected | 6.5                   | Not Detected              |
| Vinyl Chloride                   | 0.79            | Not Detected | 2.0                   | Not Detected              |
| 1,3-Butadiene                    | 0.79            | Not Detected | 1.7                   | Not Detected              |
| Bromomethane                     | 0.79            | Not Detected | 3.1                   | Not Detected              |
| Chloroethane                     | 0.79            | Not Detected | 2.1                   | Not Detected              |
| Freon 11                         | 0.79            | Not Detected | 4.4                   | Not Detected              |
| Ethanol                          | 3.2             | 9.2          | 6.0                   | 17                        |
| Freon 113                        | 0.79            | Not Detected | 6.0                   | Not Detected              |
| 1,1-Dichloroethene               | 0.79            | Not Detected | 3.1                   | Not Detected              |
| Acetone                          | 3.2             | 9.0          | 7.5                   | 21                        |
| 2-Propanol                       | 3.2             | 5.3          | 7.8                   | 13                        |
| Carbon Disulfide                 | 0.79            | 0.92         | 2.5                   | 2.8                       |
| 3-Chloropropene                  | 3.2             | Not Detected | 9.9                   | Not Detected              |
| Methylene Chloride               | 0.79            | Not Detected | 2.7                   | Not Detected              |
| Methyl tert-butyl ether          | 0.79            | Not Detected | 2.8                   | Not Detected              |
| trans-1,2-Dichloroethene         | 0.79            | Not Detected | 3.1                   | Not Detected              |
| Hexane                           | 0.79            | 1.3          | 2.8                   | 4.5                       |
| 1,1-Dichloroethane               | 0.79            | Not Detected | 3.2                   | Not Detected              |
| 2-Butanone (Methyl Ethyl Ketone) | 0.79            | 1.1          | 2.3                   | 3.2                       |
| cis-1,2-Dichloroethene           | 0.79            | Not Detected | 3.1                   | Not Detected              |
| Tetrahydrofuran                  | 0.79            | Not Detected | 2.3                   | Not Detected              |
| Chloroform                       | 0.79            | Not Detected | 3.8                   | Not Detected              |
| 1,1,1-Trichloroethane            | 0.79            | Not Detected | 4.3                   | Not Detected              |
| Cyclohexane                      | 0.79            | Not Detected | 2.7                   | Not Detected              |
| Carbon Tetrachloride             | 0.79            | Not Detected | 5.0                   | Not Detected              |
| 2,2,4-Trimethylpentane           | 0.79            | Not Detected | 3.7                   | Not Detected              |
| Benzene                          | 0.79            | Not Detected | 2.5                   | Not Detected              |
| 1,2-Dichloroethane               | 0.79            | Not Detected | 3.2                   | Not Detected              |
| Heptane                          | 0.79            | Not Detected | 3.2                   | Not Detected              |
| Trichloroethene                  | 0.79            | Not Detected | 4.2                   | Not Detected              |
| 1,2-Dichloropropane              | 0.79            | Not Detected | 3.6                   | Not Detected              |
| 1,4-Dioxane                      | 3.2             | Not Detected | 11                    | Not Detected              |
| Bromodichloromethane             | 0.79            | Not Detected | 5.3                   | Not Detected              |
| cis-1,3-Dichloropropene          | 0.79            | Not Detected | 3.6                   | Not Detected              |
| 4-Methyl-2-pentanone             | 0.79            | Not Detected | 3.2                   | Not Detected              |
| Toluene                          | 0.79            | 8.7          | 3.0                   | 33                        |
| trans-1,3-Dichloropropene        | 0.79            | Not Detected | 3.6                   | Not Detected              |



# Client Sample ID: IA-03 Lab Duplicate Lab ID#: 0806409A-03AA

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

| File Name:                | z062620    |              | Date of Collection:  | 6/18/08        |
|---------------------------|------------|--------------|----------------------|----------------|
| Dil. Factor:              | 1.58       |              | Date of Analysis: 6/ | 27/08 03:40 AM |
|                           | Rpt. Limit | Amount       | Rpt. Limit           | Amount         |
| Compound                  | (ppbv)     | (ppbv)       | (uG/m3)              | (uG/m3)        |
| 1,1,2-Trichloroethane     | 0.79       | Not Detected | 4.3                  | Not Detected   |
| Tetrachloroethene         | 0.79       | 14           | 5.4                  | 96             |
| 2-Hexanone                | 3.2        | Not Detected | 13                   | Not Detected   |
| Dibromochloromethane      | 0.79       | Not Detected | 6.7                  | Not Detected   |
| 1,2-Dibromoethane (EDB)   | 0.79       | Not Detected | 6.1                  | Not Detected   |
| Chlorobenzene             | 0.79       | Not Detected | 3.6                  | Not Detected   |
| Ethyl Benzene             | 0.79       | 0.93         | 3.4                  | 4.0            |
| m,p-Xylene                | 0.79       | 0.92         | 3.4                  | 4.0            |
| o-Xylene                  | 0.79       | Not Detected | 3.4                  | Not Detected   |
| Styrene                   | 0.79       | Not Detected | 3.4                  | Not Detected   |
| Bromoform                 | 0.79       | Not Detected | 8.2                  | Not Detected   |
| Cumene                    | 0.79       | Not Detected | 3.9                  | Not Detected   |
| 1,1,2,2-Tetrachloroethane | 0.79       | Not Detected | 5.4                  | Not Detected   |
| Propylbenzene             | 0.79       | Not Detected | 3.9                  | Not Detected   |
| 4-Ethyltoluene            | 0.79       | Not Detected | 3.9                  | Not Detected   |
| 1,3,5-Trimethylbenzene    | 0.79       | Not Detected | 3.9                  | Not Detected   |
| 1,2,4-Trimethylbenzene    | 0.79       | Not Detected | 3.9                  | Not Detected   |
| 1,3-Dichlorobenzene       | 0.79       | Not Detected | 4.8                  | Not Detected   |
| 1,4-Dichlorobenzene       | 0.79       | Not Detected | 4.8                  | Not Detected   |
| alpha-Chlorotoluene       | 0.79       | Not Detected | 4.1                  | Not Detected   |
| 1,2-Dichlorobenzene       | 0.79       | Not Detected | 4.7                  | Not Detected   |
| 1,2,4-Trichlorobenzene    | 3.2        | Not Detected | 23                   | Not Detected   |
| Hexachlorobutadiene       | 3.2        | Not Detected | 34                   | Not Detected   |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| Toluene-d8            | 102       | 70-130 |  |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |  |
| 4-Bromofluorobenzene  | 101       | 70-130 |  |



Client Sample ID: IA-04 Lab ID#: 0806409A-04A

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

| File Name:<br>Dil. Factor:       | z062621<br>1.79 |              | Date of Collection: 6 | 6/18/08<br>27/08 04:28 AM |
|----------------------------------|-----------------|--------------|-----------------------|---------------------------|
|                                  | Rnt Limit       | Amount       | Rot I imit            | Amount                    |
| Compound                         | (ppbv)          | (ppbv)       | (uG/m3)               | (uG/m3)                   |
| Ereon 12                         | 0.90            | Not Detected | 4.4                   | Not Detected              |
| Freon 114                        | 0.90            | Not Detected | 6.2                   | Not Detected              |
| Chloromethane                    | 3.6             | Not Detected | 7.4                   | Not Detected              |
| Vinvl Chloride                   | 0.90            | Not Detected | 2.3                   | Not Detected              |
| 1.3-Butadiene                    | 0.90            | Not Detected | 2.0                   | Not Detected              |
| Bromomethane                     | 0.90            | Not Detected | 3.5                   | Not Detected              |
| Chloroethane                     | 0.90            | Not Detected | 2.4                   | Not Detected              |
| Freon 11                         | 0.90            | Not Detected | 5.0                   | Not Detected              |
| Ethanol                          | 3.6             | 3.5 J        | 6.7                   | 6.7 J                     |
| Freon 113                        | 0.90            | Not Detected | 6.8                   | Not Detected              |
| 1,1-Dichloroethene               | 0.90            | Not Detected | 3.5                   | Not Detected              |
| Acetone                          | 3.6             | Not Detected | 8.5                   | Not Detected              |
| 2-Propanol                       | 3.6             | 13           | 8.8                   | 31                        |
| Carbon Disulfide                 | 0.90            | Not Detected | 2.8                   | Not Detected              |
| 3-Chloropropene                  | 3.6             | Not Detected | 11                    | Not Detected              |
| Methylene Chloride               | 0.90            | Not Detected | 3.1                   | Not Detected              |
| Methyl tert-butyl ether          | 0.90            | Not Detected | 3.2                   | Not Detected              |
| trans-1,2-Dichloroethene         | 0.90            | Not Detected | 3.5                   | Not Detected              |
| Hexane                           | 0.90            | Not Detected | 3.2                   | Not Detected              |
| 1,1-Dichloroethane               | 0.90            | Not Detected | 3.6                   | Not Detected              |
| 2-Butanone (Methyl Ethyl Ketone) | 0.90            | Not Detected | 2.6                   | Not Detected              |
| cis-1,2-Dichloroethene           | 0.90            | Not Detected | 3.5                   | Not Detected              |
| Tetrahydrofuran                  | 0.90            | Not Detected | 2.6                   | Not Detected              |
| Chloroform                       | 0.90            | Not Detected | 4.4                   | Not Detected              |
| 1,1,1-Trichloroethane            | 0.90            | Not Detected | 4.9                   | Not Detected              |
| Cyclohexane                      | 0.90            | Not Detected | 3.1                   | Not Detected              |
| Carbon Tetrachloride             | 0.90            | Not Detected | 5.6                   | Not Detected              |
| 2,2,4-Trimethylpentane           | 0.90            | Not Detected | 4.2                   | Not Detected              |
| Benzene                          | 0.90            | Not Detected | 2.8                   | Not Detected              |
| 1,2-Dichloroethane               | 0.90            | Not Detected | 3.6                   | Not Detected              |
| Heptane                          | 0.90            | Not Detected | 3.7                   | Not Detected              |
| Trichloroethene                  | 0.90            | Not Detected | 4.8                   | Not Detected              |
| 1,2-Dichloropropane              | 0.90            | Not Detected | 4.1                   | Not Detected              |
| 1,4-Dioxane                      | 3.6             | Not Detected | 13                    | Not Detected              |
| Bromodichloromethane             | 0.90            | Not Detected | 6.0                   | Not Detected              |
| cis-1,3-Dichloropropene          | 0.90            | Not Detected | 4.1                   | Not Detected              |
| 4-Methyl-2-pentanone             | 0.90            | Not Detected | 3.7                   | Not Detected              |
| Toluene                          | 0.90            | 1.3          | 3.4                   | 5.0                       |
| trans-1,3-Dichloropropene        | 0.90            | Not Detected | 4.1                   | Not Detected              |



Client Sample ID: IA-04 Lab ID#: 0806409A-04A

Lab 1D#: 0000407A-04A

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

| File Name:<br>Dil. Factor: | z062621<br>1.79      |                  | Date of Collection:<br>Date of Analysis: 6/ | 6/18/08<br>/27/08 04:28 AM |
|----------------------------|----------------------|------------------|---|----------------------------|
| Compound                   | Røt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                       | Amount<br>(uG/m3)          |
| 1,1,2-Trichloroethane      | 0.90                 | Not Detected     | 4.9   | Not Detected               |
| Tetrachloroethene          | 0.90                 | Not Detected     | 6.1   | Not Detected               |
| 2-Hexanone                 | 3.6                  | Not Detected     | 15  | Not Detected               |
| Dibromochloromethane       | 0.90                 | Not Detected     | 7.6   | Not Detected               |
| 1,2-Dibromoethane (EDB)    | 0.90                 | Not Detected     | 6.9   | Not Detected               |
| Chlorobenzene              | 0.90                 | Not Detected     | 4.1   | Not Detected               |
| Ethyl Benzene              | 0.90                 | Not Detected     | 3.9   | Not Detected               |
| m,p-Xylene                 | 0.90                 | Not Detected     | 3.9   | Not Detected               |
| o-Xylene                   | 0.90                 | Not Detected     | 3.9   | Not Detected               |
| Styrene                    | 0.90                 | Not Detected     | 3.8   | Not Detected               |
| Bromoform                  | 0.90                 | Not Detected     | 9.2   | Not Detected               |
| Cumene                     | 0.90                 | Not Detected     | 4.4   | Not Detected               |
| 1,1,2,2-Tetrachloroethane  | 0.90                 | Not Detected     | 6.1   | Not Detected               |
| Propylbenzene              | 0.90                 | Not Detected     | 4.4   | Not Detected               |
| 4-Ethyltoluene             | 0.90                 | Not Detected     | 4.4   | Not Detected               |
| 1,3,5-Trimethylbenzene     | 0.90                 | Not Detected     | 4.4   | Not Detected               |
| 1,2,4-Trimethylbenzene     | 0.90                 | Not Detected     | 4.4   | Not Detected               |
| 1,3-Dichlorobenzene        | 0.90                 | Not Detected     | 5.4   | Not Detected               |
| 1,4-Dichlorobenzene        | 0.90                 | Not Detected     | 5.4   | Not Detected               |
| alpha-Chlorotoluene        | 0.90                 | Not Detected     | 4.6   | Not Detected               |
| 1,2-Dichlorobenzene        | 0.90                 | Not Detected     | 5.4   | Not Detected               |
| 1,2,4-Trichlorobenzene     | 3.6                  | Not Detected     | 26  | Not Detected               |
| Hexachlorobutadiene        | 3.6                  | Not Detected     | 38  | Not Detected               |

J = Estimated value.

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| Toluene-d8            | 102       | 70-130 |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



Client Sample ID: Lab Blank

Lab ID#: 0806409A-05A

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

| File Name:<br>Dil. Factor:       | z062606<br>1.00 |              | Date of Collection: N<br>Date of Analysis: 6 | IA<br>/26/08 02:39 PM |
|----------------------------------|-----------------|--------------|--|-----------------------|
|                                  | Rpt. Limit      | Amount       | Rpt. Limit                                   | Amount                |
| Compound                         | (ppbv)          | (ppbv)       | (uG/m3)                                      | (uG/m3)               |
| Freon 12                         | 0.50            | Not Detected | 2.5  | Not Detected          |
| Freon 114                        | 0.50            | Not Detected | 3.5  | Not Detected          |
| Chloromethane                    | 2.0             | Not Detected | 4.1  | Not Detected          |
| Vinyl Chloride                   | 0.50            | Not Detected | 1.3  | Not Detected          |
| 1,3-Butadiene                    | 0.50            | Not Detected | 1.1  | Not Detected          |
| Bromomethane                     | 0.50            | Not Detected | 1.9  | Not Detected          |
| Chloroethane                     | 0.50            | Not Detected | 1.3  | 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                          | 2.0             | Not Detected | 4.8  | Not Detected          |
| 2-Propanol                       | 2.0             | Not Detected | 4.9  | Not Detected          |
| Carbon Disulfide                 | 0.50            | Not Detected | 1.6  | Not Detected          |
| 3-Chloropropene                  | 2.0             | Not Detected | 6.3  | Not Detected          |
| Methylene Chloride               | 0.50            | Not Detected | 1.7  | 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) | 0.50            | Not Detected | 1.5  | 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          |



Client Sample ID: Lab Blank

Lab ID#: 0806409A-05A

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

| File Name:<br>Dil. Factor: | z062606              |                  | Date of Collection: N | A<br>26/08 02·39 PM |
|----------------------------|----------------------|------------------|-----------------------|---------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3)   |
| 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        |
| Dibromochloromethane       | 0.50                 | Not Detected     | 4.2                   | Not Detected        |
| 1,2-Dibromoethane (EDB)    | 0.50                 | Not Detected     | 3.8                   | Not Detected        |
| Chlorobenzene              | 0.50                 | Not Detected     | 2.3                   | Not Detected        |
| Ethyl Benzene              | 0.50                 | Not Detected     | 2.2                   | Not Detected        |
| m,p-Xylene                 | 0.50                 | Not Detected     | 2.2                   | Not Detected        |
| o-Xylene                   | 0.50                 | Not Detected     | 2.2                   | Not Detected        |
| Styrene                    | 0.50                 | Not Detected     | 2.1                   | Not Detected        |
| Bromoform                  | 0.50                 | Not Detected     | 5.2                   | Not Detected        |
| Cumene                     | 0.50                 | Not Detected     | 2.4                   | Not Detected        |
| 1,1,2,2-Tetrachloroethane  | 0.50                 | Not Detected     | 3.4                   | Not Detected        |
| Propylbenzene              | 0.50                 | Not Detected     | 2.4                   | Not Detected        |
| 4-Ethyltoluene             | 0.50                 | Not Detected     | 2.4                   | Not Detected        |
| 1,3,5-Trimethylbenzene     | 0.50                 | Not Detected     | 2.4                   | Not Detected        |
| 1,2,4-Trimethylbenzene     | 0.50                 | Not Detected     | 2.4                   | Not Detected        |
| 1,3-Dichlorobenzene        | 0.50                 | Not Detected     | 3.0                   | Not Detected        |
| 1,4-Dichlorobenzene        | 0.50                 | Not Detected     | 3.0                   | Not Detected        |
| alpha-Chlorotoluene        | 0.50                 | Not Detected     | 2.6                   | Not Detected        |
| 1,2-Dichlorobenzene        | 0.50                 | Not Detected     | 3.0                   | Not Detected        |
| 1,2,4-Trichlorobenzene     | 2.0                  | Not Detected     | 15                    | Not Detected        |
| Hexachlorobutadiene        | 2.0                  | Not Detected     | 21                    | Not Detected        |

# Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| Toluene-d8            | 101       | 70-130 |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



Client Sample ID: CCV

Lab ID#: 0806409A-06A

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

| File Name:                       | z062604 | Date of Collection: NA             |
|----------------------------------|---------|------------------------------------|
| Dii. Factor.                     | 1.00    | Date of Analysis: 0/20/06 12:25 PM |
| Compound                         |         | %Recovery                          |
| Freon 12                         |         | 104                                |
| Freon 114                        |         | 99                                 |
| Chloromethane                    |         | 99                                 |
| Vinyl Chloride                   |         | 99                                 |
| 1,3-Butadiene                    |         | 106                                |
| Bromomethane                     |         | 106                                |
| Chloroethane                     |         | 109                                |
| Freon 11                         |         | 115                                |
| Ethanol                          |         | 102                                |
| Freon 113                        |         | 97                                 |
| 1,1-Dichloroethene               |         | 87                                 |
| Acetone                          |         | 92                                 |
| 2-Propanol                       |         | 100                                |
| Carbon Disulfide                 |         | 91                                 |
| 3-Chloropropene                  |         | 100                                |
| Methylene Chloride               |         | 89                                 |
| Methyl tert-butyl ether          |         | 117                                |
| trans-1,2-Dichloroethene         |         | 94                                 |
| Hexane                           |         | 89                                 |
| 1,1-Dichloroethane               |         | 97                                 |
| 2-Butanone (Methyl Ethyl Ketone) |         | 95                                 |
| cis-1,2-Dichloroethene           |         | 90                                 |
| Tetrahydrofuran                  |         | 90                                 |
| Chloroform                       |         | 94                                 |
| 1,1,1-Trichloroethane            |         | 107                                |
| Cyclohexane                      |         | 86                                 |
| Carbon Tetrachloride             |         | 114                                |
| 2,2,4-Trimethylpentane           |         | 86                                 |
| Benzene                          |         | 90                                 |
| 1,2-Dichloroethane               |         | 111                                |
| Heptane                          |         | 97                                 |
| Trichloroethene                  |         | 88                                 |
| 1,2-Dichloropropane              |         | 92                                 |
| 1,4-Dioxane                      |         | 93                                 |
| Bromodichloromethane             |         | 111                                |
| cis-1,3-Dichloropropene          |         | 101                                |
| 4-Methyl-2-pentanone             |         | 110                                |
| Toluene                          |         | 94                                 |
| trans-1,3-Dichloropropene        |         | 110                                |



**Client Sample ID: CCV** 

Lab ID#: 0806409A-06A

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

| File Name:                | z062604 | Date of Collection: NA             |
|---------------------------|---------|------------------------------------|
| Dii. Factor:              | 1.00    | Date of Analysis: 6/26/08 12:25 PM |
| Compound                  |         | %Recovery                          |
| 1,1,2-Trichloroethane     |         | 94                                 |
| Tetrachloroethene         |         | 93                                 |
| 2-Hexanone                |         | 103                                |
| Dibromochloromethane      |         | 112                                |
| 1,2-Dibromoethane (EDB)   |         | 96                                 |
| Chlorobenzene             |         | 90                                 |
| Ethyl Benzene             |         | 93                                 |
| m,p-Xylene                |         | 94                                 |
| o-Xylene                  |         | 96                                 |
| Styrene                   |         | 98                                 |
| Bromoform                 |         | 121                                |
| Cumene                    |         | 99                                 |
| 1,1,2,2-Tetrachloroethane |         | 111                                |
| Propylbenzene             |         | 104                                |
| 4-Ethyltoluene            |         | 106                                |
| 1,3,5-Trimethylbenzene    |         | 104                                |
| 1,2,4-Trimethylbenzene    |         | 107                                |
| 1,3-Dichlorobenzene       |         | 110                                |
| 1,4-Dichlorobenzene       |         | 108                                |
| alpha-Chlorotoluene       |         | 143 Q                              |
| 1,2-Dichlorobenzene       |         | 110                                |
| 1,2,4-Trichlorobenzene    |         | 125                                |
| Hexachlorobutadiene       |         | 116                                |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| Toluene-d8            | 103       | 70-130 |  |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |  |
| 4-Bromofluorobenzene  | 107       | 70-130 |  |



Client Sample ID: LCS

Lab ID#: 0806409A-07A

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

| File Name:<br>Dil Factor:        | z062605 | Date of Collection: NA             |
|----------------------------------|---------|------------------------------------|
|                                  | 1.00    | Date of Analysis. 0/20/00 01.34 PM |
| Compound                         |         | %Recovery                          |
| Freon 12                         |         | 95                                 |
| Freon 114                        |         | 90                                 |
| Chloromethane                    |         | 90                                 |
| Vinyl Chloride                   |         | 88                                 |
| 1,3-Butadiene                    |         | 94                                 |
| Bromomethane                     |         | 98                                 |
| Chloroethane                     |         | 98                                 |
| Freon 11                         |         | 108                                |
| Ethanol                          |         | 103                                |
| Freon 113                        |         | 101                                |
| 1,1-Dichloroethene               |         | 89                                 |
| Acetone                          |         | 84                                 |
| 2-Propanol                       |         | 93                                 |
| Carbon Disulfide                 |         | 84                                 |
| 3-Chloropropene                  |         | 92                                 |
| Methylene Chloride               |         | 91                                 |
| Methyl tert-butyl ether          |         | 104                                |
| trans-1,2-Dichloroethene         |         | 88                                 |
| Hexane                           |         | 83                                 |
| 1,1-Dichloroethane               |         | 92                                 |
| 2-Butanone (Methyl Ethyl Ketone) |         | 88                                 |
| cis-1,2-Dichloroethene           |         | 85                                 |
| Tetrahydrofuran                  |         | 84                                 |
| Chloroform                       |         | 90                                 |
| 1,1,1-Trichloroethane            |         | 102                                |
| Cyclohexane                      |         | 80                                 |
| Carbon Tetrachloride             |         | 104                                |
| 2,2,4-Trimethylpentane           |         | 81                                 |
| Benzene                          |         | 86                                 |
| 1,2-Dichloroethane               |         | 106                                |
| Heptane                          |         | 90                                 |
| Trichloroethene                  |         | 86                                 |
| 1,2-Dichloropropane              |         | 88                                 |
| 1,4-Dioxane                      |         | 89                                 |
| Bromodichloromethane             |         | 106                                |
| cis-1,3-Dichloropropene          |         | 94                                 |
| 4-Methyl-2-pentanone             |         | 103                                |
| Toluene                          |         | 92                                 |
| trans-1,3-Dichloropropene        |         | 102                                |



Client Sample ID: LCS

Lab ID#: 0806409A-07A

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

| File Name:                | z062605 | Date of Collection: NA |
|---------------------------|---------|------------------------|
|                           | 1.00    |                        |
| Compound                  |         | %Recovery              |
| 1,1,2-Trichloroethane     |         | 89                     |
| Tetrachloroethene         |         | 89                     |
| 2-Hexanone                |         | 97                     |
| Dibromochloromethane      |         | 107                    |
| 1,2-Dibromoethane (EDB)   |         | 88                     |
| Chlorobenzene             |         | 86                     |
| Ethyl Benzene             |         | 87                     |
| m,p-Xylene                |         | 88                     |
| o-Xylene                  |         | 91                     |
| Styrene                   |         | 93                     |
| Bromoform                 |         | 118                    |
| Cumene                    |         | 96                     |
| 1,1,2,2-Tetrachloroethane |         | 105                    |
| Propylbenzene             |         | 99                     |
| 4-Ethyltoluene            |         | 99                     |
| 1,3,5-Trimethylbenzene    |         | 98                     |
| 1,2,4-Trimethylbenzene    |         | 101                    |
| 1,3-Dichlorobenzene       |         | 104                    |
| 1,4-Dichlorobenzene       |         | 102                    |
| alpha-Chlorotoluene       |         | 142 Q                  |
| 1,2-Dichlorobenzene       |         | 103                    |
| 1,2,4-Trichlorobenzene    |         | 127                    |
| Hexachlorobutadiene       |         | 110                    |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| Toluene-d8            | 105       | 70-130 |  |
| 1,2-Dichloroethane-d4 | 110       | 70-130 |  |
| 4-Bromofluorobenzene  | 107       | 70-130 |  |



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Page | of |

| Project Man  | ager DAVE SHEA  | Male I                       |  | Project Inf       | <b>D:</b>                                    | тj         | Furn Around  |                              |                           |
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|  | TA-01   | 22505                        | 60808                                  | 1029              | TD-15, SIM (2)                               | s voci     | )* 29.5  | 15                           |                           |
|  | TA-02   | 33948                        | 5 19 08                                | 1029              | TO-15, SIM (23                               | vou)       | * 28.0   | 8                            |                           |
| CZA.   | IA-03   | 4227                         | 6 8 8                                  | 1036              | TO-15 - Fall List                            | ,          | >30  | 11.5                         |                           |
|  | <u>TA-04</u>  | 10979                        | 6 18 08                                | ++ 05-1101        | QR_ TO-15 - Full Lis                         | <u>+</u>   | 2n.5   | 7.5                          |                           |
|  | -IA-05  | 34136-                       | 60 8108                                | -10311            | BADCONTECULER DO                             | NOTH       | 10.122 27.5  | 28.5                         |                           |
|  | IA-06   | 14881                        | 6 18 68                                | GłOj <b>JČ</b> €Ţ | WR TO-15 SIM (2                              | 13 VOC     | \$ 27.5  | 11.5                         |                           |
|  |   |                              |  |                   | <i>,</i> , , , , , , , , , , , , , , , , , , |            | ·  | [                            |                           |
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- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020 Hours 8:00 A.M to 6:00 P.M. Pacific



### WORK ORDER #: 0806409B

Work Order Summary

| CLIENT:         | Ms. Claire Lund<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:      | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|---|---------------|--|
| PHONE:          | 603-229-1900  | <b>P.O.</b> # | 2924.00.020  |
| FAX:            | 603-229-1919  | PROJECT #     | 2924.00.020 80K  |
| DATE RECEIVED:  | 06/20/2008  | CONTACT:      | Bryanna Langley  |
| DATE COMPLETED: | 07/03/2008  |               | 2- j 2   |

|           |   | RECEIPT   | FINAL   |
|-----------|---|---|---|
| NAME      | <u>TEST</u>   | VAC./PRES.  | PRESSURE  |
| IA-01     | Modified TO-15 SIM  | 15.0 "Hg  | 5 psi   |
| IA-02     | Modified TO-15 SIM  | 8.5 "Hg   | 5 psi   |
| IA-06     | Modified TO-15 SIM  | 12.5 "Hg  | 5 psi   |
| Lab Blank | Modified TO-15 SIM  | NA  | NA  |
| Lab Blank | Modified TO-15 SIM  | NA  | NA  |
| CCV       | Modified TO-15 SIM  | NA  | NA  |
| CCV       | Modified TO-15 SIM  | NA  | NA  |
| LCS       | Modified TO-15 SIM  | NA  | NA  |
| LCS       | Modified TO-15 SIM  | NA  | NA  |
|           | NAME<br>IA-01<br>IA-02<br>IA-06<br>Lab Blank<br>Lab Blank<br>CCV<br>CCV<br>LCS<br>LCS | NAMETESTIA-01Modified TO-15 SIMIA-02Modified TO-15 SIMIA-06Modified TO-15 SIMLab BlankModified TO-15 SIMLab BlankModified TO-15 SIMCCVModified TO-15 SIMCCVModified TO-15 SIMLCSModified TO-15 SIMLCSModified TO-15 SIM | NAMETESTVAC./PRES.IA-01Modified TO-15 SIM15.0 "HgIA-02Modified TO-15 SIM8.5 "HgIA-06Modified TO-15 SIM12.5 "HgLab BlankModified TO-15 SIMNALab BlankModified TO-15 SIMNACCVModified TO-15 SIMNACCVModified TO-15 SIMNALCSModified TO-15 SIMNA |

Sinda d. Fruman

DATE: \_\_\_\_\_

Laboratory Director

CERTIFIED BY:

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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Page 1 of 13



## LABORATORY NARRATIVE Modified TO-15 SIM Sanborn, Head & Associates Workorder# 0806409B

Three 6 Liter Summa Canister (SIM Certified) samples were received on June 20, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

# **Receiving Notes**

There were no receiving discrepancies.

# **Analytical Notes**

All Quality Control Limit failures 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. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

# **Definition of Data Qualifying Flags**

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

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

J - Estimated value.



- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- N The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

#### Client Sample ID: IA-01

#### Lab ID#: 0806409B-01A

| Compound            | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|---------------------|----------------------|------------------|-----------------------|-------------------|
| Trichloroethene     | 0.054                | 0.079            | 0.29                  | 0.42              |
| Toluene             | 0.054                | 0.58             | 0.20                  | 2.2               |
| Tetrachloroethene   | 0.054                | 36               | 0.36                  | 240               |
| Ethyl Benzene       | 0.054                | 0.093            | 0.23                  | 0.40              |
| m,p-Xylene          | 0.11                 | 0.29             | 0.46                  | 1.3               |
| o-Xylene            | 0.054                | 0.10 J           | 0.23                  | 0.46 J            |
| 1,4-Dichlorobenzene | 0.054                | 0.22             | 0.32                  | 1.3               |
| Acetone             | 1.3                  | 2.5              | 3.2                   | 5.9               |
| Freon 113           | 0.054                | 0.094            | 0.41                  | 0.72              |
| Freon 12            | 0.054                | 0.51             | 0.26                  | 2.5               |
| Freon 11            | 0.054                | 0.25             | 0.30                  | 1.4               |

### Client Sample ID: IA-02

#### Lab ID#: 0806409B-02A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Toluene           | 0.075      | 0.30   | 0.28       | 1.1     |
| Tetrachloroethene | 0.075      | 37     | 0.51       | 250     |
| Acetone           | 1.9        | 3.3    | 4.4        | 7.9     |
| Freon 113         | 0.075      | 0.092  | 0.57       | 0.70    |
| Freon 12          | 0.075      | 0.52   | 0.37       | 2.5     |
| Freon 11          | 0.075      | 0.26   | 0.42       | 1.4     |

# Client Sample ID: IA-06

#### Lab ID#: 0806409B-05A

|                        | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|------------------------|------------|--------|------------|---------|
| Compound               | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| cis-1,2-Dichloroethene | 0.046      | 0.10   | 0.18       | 0.40    |
| Trichloroethene        | 0.046      | 0.21   | 0.25       | 1.1     |
| Toluene                | 0.046      | 0.35   | 0.17       | 1.3     |
| Tetrachloroethene      | 0.046      | 18     | 0.31       | 120     |
| Acetone                | 1.2        | 2.1    | 2.7        | 5.0     |
| Freon 113              | 0.046      | 0.11   | 0.35       | 0.83    |
| Freon 12               | 0.046      | 0.50   | 0.23       | 2.5     |
| Freon 11               | 0.046      | 0.26   | 0.26       | 1.4     |



# Client Sample ID: IA-01 Lab ID#: 0806409B-01A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:                | a062319 Date of Collection: 6/18/08 |              |                                    | 6/18/08      |  |
|---------------------------|-------------------------------------|--------------|------------------------------------|--------------|--|
| Dil. Factor:              | 2.68                                |              | Date of Analysis: 6/24/08 12:35 PM |              |  |
|                           | Rpt. Limit                          | Amount       | Rpt. Limit                         | Amount       |  |
| Compound                  | (ppbv)                              | (ppbv)       | (uG/m3)                            | (uG/m3)      |  |
| Vinyl Chloride            | 0.027                               | Not Detected | 0.068                              | Not Detected |  |
| 1,1-Dichloroethene        | 0.027                               | Not Detected | 0.11                               | Not Detected |  |
| 1,1-Dichloroethane        | 0.054                               | Not Detected | 0.22                               | Not Detected |  |
| cis-1,2-Dichloroethene    | 0.054                               | Not Detected | 0.21                               | Not Detected |  |
| 1,1,1-Trichloroethane     | 0.054                               | Not Detected | 0.29                               | Not Detected |  |
| Benzene                   | 0.13                                | Not Detected | 0.43                               | Not Detected |  |
| 1,2-Dichloroethane        | 0.054                               | Not Detected | 0.22                               | Not Detected |  |
| Trichloroethene           | 0.054                               | 0.079        | 0.29                               | 0.42         |  |
| Toluene                   | 0.054                               | 0.58         | 0.20                               | 2.2          |  |
| 1,1,2-Trichloroethane     | 0.054                               | Not Detected | 0.29                               | Not Detected |  |
| Tetrachloroethene         | 0.054                               | 36           | 0.36                               | 240          |  |
| Ethyl Benzene             | 0.054                               | 0.093        | 0.23                               | 0.40         |  |
| m,p-Xylene                | 0.11                                | 0.29         | 0.46                               | 1.3          |  |
| o-Xylene                  | 0.054                               | 0.10 J       | 0.23                               | 0.46 J       |  |
| 1,1,2,2-Tetrachloroethane | 0.054                               | Not Detected | 0.37                               | Not Detected |  |
| trans-1,2-Dichloroethene  | 0.27                                | Not Detected | 1.1                                | Not Detected |  |
| Methyl tert-butyl ether   | 0.27                                | Not Detected | 0.97                               | Not Detected |  |
| 1,2,4-Trichlorobenzene    | 0.27                                | Not Detected | 2.0                                | Not Detected |  |
| 1,4-Dichlorobenzene       | 0.054                               | 0.22         | 0.32                               | 1.3          |  |
| 1,3-Dichlorobenzene       | 0.054                               | Not Detected | 0.32                               | Not Detected |  |
| 1,2-Dichlorobenzene       | 0.054                               | Not Detected | 0.32                               | Not Detected |  |
| Methylene Chloride        | 0.54                                | Not Detected | 1.9                                | Not Detected |  |
| Acetone                   | 1.3                                 | 2.5          | 3.2                                | 5.9          |  |
| Chlorobenzene             | 0.054                               | Not Detected | 0.25                               | Not Detected |  |
| Freon 113                 | 0.054                               | 0.094        | 0.41                               | 0.72         |  |
| Freon 12                  | 0.054                               | 0.51         | 0.26                               | 2.5          |  |
| Freon 11                  | 0.054                               | 0.25         | 0.30                               | 1.4          |  |

J = Estimated value due to bias in the CCV.

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |
| Toluene-d8            | 92        | 70-130 |
| 4-Bromofluorobenzene  | 97        | 70-130 |



# Client Sample ID: IA-02 Lab ID#: 0806409B-02A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:                | a062320    |              | Date of Collection: 6/18/08        |              |  |
|---------------------------|------------|--------------|------------------------------------|--------------|--|
| Dil. Factor:              | 3.74       |              | Date of Analysis: 6/24/08 01:15 PM |              |  |
|                           | Rpt. Limit | Amount       | Rpt. Limit                         | Amount       |  |
| Compound                  | (ppbv)     | (ppbv)       | (uG/m3)                            | (uG/m3)      |  |
| Vinyl Chloride            | 0.037      | Not Detected | 0.096                              | Not Detected |  |
| 1,1-Dichloroethene        | 0.037      | Not Detected | 0.15                               | Not Detected |  |
| 1,1-Dichloroethane        | 0.075      | Not Detected | 0.30                               | Not Detected |  |
| cis-1,2-Dichloroethene    | 0.075      | Not Detected | 0.30                               | Not Detected |  |
| 1,1,1-Trichloroethane     | 0.075      | Not Detected | 0.41                               | Not Detected |  |
| Benzene                   | 0.19       | Not Detected | 0.60                               | Not Detected |  |
| 1,2-Dichloroethane        | 0.075      | Not Detected | 0.30                               | Not Detected |  |
| Trichloroethene           | 0.075      | Not Detected | 0.40                               | Not Detected |  |
| Toluene                   | 0.075      | 0.30         | 0.28                               | 1.1          |  |
| 1,1,2-Trichloroethane     | 0.075      | Not Detected | 0.41                               | Not Detected |  |
| Tetrachloroethene         | 0.075      | 37           | 0.51                               | 250          |  |
| Ethyl Benzene             | 0.075      | Not Detected | 0.32                               | Not Detected |  |
| m,p-Xylene                | 0.15       | Not Detected | 0.65                               | Not Detected |  |
| o-Xylene                  | 0.075      | Not Detected | 0.32                               | Not Detected |  |
| 1,1,2,2-Tetrachloroethane | 0.075      | Not Detected | 0.51                               | Not Detected |  |
| trans-1,2-Dichloroethene  | 0.37       | Not Detected | 1.5                                | Not Detected |  |
| Methyl tert-butyl ether   | 0.37       | Not Detected | 1.3                                | Not Detected |  |
| 1,2,4-Trichlorobenzene    | 0.37       | Not Detected | 2.8                                | Not Detected |  |
| 1,4-Dichlorobenzene       | 0.075      | Not Detected | 0.45                               | Not Detected |  |
| 1,3-Dichlorobenzene       | 0.075      | Not Detected | 0.45                               | Not Detected |  |
| 1,2-Dichlorobenzene       | 0.075      | Not Detected | 0.45                               | Not Detected |  |
| Methylene Chloride        | 0.75       | Not Detected | 2.6                                | Not Detected |  |
| Acetone                   | 1.9        | 3.3          | 4.4                                | 7.9          |  |
| Chlorobenzene             | 0.075      | Not Detected | 0.34                               | Not Detected |  |
| Freon 113                 | 0.075      | 0.092        | 0.57                               | 0.70         |  |
| Freon 12                  | 0.075      | 0.52         | 0.37                               | 2.5          |  |
| Freon 11                  | 0.075      | 0.26         | 0.42                               | 1.4          |  |

|                       |           | Method<br>Limits |
|-----------------------|-----------|------------------|
| Surrogates            | %Recovery |                  |
| 1,2-Dichloroethane-d4 | 101       | 70-130           |
| Toluene-d8            | 91        | 70-130           |
| 4-Bromofluorobenzene  | 92        | 70-130           |



# Client Sample ID: IA-06 Lab ID#: 0806409B-05A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:                | a062508    |              | Date of Collection: 6 | 6/18/08        |
|---------------------------|------------|--------------|-----------------------|----------------|
| Dil. Factor:              | 2.30       |              | Date of Analysis: 6/2 | 25/08 03:33 PM |
|                           | Rpt. Limit | Amount       | Rpt. Limit            | Amount         |
| Compound                  | (ppbv)     | (ppbv)       | (uG/m3)               | (uG/m3)        |
| Vinyl Chloride            | 0.023      | Not Detected | 0.059                 | Not Detected   |
| 1,1-Dichloroethene        | 0.023      | Not Detected | 0.091                 | Not Detected   |
| 1,1-Dichloroethane        | 0.046      | Not Detected | 0.19                  | Not Detected   |
| cis-1,2-Dichloroethene    | 0.046      | 0.10         | 0.18                  | 0.40           |
| 1,1,1-Trichloroethane     | 0.046      | Not Detected | 0.25                  | Not Detected   |
| Benzene                   | 0.12       | Not Detected | 0.37                  | Not Detected   |
| 1,2-Dichloroethane        | 0.046      | Not Detected | 0.19                  | Not Detected   |
| Trichloroethene           | 0.046      | 0.21         | 0.25                  | 1.1            |
| Toluene                   | 0.046      | 0.35         | 0.17                  | 1.3            |
| 1,1,2-Trichloroethane     | 0.046      | Not Detected | 0.25                  | Not Detected   |
| Tetrachloroethene         | 0.046      | 18           | 0.31                  | 120            |
| Ethyl Benzene             | 0.046      | Not Detected | 0.20                  | Not Detected   |
| m,p-Xylene                | 0.092      | Not Detected | 0.40                  | Not Detected   |
| o-Xylene                  | 0.046      | Not Detected | 0.20                  | Not Detected   |
| 1,1,2,2-Tetrachloroethane | 0.046      | Not Detected | 0.32                  | Not Detected   |
| trans-1,2-Dichloroethene  | 0.23       | Not Detected | 0.91                  | Not Detected   |
| Methyl tert-butyl ether   | 0.23       | Not Detected | 0.83                  | Not Detected   |
| 1,2,4-Trichlorobenzene    | 0.23       | Not Detected | 1.7                   | Not Detected   |
| 1,4-Dichlorobenzene       | 0.046      | Not Detected | 0.28                  | Not Detected   |
| 1,3-Dichlorobenzene       | 0.046      | Not Detected | 0.28                  | Not Detected   |
| 1,2-Dichlorobenzene       | 0.046      | Not Detected | 0.28                  | Not Detected   |
| Methylene Chloride        | 0.46       | Not Detected | 1.6                   | Not Detected   |
| Acetone                   | 1.2        | 2.1          | 2.7                   | 5.0            |
| Chlorobenzene             | 0.046      | Not Detected | 0.21                  | Not Detected   |
| Freon 113                 | 0.046      | 0.11         | 0.35                  | 0.83           |
| Freon 12                  | 0.046      | 0.50         | 0.23                  | 2.5            |
| Freon 11                  | 0.046      | 0.26         | 0.26                  | 1.4            |

|                       |           | Method<br>Limits |
|-----------------------|-----------|------------------|
| Surrogates            | %Recovery |                  |
| 1,2-Dichloroethane-d4 | 102       | 70-130           |
| Toluene-d8            | 91        | 70-130           |
| 4-Bromofluorobenzene  | 94        | 70-130           |


## Client Sample ID: Lab Blank Lab ID#: 0806409B-06A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:<br>Dil. Factor: | a062317<br>1.00      |                  | Date of Collection: NA<br>Date of Analysis: 6/24 | 4/08 10:50 AM     |
|----------------------------|----------------------|------------------|--|-------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                            | Amount<br>(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      |
| 1,2,4-Trichlorobenzene     | 0.10                 | Not Detected     | 0.74   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.020                | Not Detected     | 0.12   | Not Detected      |
| 1,3-Dichlorobenzene        | 0.020                | Not Detected     | 0.12   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.020                | Not Detected     | 0.12   | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected     | 0.69   | Not Detected      |
| Acetone                    | 0.50                 | Not Detected     | 1.2  | Not Detected      |
| Chlorobenzene              | 0.020                | Not Detected     | 0.092  | Not Detected      |
| Freon 113                  | 0.020                | Not Detected     | 0.15   | Not Detected      |
| Freon 12                   | 0.020                | Not Detected     | 0.099  | Not Detected      |
| Freon 11                   | 0.020                | Not Detected     | 0.11   | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |  |
| Toluene-d8            | 92        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



## Client Sample ID: Lab Blank Lab ID#: 0806409B-06B MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:<br>Dil. Factor: | a062507<br>1.00      |                  | Date of Collection: NA<br>Date of Analysis: 6/2 | 5/08 02:32 PM     |
|----------------------------|----------------------|------------------|---|-------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(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      |
| 1,2,4-Trichlorobenzene     | 0.10                 | Not Detected     | 0.74  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.020                | Not Detected     | 0.12  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.020                | Not Detected     | 0.12  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.020                | Not Detected     | 0.12  | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected     | 0.69  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected     | 1.2   | Not Detected      |
| Chlorobenzene              | 0.020                | Not Detected     | 0.092   | Not Detected      |
| Freon 113                  | 0.020                | Not Detected     | 0.15  | Not Detected      |
| Freon 12                   | 0.020                | Not Detected     | 0.099   | Not Detected      |
| Freon 11                   | 0.020                | Not Detected     | 0.11  | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 104       | 70-130 |  |
| Toluene-d8            | 90        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



**Client Sample ID: CCV** 

Lab ID#: 0806409B-07A

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

| File Name:<br>Dil. Factor: | a062309a<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/23/08 07:25 PM |
|----------------------------|------------------|--|
|                            |                  |  |
| Compound                   |                  | %Recovery  |
| Vinyl Chloride             |                  | 97   |
| 1,1-Dichloroethene         |                  | 113  |
| 1,1-Dichloroethane         |                  | 97   |
| cis-1,2-Dichloroethene     |                  | 115  |
| 1,1,1-Trichloroethane      |                  | 89   |
| Benzene                    |                  | 103  |
| 1,2-Dichloroethane         |                  | 100  |
| Trichloroethene            |                  | 93   |
| Toluene                    |                  | 102  |
| 1,1,2-Trichloroethane      |                  | 98   |
| Tetrachloroethene          |                  | 101  |
| Ethyl Benzene              |                  | 120  |
| m,p-Xylene                 |                  | 130  |
| o-Xylene                   |                  | 135 Q  |
| 1,1,2,2-Tetrachloroethane  |                  | 92   |
| trans-1,2-Dichloroethene   |                  | 110  |
| Methyl tert-butyl ether    |                  | 95   |
| 1,2,4-Trichlorobenzene     |                  | 93   |
| 1,4-Dichlorobenzene        |                  | 119  |
| 1,3-Dichlorobenzene        |                  | 113  |
| 1,2-Dichlorobenzene        |                  | 114  |
| Methylene Chloride         |                  | 96   |
| Acetone                    |                  | 74   |
| Chlorobenzene              |                  | 96   |
| Freon 113                  |                  | 89   |
| Freon 12                   |                  | 89   |
| Freon 11                   |                  | 88   |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 97        | 70-130 |  |
| Toluene-d8            | 106       | 70-130 |  |
| 4-Bromofluorobenzene  | 103       | 70-130 |  |



**Client Sample ID: CCV** 

Lab ID#: 0806409B-07B

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

| File Name:<br>Dil. Factor: | a062505<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/25/08 12:47 PM |
|----------------------------|-----------------|--|
| Compound                   |                 | %Recovery  |
| Vinyl Chloride             |                 | 93   |
| 1,1-Dichloroethene         |                 | 107  |
| 1,1-Dichloroethane         |                 | 96   |
| cis-1,2-Dichloroethene     |                 | 110  |
| 1,1,1-Trichloroethane      |                 | 87   |
| Benzene                    |                 | 103  |
| 1,2-Dichloroethane         |                 | 100  |
| Trichloroethene            |                 | 90   |
| Toluene                    |                 | 100  |
| 1,1,2-Trichloroethane      |                 | 97   |
| Tetrachloroethene          |                 | 99   |
| Ethyl Benzene              |                 | 118  |
| m,p-Xylene                 |                 | 128  |
| o-Xylene                   |                 | 131 Q  |
| 1,1,2,2-Tetrachloroethane  |                 | 95   |
| trans-1,2-Dichloroethene   |                 | 107  |
| Methyl tert-butyl ether    |                 | 84   |
| 1,2,4-Trichlorobenzene     |                 | 89   |
| 1,4-Dichlorobenzene        |                 | 119  |
| 1,3-Dichlorobenzene        |                 | 113  |
| 1,2-Dichlorobenzene        |                 | 114  |
| Methylene Chloride         |                 | 94   |
| Acetone                    |                 | 84   |
| Chlorobenzene              |                 | 96   |
| Freon 113                  |                 |  |
| Freon 12                   |                 | 87   |
| Freon 11                   |                 | 87   |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 99        | 70-130 |  |
| Toluene-d8            | 105       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



Client Sample ID: LCS

Lab ID#: 0806409B-08A

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

| File Name:<br>Dil. Factor: | a062315<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/24/08 08:55 AM |
|----------------------------|-----------------|--|
| Compound                   |                 | %Recovery  |
| Vinyl Chloride             |                 | 90   |
| 1,1-Dichloroethene         |                 | 117  |
| 1,1-Dichloroethane         |                 | 95   |
| cis-1,2-Dichloroethene     |                 | 109  |
| 1,1,1-Trichloroethane      |                 | 87   |
| Benzene                    |                 | 99   |
| 1,2-Dichloroethane         |                 | 97   |
| Trichloroethene            |                 | 88   |
| Toluene                    |                 | 102  |
| 1,1,2-Trichloroethane      |                 | 92   |
| Tetrachloroethene          |                 | 96   |
| Ethyl Benzene              |                 | 111  |
| m,p-Xylene                 |                 | 121  |
| o-Xylene                   |                 | 128  |
| 1,1,2,2-Tetrachloroethane  |                 | 89   |
| trans-1,2-Dichloroethene   |                 | 104  |
| Methyl tert-butyl ether    |                 | 89   |
| 1,2,4-Trichlorobenzene     |                 | 89   |
| 1,4-Dichlorobenzene        |                 | 110  |
| 1,3-Dichlorobenzene        |                 | 107  |
| 1,2-Dichlorobenzene        |                 | 107  |
| Methylene Chloride         |                 | 99   |
| Acetone                    |                 | 71   |
| Chlorobenzene              |                 | 91   |
| Freon 113                  |                 | 93   |
| Freon 12                   |                 | 85   |
| Freon 11                   |                 | 84   |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 98        | 70-130 |  |
| Toluene-d8            | 105       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



Client Sample ID: LCS

Lab ID#: 0806409B-08B

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

| File Name:<br>Dil. Factor: | a062503<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/25/08 11:07 AM |
|----------------------------|-----------------|--|
|                            |                 |  |
| Compound                   |                 | %Recovery  |
| Vinyl Chloride             |                 | 98   |
| 1,1-Dichloroethene         |                 | 111  |
| 1,1-Dichloroethane         |                 | 92   |
| cis-1,2-Dichloroethene     |                 | 112  |
| 1,1,1-Trichloroethane      |                 | 92   |
| Benzene                    |                 | 96   |
| 1,2-Dichloroethane         |                 | 95   |
| Trichloroethene            |                 | 87   |
| Toluene                    |                 | 101  |
| 1,1,2-Trichloroethane      |                 | 90   |
| Tetrachloroethene          |                 | 93   |
| Ethyl Benzene              |                 | 112  |
| m,p-Xylene                 |                 | 123  |
| o-Xylene                   |                 | 133 Q  |
| 1,1,2,2-Tetrachloroethane  |                 | 90   |
| trans-1,2-Dichloroethene   |                 | 104  |
| Methyl tert-butyl ether    |                 | 124  |
| 1,2,4-Trichlorobenzene     |                 | 110  |
| 1,4-Dichlorobenzene        |                 | 116  |
| 1,3-Dichlorobenzene        |                 | 110  |
| 1,2-Dichlorobenzene        |                 | 110  |
| Methylene Chloride         |                 | 95   |
| Acetone                    |                 | 70   |
| Chlorobenzene              |                 | 90   |
| Freon 113                  |                 | 89   |
| Freon 12                   |                 | 87   |
| Freon 11                   |                 | 81   |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

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



## Sample Transportation Notice

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Page\_\_\_\_ of \_\_\_

| Project Ma                             | nager DAVE SHEA   | Maker                                  |                       | Project Info  | <b>)</b> :                   |  | Turn Around<br>Time:          | Lab Use<br>Press  | <i>Only</i><br>urized by: | · · ·          |
|--|---|--|-----------------------|---|------------------------------|--|-------------------------------|-------------------|---------------------------|----------------|
| Collected b                            | nyz (Frint and Sign) Clare Wra / (LAML)   | ETAMA_                                 |                       | P.O. #  | 2924.00,000                  |  | X Normal                      | Dete              |                           | · · ·          |
| Company <u>C</u>                       | <u> SANBORN HERD &amp; ASSOCIATES</u> Email <u>d</u>  | shea asant                             | omhadialla            | Project #   | 2924.00.020                  |  | /<br>D Bush                   | Burrow            |                           |                |
| Address <u>24</u>                      | D FOUNDRY ST. City CONCORD  | State                                  | Zip <u>1830  </u>     | · (0)000 #  | A- Is                        |  |                               | Pressi            | unzation                  | GES.           |
| Phone ((2)                             | <u>5)416-6130 For(603) (</u>  | 209-1919                               |                       | Project Name  | <u></u>                      |  | specify                       |                   | N <sub>2</sub> : H        | <del>0</del>   |
| Lab I.D.                               | Field Sample I.D. (Location)  | Can #                                  | Date<br>of Collection | <sup>Time</sup><br>of Collection                    | · Analyses Requ              | ested                                  | Canis<br>Initial              | ter Pres<br>Final | Bure Vac                  | Einal          |
| оА                                     | TA-OI   | 22505                                  | 61808                 | 1029  | TD-15,51M (                  | <br>23 VOCs                            | )* 29.5                       | 15                |                           | ( <b>p</b> ol) |
| 024                                    | TA-02   | 33940                                  | 6 3 08                | 1029:   | TO-IS. SIM 12                | 3 VOCA                                 | )* 28.0                       | 8                 | •                         | ÷              |
|  | TA-03   | 4227                                   | 6118108               | 031   | TO-IS - Full List            |  | 730                           | 11.5              | · · ·                     |                |
|  | TA-04   | 10979                                  | 6 18 08               | H05-1101  | 02-70-15 - FJIL              | ist                                    | 21.5                          | 7.5               |                           | · · ·          |
|  | - <u>-</u>  | 34736                                  | utale8-               | - <del>10311 -</del>                                | BATICONTROUGH                | DONDER                                 | NHINE AS                      | 28.5              |                           | · · ·          |
| 65A                                    | IA-06   | 14881                                  | 4 18 08               | 10361010  | CAR TO-15 SIM 1              | (23 VOC                                | \$ 27.5                       | 11.5              | • : <sub></sub> .         |                |
|  | • •   |  | 「                     | •   | 0                            | · · · ·                                |                               |                   |                           |                |
|  |   |  |                       |   |                              |  |                               |                   | • •                       | · .            |
|  |   | İ                                      | •                     |   |                              |  |                               |                   |                           | 1.<br>1        |
| t vi es                                |   |  | i                     |   |                              |  |                               |                   |                           |                |
| Relinquish<br>Relinquish<br>Relinquish | ed by: (signature) Date/Time<br><u>A. 6/19/09</u> <u>10:30</u> <u>Att</u><br>od by: (signature) Date/Time<br>ed by: (signature) Date/Time | Received b<br>Received b<br>Received b | y: (s'gnaturc)<br>WLA | Datc/Time<br><u>PPM k</u><br>Bate/Time<br>Date/Time | 915 Note<br>11_9208 ≠ 5<br>K | e <b>s:</b><br>ite-specit<br>S. Longtz | fiz list of 23<br>y on 414/08 | , VOCs            | e-mailed                  | 40             |
| Lab                                    | Shipper Name: Aik Bil   | (#****;                                |                       | °C) (   | Cus                          | tody Sea                               | als Intact?                   | Work              | Order #                   | ·              |
| Use                                    | Fed Ex  |  | ,Ma                   | ⊢' <u><u>C</u>, <del>O</del>C</u>                   | Yes                          | s No                                   |                               | 080               | 640                       | 2              |
|  |   |  |                       | ·   | _                            |  | ·                             |                   |                           |                |



# Air Toxics Ltd. Introduces the Electronic Report

Thank you for choosing Air Toxics Ltd. To better serve our customers, we are providing your report by e-mail. This document is provided in Portable Document Format which can be viewed with Acrobat Reader by Adobe.

This electronic report includes the following:

- Work order Summary;
- Laboratory Narrative;
- Results; and
- Chain of Custody (copy).

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020 Hours 8:00 A.M to 6:00 P.M. Pacific



## WORK ORDER #: 0806409BR1

Work Order Summary

| CLIENT:   | Ms. Claire Lund<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:         | Accounts Payał<br>Sanborn, Head &<br>20 Foundry Stre<br>Concord, NH 03 | ble<br>& Associates<br>et<br>301 |                          |
|---|---|------------------|--|----------------------------------|--------------------------|
| PHONE:  | 603-229-1900  | <b>P.O.</b> #    | 2924.00.020  |                                  |                          |
| FAX:  | 603-229-1919  | <b>PROJECT</b> # | 2924.00.020 80K  |                                  |                          |
| DATE RECEIVED:<br>DATE COMPLETED:<br>DATE REISSUED: | 06/20/2008<br>07/03/2008<br>07/15/2008  | CONTACT:         | Bryanna Langle   | y                                |                          |
| FRACTION #  | NAME  | TEST             |  | RECEIPT<br>VAC./PRES.            | FINAL<br><u>PRESSURE</u> |
| 01A   | IA-01   | Modified TO-1    | 5 SIM  | 15.0 "Hg                         | 5 psi                    |
| 02A   | IA-02   | Modified TO-1    | 5 SIM  | 8.5 "Hg                          | 5 psi                    |
| 05A   | IA-06   | Modified TO-1    | 5 SIM  | 12.5 "Hg                         | 5 psi                    |
| 06A   | Lab Blank   | Modified TO-1    | 5 SIM  | NA                               | NA                       |
| 06B   | Lab Blank   | Modified TO-1    | 5 SIM  | NA                               | NA                       |
| 07A   | CCV   | Modified TO-1    | 5 SIM  | NA                               | NA                       |
| 07B   | CCV   | Modified TO-1    | 5 SIM  | NA                               | NA                       |
| 08A   | LCS   | Modified TO-1    | 5 SIM  | NA                               | NA                       |
| 08B   | LCS   | Modified TO-1    | 5 SIM  | NA                               | NA                       |

CERTIFIED BY:

Sinda d. Fruman

DATE: <u>07/15/08</u>

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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Page 1 of 13



## LABORATORY NARRATIVE Modified TO-15 SIM Sanborn, Head & Associates Workorder# 0806409BR1

Three 6 Liter Summa Canister (SIM Certified) samples were received on June 20, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

## **Receiving Notes**

There were no receiving discrepancies.

## **Analytical Notes**

All Quality Control Limit failures 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. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

THE WORK ORDER WAS RE-ISSUED ON 7/15/08 TO INCLUDE THE FOLLOWING NARRATIVE.

THE CANISTERS USED FOR SAMPLES IA-01, IA-02 AND IA-06 WERE INITIALLY CERTIFIED FOR CIS-1,2-DICHLOROETHENE, TRICHLOROETHENE, TETRACHLOROETHENE AND



## VINYL CHLORIDE.

AT TIME OF ANALYSIS THE CLIENT REQUESTED ADDITIONAL COMPOUNDS WHICH HAD NOT BEEN EVALUATED DURING THE CANISTER CERTIFICATION PROCESS. THESE ADDITIONAL COMPOUNDS WERE REPORTED BUT MAY BE FALSE POSITIVES.

## **Definition of Data Qualifying Flags**

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

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

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

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

## Client Sample ID: IA-01

#### Lab ID#: 0806409BR1-01A

| Compound            | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|---------------------|----------------------|------------------|-----------------------|-------------------|
| Trichloroethene     | 0.054                | 0.079            | 0.29                  | 0.42              |
| Toluene             | 0.054                | 0.58             | 0.20                  | 2.2               |
| Tetrachloroethene   | 0.054                | 36               | 0.36                  | 240               |
| Ethyl Benzene       | 0.054                | 0.093            | 0.23                  | 0.40              |
| m,p-Xylene          | 0.11                 | 0.29             | 0.46                  | 1.3               |
| o-Xylene            | 0.054                | 0.10 J           | 0.23                  | 0.46 J            |
| 1,4-Dichlorobenzene | 0.054                | 0.22             | 0.32                  | 1.3               |
| Acetone             | 1.3                  | 2.5              | 3.2                   | 5.9               |
| Freon 113           | 0.054                | 0.094            | 0.41                  | 0.72              |
| Freon 12            | 0.054                | 0.51             | 0.26                  | 2.5               |
| Freon 11            | 0.054                | 0.25             | 0.30                  | 1.4               |

## Client Sample ID: IA-02

#### Lab ID#: 0806409BR1-02A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Toluene           | 0.075      | 0.30   | 0.28       | 1.1     |
| Tetrachloroethene | 0.075      | 37     | 0.51       | 250     |
| Acetone           | 1.9        | 3.3    | 4.4        | 7.9     |
| Freon 113         | 0.075      | 0.092  | 0.57       | 0.70    |
| Freon 12          | 0.075      | 0.52   | 0.37       | 2.5     |
| Freon 11          | 0.075      | 0.26   | 0.42       | 1.4     |

## Client Sample ID: IA-06

### Lab ID#: 0806409BR1-05A

|                        | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|------------------------|------------|--------|------------|---------|
| Compound               | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| cis-1,2-Dichloroethene | 0.046      | 0.10   | 0.18       | 0.40    |
| Trichloroethene        | 0.046      | 0.21   | 0.25       | 1.1     |
| Toluene                | 0.046      | 0.35   | 0.17       | 1.3     |
| Tetrachloroethene      | 0.046      | 18     | 0.31       | 120     |
| Acetone                | 1.2        | 2.1    | 2.7        | 5.0     |
| Freon 113              | 0.046      | 0.11   | 0.35       | 0.83    |
| Freon 12               | 0.046      | 0.50   | 0.23       | 2.5     |
| Freon 11               | 0.046      | 0.26   | 0.26       | 1.4     |



## Client Sample ID: IA-01 Lab ID#: 0806409BR1-01A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:<br>Dil. Factor: | a062319<br>2.68      |                  | Date of Collection: 6/2<br>Date of Analysis: 6/2 | /18/08<br>4/08 12:35 PM |
|----------------------------|----------------------|------------------|--|-------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                            | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.027                | Not Detected     | 0.068  | Not Detected            |
| 1,1-Dichloroethene         | 0.027                | Not Detected     | 0.11   | Not Detected            |
| 1,1-Dichloroethane         | 0.054                | Not Detected     | 0.22   | Not Detected            |
| cis-1,2-Dichloroethene     | 0.054                | Not Detected     | 0.21   | Not Detected            |
| 1,1,1-Trichloroethane      | 0.054                | Not Detected     | 0.29   | Not Detected            |
| Benzene                    | 0.13                 | Not Detected     | 0.43   | Not Detected            |
| 1,2-Dichloroethane         | 0.054                | Not Detected     | 0.22   | Not Detected            |
| Trichloroethene            | 0.054                | 0.079            | 0.29   | 0.42                    |
| Toluene                    | 0.054                | 0.58             | 0.20   | 2.2                     |
| 1,1,2-Trichloroethane      | 0.054                | Not Detected     | 0.29   | Not Detected            |
| Tetrachloroethene          | 0.054                | 36               | 0.36   | 240                     |
| Ethyl Benzene              | 0.054                | 0.093            | 0.23   | 0.40                    |
| m,p-Xylene                 | 0.11                 | 0.29             | 0.46   | 1.3                     |
| o-Xylene                   | 0.054                | 0.10 J           | 0.23   | 0.46 J                  |
| 1,1,2,2-Tetrachloroethane  | 0.054                | Not Detected     | 0.37   | Not Detected            |
| trans-1,2-Dichloroethene   | 0.27                 | Not Detected     | 1.1  | Not Detected            |
| Methyl tert-butyl ether    | 0.27                 | Not Detected     | 0.97   | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.27                 | Not Detected     | 2.0  | Not Detected            |
| 1,4-Dichlorobenzene        | 0.054                | 0.22             | 0.32   | 1.3                     |
| 1,3-Dichlorobenzene        | 0.054                | Not Detected     | 0.32   | Not Detected            |
| 1,2-Dichlorobenzene        | 0.054                | Not Detected     | 0.32   | Not Detected            |
| Methylene Chloride         | 0.54                 | Not Detected     | 1.9  | Not Detected            |
| Acetone                    | 1.3                  | 2.5              | 3.2  | 5.9                     |
| Chlorobenzene              | 0.054                | Not Detected     | 0.25   | Not Detected            |
| Freon 113                  | 0.054                | 0.094            | 0.41   | 0.72                    |
| Freon 12                   | 0.054                | 0.51             | 0.26   | 2.5                     |
| Freon 11                   | 0.054                | 0.25             | 0.30   | 1.4                     |

J = Estimated value due to bias in the CCV.

Container Type: 6 Liter Summa Canister (SIM Certified)

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |  |
| Toluene-d8            | 92        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |

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## Client Sample ID: IA-02 Lab ID#: 0806409BR1-02A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:<br>Dil. Factor: | a062320<br>3.74      |                  | Date of Collection: 6/<br>Date of Analysis: 6/2 | /18/08<br>4/08 01:15 PM |
|----------------------------|----------------------|------------------|---|-------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.037                | Not Detected     | 0.096   | Not Detected            |
| 1,1-Dichloroethene         | 0.037                | Not Detected     | 0.15  | Not Detected            |
| 1,1-Dichloroethane         | 0.075                | Not Detected     | 0.30  | Not Detected            |
| cis-1,2-Dichloroethene     | 0.075                | Not Detected     | 0.30  | Not Detected            |
| 1,1,1-Trichloroethane      | 0.075                | Not Detected     | 0.41  | Not Detected            |
| Benzene                    | 0.19                 | Not Detected     | 0.60  | Not Detected            |
| 1,2-Dichloroethane         | 0.075                | Not Detected     | 0.30  | Not Detected            |
| Trichloroethene            | 0.075                | Not Detected     | 0.40  | Not Detected            |
| Toluene                    | 0.075                | 0.30             | 0.28  | 1.1                     |
| 1,1,2-Trichloroethane      | 0.075                | Not Detected     | 0.41  | Not Detected            |
| Tetrachloroethene          | 0.075                | 37               | 0.51  | 250                     |
| Ethyl Benzene              | 0.075                | Not Detected     | 0.32  | Not Detected            |
| m,p-Xylene                 | 0.15                 | Not Detected     | 0.65  | Not Detected            |
| o-Xylene                   | 0.075                | Not Detected     | 0.32  | Not Detected            |
| 1,1,2,2-Tetrachloroethane  | 0.075                | Not Detected     | 0.51  | Not Detected            |
| trans-1,2-Dichloroethene   | 0.37                 | Not Detected     | 1.5   | Not Detected            |
| Methyl tert-butyl ether    | 0.37                 | Not Detected     | 1.3   | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.37                 | Not Detected     | 2.8   | Not Detected            |
| 1,4-Dichlorobenzene        | 0.075                | Not Detected     | 0.45  | Not Detected            |
| 1,3-Dichlorobenzene        | 0.075                | Not Detected     | 0.45  | Not Detected            |
| 1,2-Dichlorobenzene        | 0.075                | Not Detected     | 0.45  | Not Detected            |
| Methylene Chloride         | 0.75                 | Not Detected     | 2.6   | Not Detected            |
| Acetone                    | 1.9                  | 3.3              | 4.4   | 7.9                     |
| Chlorobenzene              | 0.075                | Not Detected     | 0.34  | Not Detected            |
| Freon 113                  | 0.075                | 0.092            | 0.57  | 0.70                    |
| Freon 12                   | 0.075                | 0.52             | 0.37  | 2.5                     |
| Freon 11                   | 0.075                | 0.26             | 0.42  | 1.4                     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 101       | 70-130 |
| Toluene-d8            | 91        | 70-130 |
| 4-Bromofluorobenzene  | 92        | 70-130 |



## Client Sample ID: IA-06 Lab ID#: 0806409BR1-05A MODIFIED EPA METHOD TO-15 GC/MS SIM

| File Name:<br>Dil. Factor: | a062508<br>2.30      |                  | Date of Collection: 6/<br>Date of Analysis: 6/2 | /18/08<br>5/08 03:33 PM |
|----------------------------|----------------------|------------------|---|-------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.023                | Not Detected     | 0.059   | Not Detected            |
| 1,1-Dichloroethene         | 0.023                | Not Detected     | 0.091   | Not Detected            |
| 1,1-Dichloroethane         | 0.046                | Not Detected     | 0.19  | Not Detected            |
| cis-1,2-Dichloroethene     | 0.046                | 0.10             | 0.18  | 0.40                    |
| 1,1,1-Trichloroethane      | 0.046                | Not Detected     | 0.25  | Not Detected            |
| Benzene                    | 0.12                 | Not Detected     | 0.37  | Not Detected            |
| 1,2-Dichloroethane         | 0.046                | Not Detected     | 0.19  | Not Detected            |
| Trichloroethene            | 0.046                | 0.21             | 0.25  | 1.1                     |
| Toluene                    | 0.046                | 0.35             | 0.17  | 1.3                     |
| 1,1,2-Trichloroethane      | 0.046                | Not Detected     | 0.25  | Not Detected            |
| Tetrachloroethene          | 0.046                | 18               | 0.31  | 120                     |
| Ethyl Benzene              | 0.046                | Not Detected     | 0.20  | Not Detected            |
| m,p-Xylene                 | 0.092                | Not Detected     | 0.40  | Not Detected            |
| o-Xylene                   | 0.046                | Not Detected     | 0.20  | Not Detected            |
| 1,1,2,2-Tetrachloroethane  | 0.046                | Not Detected     | 0.32  | Not Detected            |
| trans-1,2-Dichloroethene   | 0.23                 | Not Detected     | 0.91  | Not Detected            |
| Methyl tert-butyl ether    | 0.23                 | Not Detected     | 0.83  | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.23                 | Not Detected     | 1.7   | Not Detected            |
| 1,4-Dichlorobenzene        | 0.046                | Not Detected     | 0.28  | Not Detected            |
| 1,3-Dichlorobenzene        | 0.046                | Not Detected     | 0.28  | Not Detected            |
| 1,2-Dichlorobenzene        | 0.046                | Not Detected     | 0.28  | Not Detected            |
| Methylene Chloride         | 0.46                 | Not Detected     | 1.6   | Not Detected            |
| Acetone                    | 1.2                  | 2.1              | 2.7   | 5.0                     |
| Chlorobenzene              | 0.046                | Not Detected     | 0.21  | Not Detected            |
| Freon 113                  | 0.046                | 0.11             | 0.35  | 0.83                    |
| Freon 12                   | 0.046                | 0.50             | 0.23  | 2.5                     |
| Freon 11                   | 0.046                | 0.26             | 0.26  | 1.4                     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |
| Toluene-d8            | 91        | 70-130 |
| 4-Bromofluorobenzene  | 94        | 70-130 |



Client Sample ID: Lab Blank Lab ID#: 0806409BR1-06A

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

| File Name:<br>Dil. Factor: | a062317<br>1.00 |              | Date of Collection: NA<br>Date of Analysis: 6/2 | 4/08 10:50 AM |
|----------------------------|-----------------|--------------|---|---------------|
|                            | Rpt. Limit      | Amount       | Rpt. Limit                                      | Amount        |
| Compound                   | (ppbv)          | (ppbv)       | (uG/m3)   | (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  |
| 1,2,4-Trichlorobenzene     | 0.10            | Not Detected | 0.74  | Not Detected  |
| 1,4-Dichlorobenzene        | 0.020           | Not Detected | 0.12  | Not Detected  |
| 1,3-Dichlorobenzene        | 0.020           | Not Detected | 0.12  | Not Detected  |
| 1,2-Dichlorobenzene        | 0.020           | Not Detected | 0.12  | Not Detected  |
| Methylene Chloride         | 0.20            | Not Detected | 0.69  | Not Detected  |
| Acetone                    | 0.50            | Not Detected | 1.2   | Not Detected  |
| Chlorobenzene              | 0.020           | Not Detected | 0.092   | Not Detected  |
| Freon 113                  | 0.020           | Not Detected | 0.15  | Not Detected  |
| Freon 12                   | 0.020           | Not Detected | 0.099   | Not Detected  |
| Freon 11                   | 0.020           | Not Detected | 0.11  | Not Detected  |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |  |
| Toluene-d8            | 92        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



# Client Sample ID: Lab Blank Lab ID#: 0806409BR1-06B

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

| File Name:<br>Dil. Factor: | a062507<br>1.00 |              | Date of Collection: NA<br>Date of Analysis: 6/2 | 5/08 02:32 PM |
|----------------------------|-----------------|--------------|---|---------------|
|                            | Rpt. Limit      | Amount       | Rpt. Limit                                      | Amount        |
| Compound                   | (ppbv)          | (ppbv)       | (uG/m3)   | (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  |
| 1,2,4-Trichlorobenzene     | 0.10            | Not Detected | 0.74  | Not Detected  |
| 1,4-Dichlorobenzene        | 0.020           | Not Detected | 0.12  | Not Detected  |
| 1,3-Dichlorobenzene        | 0.020           | Not Detected | 0.12  | Not Detected  |
| 1,2-Dichlorobenzene        | 0.020           | Not Detected | 0.12  | Not Detected  |
| Methylene Chloride         | 0.20            | Not Detected | 0.69  | Not Detected  |
| Acetone                    | 0.50            | Not Detected | 1.2   | Not Detected  |
| Chlorobenzene              | 0.020           | Not Detected | 0.092   | Not Detected  |
| Freon 113                  | 0.020           | Not Detected | 0.15  | Not Detected  |
| Freon 12                   | 0.020           | Not Detected | 0.099   | Not Detected  |
| Freon 11                   | 0.020           | Not Detected | 0.11  | Not Detected  |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 104       | 70-130 |  |
| Toluene-d8            | 90        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



Client Sample ID: CCV

Lab ID#: 0806409BR1-07A

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

| File Name:<br>Dil. Factor: | a062309a<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/23/08 07:25 PM |
|----------------------------|------------------|--|
| Compound                   |                  | %Recovery  |
| Vinyl Chloride             |                  | 97   |
| 1,1-Dichloroethene         |                  | 113  |
| 1,1-Dichloroethane         |                  | 97   |
| cis-1,2-Dichloroethene     |                  | 115  |
| 1,1,1-Trichloroethane      |                  | 89   |
| Benzene                    |                  | 103  |
| 1,2-Dichloroethane         |                  | 100  |
| Trichloroethene            |                  | 93   |
| Toluene                    |                  | 102  |
| 1,1,2-Trichloroethane      |                  | 98   |
| Tetrachloroethene          |                  | 101  |
| Ethyl Benzene              |                  | 120  |
| m,p-Xylene                 |                  | 130  |
| o-Xylene                   |                  | 135 Q  |
| 1,1,2,2-Tetrachloroethane  |                  | 92   |
| trans-1,2-Dichloroethene   |                  | 110  |
| Methyl tert-butyl ether    |                  | 95   |
| 1,2,4-Trichlorobenzene     |                  | 93   |
| 1,4-Dichlorobenzene        |                  | 119  |
| 1,3-Dichlorobenzene        |                  | 113  |
| 1,2-Dichlorobenzene        |                  | 114  |
| Methylene Chloride         |                  | 96   |
| Acetone                    |                  | 74   |
| Chlorobenzene              |                  | 96   |
| Freon 113                  |                  |  |
| Freon 12                   |                  | 89   |
| Freon 11                   |                  | 88   |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 97        | 70-130 |  |
| Toluene-d8            | 106       | 70-130 |  |
| 4-Bromofluorobenzene  | 103       | 70-130 |  |



Client Sample ID: CCV

Lab ID#: 0806409BR1-07B

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

| File Name:<br>Dil. Factor: | a062505<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/25/08 12:47 PM |
|----------------------------|-----------------|--|
| Compound                   |                 | %Recovery  |
| Vinyl Chloride             |                 | 93   |
| 1,1-Dichloroethene         |                 | 107  |
| 1,1-Dichloroethane         |                 | 96   |
| cis-1,2-Dichloroethene     |                 | 110  |
| 1,1,1-Trichloroethane      |                 | 87   |
| Benzene                    |                 | 103  |
| 1,2-Dichloroethane         |                 | 100  |
| Trichloroethene            |                 | 90   |
| Toluene                    |                 | 100  |
| 1,1,2-Trichloroethane      |                 | 97   |
| Tetrachloroethene          |                 | 99   |
| Ethyl Benzene              |                 | 118  |
| m,p-Xylene                 |                 | 128  |
| o-Xylene                   |                 | 131 Q  |
| 1,1,2,2-Tetrachloroethane  |                 | 95   |
| trans-1,2-Dichloroethene   |                 | 107  |
| Methyl tert-butyl ether    |                 | 84   |
| 1,2,4-Trichlorobenzene     |                 | 89   |
| 1,4-Dichlorobenzene        |                 | 119  |
| 1,3-Dichlorobenzene        |                 | 113  |
| 1,2-Dichlorobenzene        |                 | 114  |
| Methylene Chloride         |                 | 94   |
| Acetone                    |                 | 84   |
| Chlorobenzene              |                 | 96   |
| Freon 113                  |                 |  |
| Freon 12                   |                 | 87   |
| Freon 11                   |                 | 87   |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 99        | 70-130 |  |
| Toluene-d8            | 105       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



Client Sample ID: LCS

Lab ID#: 0806409BR1-08A

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

| File Name:                | a062315 | Date of Collection: NA             |
|---------------------------|---------|------------------------------------|
|                           | 1.00    | Date Of Analysis. 0/24/00 00.33 AM |
| Compound                  |         | %Recovery                          |
| Vinyl Chloride            |         | 90                                 |
| 1,1-Dichloroethene        |         | 117                                |
| 1,1-Dichloroethane        |         | 95                                 |
| cis-1,2-Dichloroethene    |         | 109                                |
| 1,1,1-Trichloroethane     |         |                                    |
| Benzene                   |         | 99                                 |
| 1,2-Dichloroethane        |         | 97                                 |
| Trichloroethene           |         | 88                                 |
| Toluene                   |         | 102                                |
| 1,1,2-Trichloroethane     |         | 92                                 |
| Tetrachloroethene         |         | 96                                 |
| Ethyl Benzene             |         | 111                                |
| m,p-Xylene                |         | 121                                |
| o-Xylene                  |         | 128                                |
| 1,1,2,2-Tetrachloroethane |         | 89                                 |
| trans-1,2-Dichloroethene  |         | 104                                |
| Methyl tert-butyl ether   |         | 89                                 |
| 1,2,4-Trichlorobenzene    |         | 89                                 |
| 1,4-Dichlorobenzene       |         | 110                                |
| 1,3-Dichlorobenzene       |         | 107                                |
| 1,2-Dichlorobenzene       |         | 107                                |
| Methylene Chloride        |         | 99                                 |
| Acetone                   |         | 71                                 |
| Chlorobenzene             |         | 91                                 |
| Freon 113                 |         | 93                                 |
| Freon 12                  |         | 85                                 |
| Freon 11                  |         | 84                                 |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 98        | 70-130 |  |
| Toluene-d8            | 105       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



Client Sample ID: LCS

Lab ID#: 0806409BR1-08B

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

| File Name:<br>Dil. Factor: | a062503<br>1.00 | Date of Collection: NA<br>Date of Analysis: 6/25/08 11:07 AM |
|----------------------------|-----------------|--|
| Compound                   |                 | %Recovery  |
| Vinyl Chloride             |                 | 98   |
| 1,1-Dichloroethene         |                 | 111  |
| 1,1-Dichloroethane         |                 | 92   |
| cis-1,2-Dichloroethene     |                 | 112  |
| 1,1,1-Trichloroethane      |                 | 92   |
| Benzene                    |                 | 96   |
| 1,2-Dichloroethane         |                 | 95   |
| Trichloroethene            |                 | 87   |
| Toluene                    |                 | 101  |
| 1,1,2-Trichloroethane      |                 | 90   |
| Tetrachloroethene          |                 | 93   |
| Ethyl Benzene              |                 | 112  |
| m,p-Xylene                 |                 | 123  |
| o-Xylene                   |                 | 133 Q  |
| 1,1,2,2-Tetrachloroethane  |                 | 90   |
| trans-1,2-Dichloroethene   |                 | 104  |
| Methyl tert-butyl ether    |                 | 124  |
| 1,2,4-Trichlorobenzene     |                 | 110  |
| 1,4-Dichlorobenzene        |                 | 116  |
| 1,3-Dichlorobenzene        |                 | 110  |
| 1,2-Dichlorobenzene        |                 | 110  |
| Methylene Chloride         |                 | 95   |
| Acetone                    |                 | 70   |
| Chlorobenzene              |                 | 90   |
| Freon 113                  |                 | 89   |
| Freon 12                   |                 | 87   |
| Freon 11                   |                 | 81   |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

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



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- Laboratory Narrative;
- Results; and
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## WORK ORDER #: 0807447

Work Order Summary

| CLIENT:         | Ms. Claire Lund<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:         | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|---|------------------|--|
| PHONE:          | 603-229-1900  | <b>P.O.</b> #    |  |
| FAX:            | 603-229-1919  | <b>PROJECT</b> # | 2924.00 8D K   |
| DATE RECEIVED:  | 07/24/2008  | CONTACT          | Bryanna Langley  |
| DATE COMPLETED: | 08/04/2008  | connen           | Di fanna Eangley   |

|            |                           |                    | RECEIPT    | FINAL           |
|------------|---------------------------|--------------------|------------|-----------------|
| FRACTION # | NAME                      | <u>TEST</u>        | VAC./PRES. | <b>PRESSURE</b> |
| 01A        | BF-23                     | Modified TO-15 SIM | 10.5 "Hg   | 5 psi           |
| 02A        | BH-23 CHASE               | Modified TO-15 SIM | 6.5 "Hg    | 5 psi           |
| 02AA       | BH-23 CHASE Lab Duplicate | Modified TO-15 SIM | 6.5 "Hg    | 5 psi           |
| 03A        | BG-23 CHASE               | Modified TO-15 SIM | 4.5 "Hg    | 5 psi           |
| 04A        | BH-24 CHASE               | Modified TO-15 SIM | 6.5 "Hg    | 5 psi           |
| 05A        | Lab Blank                 | Modified TO-15 SIM | NA         | NA              |
| 06A        | CCV                       | Modified TO-15 SIM | NA         | NA              |
| 07A        | LCS                       | Modified TO-15 SIM | NA         | NA              |

Sinda d. Fruman

DATE: \_\_\_\_

Laboratory Director

CERTIFIED BY:

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/07, Expiration date: 06/30/08

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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Page 1 of 13



## LABORATORY NARRATIVE Modified TO-15 SIM Sanborn, Head & Associates Workorder# 0807447

Four 6 Liter Summa Canister (SIM Certified) samples were received on July 24, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode. The method involves concentrating up to 0.5 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

## **Receiving Notes**

There were no receiving discrepancies.

## **Analytical Notes**

There were no analytical discrepancies.

## **Definition of Data Qualifying Flags**

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

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

J - Estimated value.

E - Exceeds instrument calibration range.



- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV
- 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: BF-23

#### Lab ID#: 0807447-01A

| Compound          | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Trichloroethene   | 0.041                | 0.056            | 0.22                  | 0.30              |
| Toluene           | 0.041                | 0.22             | 0.16                  | 0.84              |
| Tetrachloroethene | 0.041                | 12               | 0.28                  | 80                |
| Acetone           | 1.0                  | 4.9              | 2.4                   | 12                |
| Freon 113         | 0.041                | 0.10             | 0.32                  | 0.76              |
| Freon 12          | 0.041                | 0.48             | 0.20                  | 2.4               |
| Freon 11          | 0.041                | 0.22             | 0.23                  | 1.2               |

## Client Sample ID: BH-23 CHASE

#### Lab ID#: 0807447-02A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Trichloroethene   | 0.043      | 0.048  | 0.23       | 0.26    |
| Toluene           | 0.043      | 0.26   | 0.16       | 0.96    |
| Tetrachloroethene | 0.043      | 37     | 0.29       | 250     |
| Acetone           | 1.1        | 7.4    | 2.5        | 18      |
| Freon 113         | 0.043      | 0.096  | 0.33       | 0.73    |
| Freon 12          | 0.043      | 0.49   | 0.21       | 2.4     |
| Freon 11          | 0.043      | 0.22   | 0.24       | 1.2     |

### Client Sample ID: BH-23 CHASE Lab Duplicate

#### Lab ID#: 0807447-02AA

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Trichloroethene   | 0.043      | 0.049  | 0.23       | 0.26    |
| Toluene           | 0.043      | 0.26   | 0.16       | 0.96    |
| Tetrachloroethene | 0.043      | 37     | 0.29       | 250     |
| Acetone           | 1.1        | 7.2    | 2.5        | 17      |
| Freon 113         | 0.043      | 0.098  | 0.33       | 0.75    |
| Freon 12          | 0.043      | 0.48   | 0.21       | 2.4     |
| Freon 11          | 0.043      | 0.22   | 0.24       | 1.2     |

#### Client Sample ID: BG-23 CHASE

Lab ID#: 0807447-03A



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

## Client Sample ID: BG-23 CHASE

#### Lab ID#: 0807447-03A

| Compound          | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Trichloroethene   | 0.045                | 0.046            | 0.24                  | 0.24              |
| Toluene           | 0.045                | 0.25             | 0.17                  | 0.94              |
| Tetrachloroethene | 0.045                | 36               | 0.31                  | 240               |
| Acetone           | 1.1                  | 6.8              | 2.7                   | 16                |
| Freon 113         | 0.045                | 0.10             | 0.35                  | 0.79              |
| Freon 12          | 0.045                | 0.51             | 0.22                  | 2.5               |
| Freon 11          | 0.045                | 0.22             | 0.25                  | 1.3               |

## Client Sample ID: BH-24 CHASE

#### Lab ID#: 0807447-04A

| Compound          | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (vaqq)     | (pppv) | (uG/m3)    | (uG/ms) |
| Toluene           | 0.049      | 0.25   | 0.18       | 0.93    |
| Tetrachloroethene | 0.049      | 37     | 0.33       | 250     |
| Acetone           | 1.2        | 5.5    | 2.9        | 13      |
| Freon 113         | 0.049      | 0.10   | 0.37       | 0.77    |
| Freon 12          | 0.049      | 0.50   | 0.24       | 2.4     |
| Freon 11          | 0.049      | 0.22   | 0.27       | 1.2     |



## Client Sample ID: BF-23 Lab ID#: 0807447-01A

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

| File Name:<br>Dil. Factor: | a072908<br>2.06      |                  | Date of Collection: 7/<br>Date of Analysis: 7/2 | /21/08<br>9/08 02:17 PM |
|----------------------------|----------------------|------------------|---|-------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.021                | Not Detected     | 0.053   | Not Detected            |
| 1,1-Dichloroethene         | 0.021                | Not Detected     | 0.082   | Not Detected            |
| 1,1-Dichloroethane         | 0.041                | Not Detected     | 0.17  | Not Detected            |
| cis-1,2-Dichloroethene     | 0.041                | Not Detected     | 0.16  | Not Detected            |
| 1,1,1-Trichloroethane      | 0.041                | Not Detected     | 0.22  | Not Detected            |
| Benzene                    | 0.10                 | Not Detected     | 0.33  | Not Detected            |
| 1,2-Dichloroethane         | 0.041                | Not Detected     | 0.17  | Not Detected            |
| Trichloroethene            | 0.041                | 0.056            | 0.22  | 0.30                    |
| Toluene                    | 0.041                | 0.22             | 0.16  | 0.84                    |
| 1,1,2-Trichloroethane      | 0.041                | Not Detected     | 0.22  | Not Detected            |
| Tetrachloroethene          | 0.041                | 12               | 0.28  | 80                      |
| Ethyl Benzene              | 0.041                | Not Detected     | 0.18  | Not Detected            |
| m,p-Xylene                 | 0.082                | Not Detected     | 0.36  | Not Detected            |
| o-Xylene                   | 0.041                | Not Detected     | 0.18  | Not Detected            |
| 1,1,2,2-Tetrachloroethane  | 0.041                | Not Detected     | 0.28  | Not Detected            |
| trans-1,2-Dichloroethene   | 0.21                 | Not Detected     | 0.82  | Not Detected            |
| Methyl tert-butyl ether    | 0.21                 | Not Detected     | 0.74  | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.21                 | Not Detected     | 1.5   | Not Detected            |
| 1,4-Dichlorobenzene        | 0.041                | Not Detected     | 0.25  | Not Detected            |
| 1,3-Dichlorobenzene        | 0.041                | Not Detected     | 0.25  | Not Detected            |
| 1,2-Dichlorobenzene        | 0.041                | Not Detected     | 0.25  | Not Detected            |
| Methylene Chloride         | 0.41                 | Not Detected     | 1.4   | Not Detected            |
| Acetone                    | 1.0                  | 4.9              | 2.4   | 12                      |
| Chlorobenzene              | 0.041                | Not Detected     | 0.19  | Not Detected            |
| Freon 113                  | 0.041                | 0.10             | 0.32  | 0.76                    |
| Freon 12                   | 0.041                | 0.48             | 0.20  | 2.4                     |
| Freon 11                   | 0.041                | 0.22             | 0.23  | 1.2                     |

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



# Client Sample ID: BH-23 CHASE Lab ID#: 0807447-02A

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

| File Name:<br>Dil. Factor: | a072910<br>2.14      |                  | Date of Collection: 7/<br>Date of Analysis: 7/2 | 21/08<br>9/08 04:02 PM |
|----------------------------|----------------------|------------------|---|------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(uG/m3)      |
| <br>Vinyl Chloride         | 0.021                | Not Detected     | 0.055   | Not Detected           |
| 1 1-Dichloroethene         | 0.021                | Not Detected     | 0.085   | Not Detected           |
| 1 1-Dichloroethane         | 0.043                | Not Detected     | 0.17  | Not Detected           |
| cis-1 2-Dichloroethene     | 0.043                | Not Detected     | 0.17  | Not Detected           |
| 1.1.1-Trichloroethane      | 0.043                | Not Detected     | 0.23  | Not Detected           |
| Benzene                    | 0.11                 | Not Detected     | 0.34  | Not Detected           |
| 1.2-Dichloroethane         | 0.043                | Not Detected     | 0.17  | Not Detected           |
| Trichloroethene            | 0.043                | 0.048            | 0.23  | 0.26                   |
| Toluene                    | 0.043                | 0.26             | 0.16  | 0.96                   |
| 1,1,2-Trichloroethane      | 0.043                | Not Detected     | 0.23  | Not Detected           |
| Tetrachloroethene          | 0.043                | 37               | 0.29  | 250                    |
| Ethyl Benzene              | 0.043                | Not Detected     | 0.18  | Not Detected           |
| m,p-Xylene                 | 0.086                | Not Detected     | 0.37  | Not Detected           |
| o-Xylene                   | 0.043                | Not Detected     | 0.18  | Not Detected           |
| 1,1,2,2-Tetrachloroethane  | 0.043                | Not Detected     | 0.29  | Not Detected           |
| trans-1,2-Dichloroethene   | 0.21                 | Not Detected     | 0.85  | Not Detected           |
| Methyl tert-butyl ether    | 0.21                 | Not Detected     | 0.77  | Not Detected           |
| 1,2,4-Trichlorobenzene     | 0.21                 | Not Detected     | 1.6   | Not Detected           |
| 1,4-Dichlorobenzene        | 0.043                | Not Detected     | 0.26  | Not Detected           |
| 1,3-Dichlorobenzene        | 0.043                | Not Detected     | 0.26  | Not Detected           |
| 1,2-Dichlorobenzene        | 0.043                | Not Detected     | 0.26  | Not Detected           |
| Methylene Chloride         | 0.43                 | Not Detected     | 1.5   | Not Detected           |
| Acetone                    | 1.1                  | 7.4              | 2.5   | 18                     |
| Chlorobenzene              | 0.043                | Not Detected     | 0.20  | Not Detected           |
| Freon 113                  | 0.043                | 0.096            | 0.33  | 0.73                   |
| Freon 12                   | 0.043                | 0.49             | 0.21  | 2.4                    |
| Freon 11                   | 0.043                | 0.22             | 0.24  | 1.2                    |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |
| Toluene-d8            | 90        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



## Client Sample ID: BH-23 CHASE Lab Duplicate

## Lab ID#: 0807447-02AA

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

| File Name:<br>Dil. Factor: | a072911<br>2.14      |                  | Date of Collection: 7/<br>Date of Analysis: 7/2 | /21/08<br>9/08 04:41 PM |
|----------------------------|----------------------|------------------|---|-------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.021                | Not Detected     | 0.055   | Not Detected            |
| 1,1-Dichloroethene         | 0.021                | Not Detected     | 0.085   | Not Detected            |
| 1,1-Dichloroethane         | 0.043                | Not Detected     | 0.17  | Not Detected            |
| cis-1,2-Dichloroethene     | 0.043                | Not Detected     | 0.17  | Not Detected            |
| 1,1,1-Trichloroethane      | 0.043                | Not Detected     | 0.23  | Not Detected            |
| Benzene                    | 0.11                 | Not Detected     | 0.34  | Not Detected            |
| 1,2-Dichloroethane         | 0.043                | Not Detected     | 0.17  | Not Detected            |
| Trichloroethene            | 0.043                | 0.049            | 0.23  | 0.26                    |
| Toluene                    | 0.043                | 0.26             | 0.16  | 0.96                    |
| 1,1,2-Trichloroethane      | 0.043                | Not Detected     | 0.23  | Not Detected            |
| Tetrachloroethene          | 0.043                | 37               | 0.29  | 250                     |
| Ethyl Benzene              | 0.043                | Not Detected     | 0.18  | Not Detected            |
| m,p-Xylene                 | 0.086                | Not Detected     | 0.37  | Not Detected            |
| o-Xylene                   | 0.043                | Not Detected     | 0.18  | Not Detected            |
| 1,1,2,2-Tetrachloroethane  | 0.043                | Not Detected     | 0.29  | Not Detected            |
| trans-1,2-Dichloroethene   | 0.21                 | Not Detected     | 0.85  | Not Detected            |
| Methyl tert-butyl ether    | 0.21                 | Not Detected     | 0.77  | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.21                 | Not Detected     | 1.6   | Not Detected            |
| 1,4-Dichlorobenzene        | 0.043                | Not Detected     | 0.26  | Not Detected            |
| 1,3-Dichlorobenzene        | 0.043                | Not Detected     | 0.26  | Not Detected            |
| 1,2-Dichlorobenzene        | 0.043                | Not Detected     | 0.26  | Not Detected            |
| Methylene Chloride         | 0.43                 | Not Detected     | 1.5   | Not Detected            |
| Acetone                    | 1.1                  | 7.2              | 2.5   | 17                      |
| Chlorobenzene              | 0.043                | Not Detected     | 0.20  | Not Detected            |
| Freon 113                  | 0.043                | 0.098            | 0.33  | 0.75                    |
| Freon 12                   | 0.043                | 0.48             | 0.21  | 2.4                     |
| Freon 11                   | 0.043                | 0.22             | 0.24  | 1.2                     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 95        | 70-130 |
| Toluene-d8            | 90        | 70-130 |
| 4-Bromofluorobenzene  | 96        | 70-130 |



## Client Sample ID: BG-23 CHASE Lab ID#: 0807447-03A

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

| File Name:<br>Dil. Factor: | a072917<br>2.26      |                  | Date of Collection: 7/<br>Date of Analysis: 7/3 | /21/08<br>0/08 03:29 AM |
|----------------------------|----------------------|------------------|---|-------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.023                | Not Detected     | 0.058   | Not Detected            |
| 1,1-Dichloroethene         | 0.023                | Not Detected     | 0.090   | Not Detected            |
| 1,1-Dichloroethane         | 0.045                | Not Detected     | 0.18  | Not Detected            |
| cis-1,2-Dichloroethene     | 0.045                | Not Detected     | 0.18  | Not Detected            |
| 1,1,1-Trichloroethane      | 0.045                | Not Detected     | 0.25  | Not Detected            |
| Benzene                    | 0.11                 | Not Detected     | 0.36  | Not Detected            |
| 1,2-Dichloroethane         | 0.045                | Not Detected     | 0.18  | Not Detected            |
| Trichloroethene            | 0.045                | 0.046            | 0.24  | 0.24                    |
| Toluene                    | 0.045                | 0.25             | 0.17  | 0.94                    |
| 1,1,2-Trichloroethane      | 0.045                | Not Detected     | 0.25  | Not Detected            |
| Tetrachloroethene          | 0.045                | 36               | 0.31  | 240                     |
| Ethyl Benzene              | 0.045                | Not Detected     | 0.20  | Not Detected            |
| m,p-Xylene                 | 0.090                | Not Detected     | 0.39  | Not Detected            |
| o-Xylene                   | 0.045                | Not Detected     | 0.20  | Not Detected            |
| 1,1,2,2-Tetrachloroethane  | 0.045                | Not Detected     | 0.31  | Not Detected            |
| trans-1,2-Dichloroethene   | 0.23                 | Not Detected     | 0.90  | Not Detected            |
| Methyl tert-butyl ether    | 0.23                 | Not Detected     | 0.81  | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.23                 | Not Detected     | 1.7   | Not Detected            |
| 1,4-Dichlorobenzene        | 0.045                | Not Detected     | 0.27  | Not Detected            |
| 1,3-Dichlorobenzene        | 0.045                | Not Detected     | 0.27  | Not Detected            |
| 1,2-Dichlorobenzene        | 0.045                | Not Detected     | 0.27  | Not Detected            |
| Methylene Chloride         | 0.45                 | Not Detected     | 1.6   | Not Detected            |
| Acetone                    | 1.1                  | 6.8              | 2.7   | 16                      |
| Chlorobenzene              | 0.045                | Not Detected     | 0.21  | Not Detected            |
| Freon 113                  | 0.045                | 0.10             | 0.35  | 0.79                    |
| Freon 12                   | 0.045                | 0.51             | 0.22  | 2.5                     |
| Freon 11                   | 0.045                | 0.22             | 0.25  | 1.3                     |

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



## Client Sample ID: BH-24 CHASE Lab ID#: 0807447-04A

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

| File Name:<br>Dil. Factor: | a072918<br>2.44      |                  | Date of Collection: 7/ | /21/08<br>0/08 04:08 AM |
|----------------------------|----------------------|------------------|------------------------|-------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)  | Amount<br>(uG/m3)       |
| Vinyl Chloride             | 0.024                | Not Detected     | 0.062                  | Not Detected            |
| 1,1-Dichloroethene         | 0.024                | Not Detected     | 0.097                  | Not Detected            |
| 1,1-Dichloroethane         | 0.049                | Not Detected     | 0.20                   | Not Detected            |
| cis-1,2-Dichloroethene     | 0.049                | Not Detected     | 0.19                   | Not Detected            |
| 1,1,1-Trichloroethane      | 0.049                | Not Detected     | 0.27                   | Not Detected            |
| Benzene                    | 0.12                 | Not Detected     | 0.39                   | Not Detected            |
| 1,2-Dichloroethane         | 0.049                | Not Detected     | 0.20                   | Not Detected            |
| Trichloroethene            | 0.049                | Not Detected     | 0.26                   | Not Detected            |
| Toluene                    | 0.049                | 0.25             | 0.18                   | 0.93                    |
| 1,1,2-Trichloroethane      | 0.049                | Not Detected     | 0.27                   | Not Detected            |
| Tetrachloroethene          | 0.049                | 37               | 0.33                   | 250                     |
| Ethyl Benzene              | 0.049                | Not Detected     | 0.21                   | Not Detected            |
| m,p-Xylene                 | 0.098                | Not Detected     | 0.42                   | Not Detected            |
| o-Xylene                   | 0.049                | Not Detected     | 0.21                   | Not Detected            |
| 1,1,2,2-Tetrachloroethane  | 0.049                | Not Detected     | 0.34                   | Not Detected            |
| trans-1,2-Dichloroethene   | 0.24                 | Not Detected     | 0.97                   | Not Detected            |
| Methyl tert-butyl ether    | 0.24                 | Not Detected     | 0.88                   | Not Detected            |
| 1,2,4-Trichlorobenzene     | 0.24                 | Not Detected     | 1.8                    | Not Detected            |
| 1,4-Dichlorobenzene        | 0.049                | Not Detected     | 0.29                   | Not Detected            |
| 1,3-Dichlorobenzene        | 0.049                | Not Detected     | 0.29                   | Not Detected            |
| 1,2-Dichlorobenzene        | 0.049                | Not Detected     | 0.29                   | Not Detected            |
| Methylene Chloride         | 0.49                 | Not Detected     | 1.7                    | Not Detected            |
| Acetone                    | 1.2                  | 5.5              | 2.9                    | 13                      |
| Chlorobenzene              | 0.049                | Not Detected     | 0.22                   | Not Detected            |
| Freon 113                  | 0.049                | 0.10             | 0.37                   | 0.77                    |
| Freon 12                   | 0.049                | 0.50             | 0.24                   | 2.4                     |
| Freon 11                   | 0.049                | 0.22             | 0.27                   | 1.2                     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |
| Toluene-d8            | 90        | 70-130 |
| 4-Bromofluorobenzene  | 95        | 70-130 |



## Client Sample ID: Lab Blank Lab ID#: 0807447-05A

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

| File Name:<br>Dil. Factor: | a072907<br>1.00      |                  | Date of Collection: NA<br>Date of Analysis: 7/2 | 9/08 12:44 PM     |
|----------------------------|----------------------|------------------|---|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                           | Amount<br>(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      |
| 1,2,4-Trichlorobenzene     | 0.10                 | Not Detected     | 0.74  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.020                | Not Detected     | 0.12  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.020                | Not Detected     | 0.12  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.020                | Not Detected     | 0.12  | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected     | 0.69  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected     | 1.2   | Not Detected      |
| Chlorobenzene              | 0.020                | Not Detected     | 0.092   | Not Detected      |
| Freon 113                  | 0.020                | Not Detected     | 0.15  | Not Detected      |
| Freon 12                   | 0.020                | Not Detected     | 0.099   | Not Detected      |
| Freon 11                   | 0.020                | Not Detected     | 0.11  | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 94        | 70-130 |  |
| Toluene-d8            | 89        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



**Client Sample ID: CCV** 

Lab ID#: 0807447-06A

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

| File Name:                | a072902 | Date of Collection: NA             |
|---------------------------|---------|------------------------------------|
|                           | 1.00    | Date of Analysis: 7/29/00 00:39 AM |
| Compound                  |         | %Recovery                          |
| Vinyl Chloride            |         | 88                                 |
| 1,1-Dichloroethene        |         | 81                                 |
| 1,1-Dichloroethane        |         | 80                                 |
| cis-1,2-Dichloroethene    |         | 86                                 |
| 1,1,1-Trichloroethane     |         | 78                                 |
| Benzene                   |         | 88                                 |
| 1,2-Dichloroethane        |         | 77                                 |
| Trichloroethene           |         | 86                                 |
| Toluene                   |         | 88                                 |
| 1,1,2-Trichloroethane     |         | 89                                 |
| Tetrachloroethene         |         | 92                                 |
| Ethyl Benzene             |         | 98                                 |
| m,p-Xylene                |         | 97                                 |
| o-Xylene                  |         | 95                                 |
| 1,1,2,2-Tetrachloroethane |         | 85                                 |
| trans-1,2-Dichloroethene  |         | 92                                 |
| Methyl tert-butyl ether   |         | 71                                 |
| 1,2,4-Trichlorobenzene    |         | 86                                 |
| 1,4-Dichlorobenzene       |         | 96                                 |
| 1,3-Dichlorobenzene       |         | 96                                 |
| 1,2-Dichlorobenzene       |         | 94                                 |
| Methylene Chloride        |         | 83                                 |
| Acetone                   |         | 70                                 |
| Chlorobenzene             |         | 98                                 |
| Freon 113                 |         | 93                                 |
| Freon 12                  |         | 81                                 |
| Freon 11                  |         | 71                                 |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 78        | 70-130 |  |
| Toluene-d8            | 95        | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



**Client Sample ID: LCS** 

Lab ID#: 0807447-07A

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

| File Name:                | a072904 | Date of Collection: NA             |
|---------------------------|---------|------------------------------------|
| Dil. Factor:              | 1.00    | Date of Analysis: 7/29/08 10:16 AM |
| Compound                  |         | %Recovery                          |
| Vinyl Chloride            |         | 79                                 |
| 1,1-Dichloroethene        |         | 86                                 |
| 1,1-Dichloroethane        |         | 83                                 |
| cis-1,2-Dichloroethene    |         | 84                                 |
| 1,1,1-Trichloroethane     |         | 76                                 |
| Benzene                   |         | 85                                 |
| 1,2-Dichloroethane        |         | 80                                 |
| Trichloroethene           |         | 82                                 |
| Toluene                   |         | 87                                 |
| 1,1,2-Trichloroethane     |         | 87                                 |
| Tetrachloroethene         |         | 89                                 |
| Ethyl Benzene             |         | 91                                 |
| m,p-Xylene                |         | 90                                 |
| o-Xylene                  |         | 87                                 |
| 1,1,2,2-Tetrachloroethane |         | 81                                 |
| trans-1,2-Dichloroethene  |         | 88                                 |
| Methyl tert-butyl ether   |         | 61                                 |
| 1,2,4-Trichlorobenzene    |         | 80                                 |
| 1,4-Dichlorobenzene       |         | 87                                 |
| 1,3-Dichlorobenzene       |         | 87                                 |
| 1,2-Dichlorobenzene       |         | 85                                 |
| Methylene Chloride        |         | 86                                 |
| Acetone                   |         | 75                                 |
| Chlorobenzene             |         | 93                                 |
| Freon 113                 |         | 95                                 |
| Freon 12                  |         | 74                                 |
| Freon 11                  |         | 68 Q                               |

Q = Exceeds Quality Control limits. Container Type: NA - Not Applicable

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 83        | 70-130 |
| Toluene-d8            | 95        | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



### Sample Transportation Notice

Relinquishing signature on this occurrent 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. Relinduishing signature also indicates agreement to hold hamiless, 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.1. Hotline (300) 467-4922

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

Page of (

| Project Manager DAVE SHEA   |                                       |                   |                                       |               | Project Info:    |                          |                    |               | Turn Around |                     | Lab Use Only        |           |             |
|---|---------------------------------------|-------------------|---------------------------------------|---------------|------------------|--------------------------|--------------------|---------------|-------------|---------------------|---------------------|-----------|-------------|
| Collected by: (Print and Sign) PATCHLY MALONE (STITUTION Del              |                                       |                   |                                       |               | P.O. #           |                          |                    | Marmal        |             | Pressurized by:     |                     |           |             |
| Company SAN BARN, HENDEADEL Email dshearesanbornhead ion                  |                                       |                   |                                       |               |                  |                          |                    | A Normal      |             | Date:               |                     |           |             |
| Address 20  | State NA                              | State NA Zip 0330 |                                       |               | Project #        |                          |                    | Hush          |             | Pressurization Gas: |                     |           |             |
| Phone 603 2.29 1900 Fax 603 229 1919                                      |                                       |                   |                                       |               |                  | Project Name <b>BO</b> K |                    |               | specify     |                     |                     |           |             |
|   | · · · · · · · · · · · · · · · · · · · |                   |                                       |               | ate              | Time                     |                    |               | Canis       |                     | ter Pressure/Vacuum |           |             |
| Lab I.D.  | Field Sample I.D. (Location)          | Can #             | of                                    | of Collection |                  | of Collection            | Analyses Requested |               |             | Initial             | Final               | Receipt   | Final (pai) |
| . Ola   | BF-23                                 | 33321             | 7                                     | ha            | 0%               | 22:50                    | 23 106             | (TRH cite lie | J)          | ~ 33                | -12                 | i . ·     | · .         |
| 02A   | BH-23 CHASE                           | 4206              | 7                                     | 12            | ICB              | 22:53                    |                    | [<br>[        | , <u> </u>  | -‰                  | -5                  |           |             |
| 03A   | BG-23 CHASE                           | 5075              | H                                     | 24            | 106              | 22:55                    |                    |               |             | *32                 | -6                  |           |             |
| OUS   | BH-24 CHASE                           | 30851             | 귀                                     | 21            | 015              | 22:58                    | V                  | /             |             | -335                | - \$                |           |             |
|   |                                       |                   | Γ                                     |               |                  | · · · · · ·              |                    |               |             |                     | - V                 |           |             |
|   |                                       | +                 | $\vdash$                              |               |                  | i                        |                    |               |             |                     |                     |           | ·           |
|   |                                       |                   | $\vdash$                              |               |                  |                          |                    |               |             |                     |                     | . :       |             |
| · · · · · · · · · · ·   |                                       |                   | $\vdash$                              |               |                  |                          |                    |               |             |                     |                     | ·.        |             |
| an Ch   |                                       |                   | $\vdash$                              |               |                  |                          |                    |               |             |                     |                     | . •       | • • • • • • |
| · · ·   | ·····                                 |                   | $\vdash$                              |               |                  |                          |                    |               | _           |                     |                     | · · · · · |             |
| Relinguish  | ed,by: (signature) / Date/Time        | Received b        | y: (s                                 | sign          | at <b>, (</b> e) | i<br>Date/Time           | -1.                | Notes:        |             |                     |                     |           |             |
| Satziers 18/21m 7/23/08 10:00 Monica Graggen AL 12408                     |                                       |                   |                                       |               |                  |                          |                    |               |             |                     |                     |           |             |
| Relinquished by: (signature) Date/Time Received by: (signature) Gate/Time |                                       |                   |                                       |               |                  |                          |                    |               |             |                     |                     |           |             |
| Police vieland by: (signature) Poto/Time                                  |                                       |                   | energied by: (signature) Bate/Time    |               |                  |                          |                    |               |             |                     |                     |           |             |
| neir gusneu by, (agnature) i bater i nig                                  |                                       |                   | received by, (signalere) – Dater Line |               |                  |                          |                    |               |             |                     |                     |           |             |
| Lab Shipper Name Air Bill # Temp (°C) Condition Condition Work Order #    |                                       |                   |                                       |               |                  |                          |                    |               |             |                     |                     |           |             |
| Use Ted En 864621/537/2 NA GODDA (Yes) No None                            |                                       |                   |                                       |               |                  |                          |                    |               |             |                     |                     |           |             |
|   |                                       |                   |                                       |               | _                |                          |                    | 0             |             |                     | 08(                 | )744      | 7           |


11/3/2008 Ms. Claire Lund Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: Project #:

Dear Ms. Claire Lund

The following report includes the data for the above referenced project for sample(s) received on 10/21/2008 at Air Toxics Ltd.

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

Regards,

Bujanna Lanefey

Bryanna Langley Project Manager



## WORK ORDER #: 0810465

Work Order Summary

| CLIENT:         | Ms. Claire Lund<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:      | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|---|---------------|--|
| PHONE:          | 603-229-1900  | <b>P.O.</b> # |  |
| FAX:            | 603-229-1919  | PROJECT #     |  |
| DATE RECEIVED:  | 10/21/2008  | CONTACT:      | Bryanna Langley  |
| DATE COMPLETED: | 11/03/2008  |               | 21)  |

|            |   |                     | RECEIPT    | FINAL    |
|------------|---|---------------------|------------|----------|
| FRACTION # | NAME                                    | <u>TEST</u>         | VAC./PRES. | PRESSURE |
| 01A        | Between BG-BH22 330D 1st Fl.            | Modified TO-15/TICs | 10.0 "Hg   | 5 psi    |
| 02A        | Gowning BG-24 COLM. 330D 1st Fl.        | Modified TO-15/TICs | 8.5 "Hg    | 5 psi    |
| 03A        | Crib1 BH-23 COLM 330D 1st Fl.           | Modified TO-15/TICs | 8.5 "Hg    | 5 psi    |
| 04A        | Punch-COLM BE23 330D 1st Fl.            | Modified TO-15/TICs | 11.0 "Hg   | 5 psi    |
| 04AA       | Punch-COLM BE23 330D 1st Fl. Lab Duplic | Modified TO-15/TICs | 11.0 "Hg   | 5 psi    |
| 05A        | Lab Blank                               | Modified TO-15/TICs | NA         | NA       |
| 06A        | CCV                                     | Modified TO-15/TICs | NA         | NA       |
| 07A        | LCS                                     | Modified TO-15/TICs | NA         | NA       |
|            |   |                     |            |          |

Sinda d. Fruman

DATE: \_\_\_\_\_

Laboratory Director

CERTIFIED BY:

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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Page 1 of 12



# LABORATORY NARRATIVE Modified TO-15 Sanborn, Head & Associates Workorder# 0810465

Four 6 Liter Summa Canister (100% Certified) samples were received on October 21, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

| Requirement                   | TO-15  | ATL Modifications  |
|-------------------------------|--|--|
| ICAL %RSD acceptance criteria | +- 30% RSD with 2<br>compounds allowed<br>out to < 40% RSD | 30% RSD with 4 compounds allowed out to < 40% RSD  |
| Daily Calibration             | +- 30% Difference  | = 30% Difference with four allowed out up to </=40%.;<br flag and narrate outliers   |
| Blank and standards           | Zero air   | Nitrogen   |
| Method Detection Limit        | Follow 40CFR Pt.136<br>App. B                              | The MDL met all relevant requirements in Method TO-15<br>(statistical MDL less than the LOQ). The concentration of<br>the spiked replicate may have exceeded 10X the calculated<br>MDL in some cases |
| Sample collection media       | Summa canister   | ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request   |

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

# **Receiving Notes**

Sample identification for all samples were not provided on the sample tags. Therefore the information on the Chain of Custody was used to process and report the samples.

# **Analytical Notes**

Specific analytes that are requested by the client to be reported as tentatively identified compounds (TICs) are determined by searching for each compound's characteristic spectra. If no chromatographic peak displaying the compound specific spectra exists, then the TIC is reported as not detected. Please note that the laboratory has not evaluated the stability of any heretofore tentatively identified compound in the vapor phase or for efficiency of recovery through the analytical system.



# **Definition of Data Qualifying Flags**

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

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

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

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

## Client Sample ID: Between BG-BH22 330D 1st Fl.

#### Lab ID#: 0810465-01A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.20       | 0.68   | 0.99       | 3.4     |
| Tetrachloroethene | 0.20       | 5.8    | 1.4        | 39      |

#### Client Sample ID: Gowning BG-24 COLM. 330D 1st Fl.

#### Lab ID#: 0810465-02A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.19       | 0.56   | 0.92       | 2.8     |
| Tetrachloroethene | 0.19       | 17     | 1.3        | 110     |

#### Client Sample ID: Crib1 BH-23 COLM 330D 1st Fl.

#### Lab ID#: 0810465-03A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.19       | 0.76   | 0.92       | 3.8     |
| Tetrachloroethene | 0.19       | 30     | 1.3        | 200     |

#### Client Sample ID: Punch-COLM BE23 330D 1st Fl.

#### Lab ID#: 0810465-04A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.21       | 0.65   | 1.0        | 3.2     |
| Tetrachloroethene | 0.21       | 7.8    | 1.4        | 53      |

#### Client Sample ID: Punch-COLM BE23 330D 1st Fl. Lab Duplicate

#### Lab ID#: 0810465-04AA

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.21       | 0.64   | 1.0        | 3.2     |
| Tetrachloroethene | 0.21       | 7.6    | 1.4        | 51      |



# Client Sample ID: Between BG-BH22 330D 1st Fl.

# Lab ID#: 0810465-01A

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

| File Name:<br>Dil. Factor: | s110208<br>2.01      |                  | Date of Collection: 10/16/08<br>Date of Analysis: 11/2/08 03:41 |                   |  |
|----------------------------|----------------------|------------------|---|-------------------|--|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)   | Amount<br>(uG/m3) |  |
| Freon 12                   | 0.20                 | 0.68             | 0.99  | 3.4               |  |
| Vinyl Chloride             | 0.20                 | Not Detected     | 0.51  | Not Detected      |  |
| Freon 11                   | 0.20                 | Not Detected     | 1.1   | Not Detected      |  |
| Freon 113                  | 0.20                 | Not Detected     | 1.5   | Not Detected      |  |
| 1,1-Dichloroethene         | 0.20                 | Not Detected     | 0.80  | Not Detected      |  |
| Acetone                    | 1.0                  | Not Detected     | 2.4   | Not Detected      |  |
| Methylene Chloride         | 0.40                 | Not Detected     | 1.4   | Not Detected      |  |
| cis-1,2-Dichloroethene     | 0.20                 | Not Detected     | 0.80  | Not Detected      |  |
| 1,1,1-Trichloroethane      | 0.20                 | Not Detected     | 1.1   | Not Detected      |  |
| Benzene                    | 0.20                 | Not Detected     | 0.64  | Not Detected      |  |
| Trichloroethene            | 0.20                 | Not Detected     | 1.1   | Not Detected      |  |
| Toluene                    | 0.20                 | Not Detected     | 0.76  | Not Detected      |  |
| Tetrachloroethene          | 0.20                 | 5.8              | 1.4   | 39                |  |
| Chlorobenzene              | 0.20                 | Not Detected     | 0.92  | Not Detected      |  |
| Ethyl Benzene              | 0.20                 | Not Detected     | 0.87  | Not Detected      |  |
| m,p-Xylene                 | 0.20                 | Not Detected     | 0.87  | Not Detected      |  |
| o-Xylene                   | 0.20                 | Not Detected     | 0.87  | Not Detected      |  |
| 1,3-Dichlorobenzene        | 0.20                 | Not Detected     | 1.2   | Not Detected      |  |
| 1,4-Dichlorobenzene        | 0.20                 | Not Detected     | 1.2   | Not Detected      |  |
| 1,2-Dichlorobenzene        | 0.20                 | Not Detected     | 1.2   | Not Detected      |  |
| 1,2,4-Trichlorobenzene     | 1.0                  | Not Detected     | 7.4   | Not Detected      |  |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 110       | 70-130 |
| Toluene-d8            | 103       | 70-130 |
| 4-Bromofluorobenzene  | 114       | 70-130 |



## Client Sample ID: Gowning BG-24 COLM. 330D 1st Fl.

Lab ID#: 0810465-02A

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

| File Name:<br>Dil. Factor: | s110209<br>1.87      |                  | Date of Collection: 10/16/08<br>Date of Analysis: 11/2/08 04:12 PM |                   |  |
|----------------------------|----------------------|------------------|--|-------------------|--|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)  | Amount<br>(uG/m3) |  |
| Freon 12                   | 0.19                 | 0.56             | 0.92   | 2.8               |  |
| Vinyl Chloride             | 0.19                 | Not Detected     | 0.48   | Not Detected      |  |
| Freon 11                   | 0.19                 | Not Detected     | 1.0  | Not Detected      |  |
| Freon 113                  | 0.19                 | Not Detected     | 1.4  | Not Detected      |  |
| 1,1-Dichloroethene         | 0.19                 | Not Detected     | 0.74   | Not Detected      |  |
| Acetone                    | 0.94                 | Not Detected     | 2.2  | Not Detected      |  |
| Methylene Chloride         | 0.37                 | Not Detected     | 1.3  | Not Detected      |  |
| cis-1,2-Dichloroethene     | 0.19                 | Not Detected     | 0.74   | Not Detected      |  |
| 1,1,1-Trichloroethane      | 0.19                 | Not Detected     | 1.0  | Not Detected      |  |
| Benzene                    | 0.19                 | Not Detected     | 0.60   | Not Detected      |  |
| Trichloroethene            | 0.19                 | Not Detected     | 1.0  | Not Detected      |  |
| Toluene                    | 0.19                 | Not Detected     | 0.70   | Not Detected      |  |
| Tetrachloroethene          | 0.19                 | 17               | 1.3  | 110               |  |
| Chlorobenzene              | 0.19                 | Not Detected     | 0.86   | Not Detected      |  |
| Ethyl Benzene              | 0.19                 | Not Detected     | 0.81   | Not Detected      |  |
| m,p-Xylene                 | 0.19                 | Not Detected     | 0.81   | Not Detected      |  |
| o-Xylene                   | 0.19                 | Not Detected     | 0.81   | Not Detected      |  |
| 1,3-Dichlorobenzene        | 0.19                 | Not Detected     | 1.1  | Not Detected      |  |
| 1,4-Dichlorobenzene        | 0.19                 | Not Detected     | 1.1  | Not Detected      |  |
| 1,2-Dichlorobenzene        | 0.19                 | Not Detected     | 1.1  | Not Detected      |  |
| 1,2,4-Trichlorobenzene     | 0.94                 | Not Detected     | 6.9  | Not Detected      |  |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 105       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 116       | 70-130 |  |



# Client Sample ID: Crib1 BH-23 COLM 330D 1st Fl.

## Lab ID#: 0810465-03A

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

| File Name:<br>Dil. Factor: | s110210<br>1.87      | Date of Collection: 10/16/08<br>Date of Analysis: 11/2/08 04:57 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                   | 0.19                 | 0.76   | 0.92                  | 3.8               |
| Vinyl Chloride             | 0.19                 | Not Detected   | 0.48                  | Not Detected      |
| Freon 11                   | 0.19                 | Not Detected   | 1.0                   | Not Detected      |
| Freon 113                  | 0.19                 | Not Detected   | 1.4                   | Not Detected      |
| 1,1-Dichloroethene         | 0.19                 | Not Detected   | 0.74                  | Not Detected      |
| Acetone                    | 0.94                 | Not Detected   | 2.2                   | Not Detected      |
| Methylene Chloride         | 0.37                 | Not Detected   | 1.3                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.19                 | Not Detected   | 0.74                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.19                 | Not Detected   | 1.0                   | Not Detected      |
| Benzene                    | 0.19                 | Not Detected   | 0.60                  | Not Detected      |
| Trichloroethene            | 0.19                 | Not Detected   | 1.0                   | Not Detected      |
| Toluene                    | 0.19                 | Not Detected   | 0.70                  | Not Detected      |
| Tetrachloroethene          | 0.19                 | 30   | 1.3                   | 200               |
| Chlorobenzene              | 0.19                 | Not Detected   | 0.86                  | Not Detected      |
| Ethyl Benzene              | 0.19                 | Not Detected   | 0.81                  | Not Detected      |
| m,p-Xylene                 | 0.19                 | Not Detected   | 0.81                  | Not Detected      |
| o-Xylene                   | 0.19                 | Not Detected   | 0.81                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.19                 | Not Detected   | 1.1                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.19                 | Not Detected   | 1.1                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.19                 | Not Detected   | 1.1                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.94                 | Not Detected   | 6.9                   | Not Detected      |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 106       | 70-130 |  |
| Toluene-d8            | 107       | 70-130 |  |
| 4-Bromofluorobenzene  | 118       | 70-130 |  |



# Client Sample ID: Punch-COLM BE23 330D 1st Fl.

# Lab ID#: 0810465-04A

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

| File Name:<br>Dil. Factor: | s110211<br>2 12      | Date of Collection: 10/16/08<br>Date of Analysis: 11/2/08 05:34 |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                   | 0.21                 | 0.65  | 1.0                   | 3.2               |
| Vinyl Chloride             | 0.21                 | Not Detected  | 0.54                  | Not Detected      |
| Freon 11                   | 0.21                 | Not Detected  | 1.2                   | Not Detected      |
| Freon 113                  | 0.21                 | Not Detected  | 1.6                   | Not Detected      |
| 1,1-Dichloroethene         | 0.21                 | Not Detected  | 0.84                  | Not Detected      |
| Acetone                    | 1.1                  | Not Detected  | 2.5                   | Not Detected      |
| Methylene Chloride         | 0.42                 | Not Detected  | 1.5                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.21                 | Not Detected  | 0.84                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.21                 | Not Detected  | 1.2                   | Not Detected      |
| Benzene                    | 0.21                 | Not Detected  | 0.68                  | Not Detected      |
| Trichloroethene            | 0.21                 | Not Detected  | 1.1                   | Not Detected      |
| Toluene                    | 0.21                 | Not Detected  | 0.80                  | Not Detected      |
| Tetrachloroethene          | 0.21                 | 7.8   | 1.4                   | 53                |
| Chlorobenzene              | 0.21                 | Not Detected  | 0.98                  | Not Detected      |
| Ethyl Benzene              | 0.21                 | Not Detected  | 0.92                  | Not Detected      |
| m,p-Xylene                 | 0.21                 | Not Detected  | 0.92                  | Not Detected      |
| o-Xylene                   | 0.21                 | Not Detected  | 0.92                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.21                 | Not Detected  | 1.3                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.21                 | Not Detected  | 1.3                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.21                 | Not Detected  | 1.3                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 1.1                  | Not Detected  | 7.9                   | Not Detected      |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 106       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 120       | 70-130 |  |



## Client Sample ID: Punch-COLM BE23 330D 1st Fl. Lab Duplicate

Lab ID#: 0810465-04AA

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

| File Name:<br>Dil. Factor: | s110212<br>2.12      | Date of Collection: 10/16/08<br>Date of Analysis: 11/2/08 06:11 PN |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                   | 0.21                 | 0.64   | 1.0                   | 3.2               |
| Vinyl Chloride             | 0.21                 | Not Detected   | 0.54                  | Not Detected      |
| Freon 11                   | 0.21                 | Not Detected   | 1.2                   | Not Detected      |
| Freon 113                  | 0.21                 | Not Detected   | 1.6                   | Not Detected      |
| 1,1-Dichloroethene         | 0.21                 | Not Detected   | 0.84                  | Not Detected      |
| Acetone                    | 1.1                  | Not Detected   | 2.5                   | Not Detected      |
| Methylene Chloride         | 0.42                 | Not Detected   | 1.5                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.21                 | Not Detected   | 0.84                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.21                 | Not Detected   | 1.2                   | Not Detected      |
| Benzene                    | 0.21                 | Not Detected   | 0.68                  | Not Detected      |
| Trichloroethene            | 0.21                 | Not Detected   | 1.1                   | Not Detected      |
| Toluene                    | 0.21                 | Not Detected   | 0.80                  | Not Detected      |
| Tetrachloroethene          | 0.21                 | 7.6  | 1.4                   | 51                |
| Chlorobenzene              | 0.21                 | Not Detected   | 0.98                  | Not Detected      |
| Ethyl Benzene              | 0.21                 | Not Detected   | 0.92                  | Not Detected      |
| m,p-Xylene                 | 0.21                 | Not Detected   | 0.92                  | Not Detected      |
| o-Xylene                   | 0.21                 | Not Detected   | 0.92                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.21                 | Not Detected   | 1.3                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.21                 | Not Detected   | 1.3                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.21                 | Not Detected   | 1.3                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 1.1                  | Not Detected   | 7.9                   | Not Detected      |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 111       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 118       | 70-130 |  |



# Client Sample ID: Lab Blank Lab ID#: 0810465-05A

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

| File Name:             | s110206    | Date of Collection: NA             |            |              |
|------------------------|------------|------------------------------------|------------|--------------|
| Dil. Factor:           | 1.00       | Date of Analysis: 11/2/08 01:43 PM |            |              |
|                        | Rpt. Limit | Amount                             | Rpt. Limit | Amount       |
| Compound               | (ppbv)     | (ppbv)                             | (uG/m3)    | (uG/m3)      |
| Freon 12               | 0.10       | Not Detected                       | 0.49       | Not Detected |
| Vinyl Chloride         | 0.10       | Not Detected                       | 0.26       | Not Detected |
| Freon 11               | 0.10       | Not Detected                       | 0.56       | Not Detected |
| Freon 113              | 0.10       | Not Detected                       | 0.77       | Not Detected |
| 1,1-Dichloroethene     | 0.10       | Not Detected                       | 0.40       | Not Detected |
| Acetone                | 0.50       | Not Detected                       | 1.2        | Not Detected |
| Methylene Chloride     | 0.20       | Not Detected                       | 0.69       | Not Detected |
| cis-1,2-Dichloroethene | 0.10       | Not Detected                       | 0.40       | Not Detected |
| 1,1,1-Trichloroethane  | 0.10       | Not Detected                       | 0.54       | Not Detected |
| Benzene                | 0.10       | Not Detected                       | 0.32       | Not Detected |
| Trichloroethene        | 0.10       | Not Detected                       | 0.54       | Not Detected |
| Toluene                | 0.10       | Not Detected                       | 0.38       | Not Detected |
| Tetrachloroethene      | 0.10       | Not Detected                       | 0.68       | Not Detected |
| Chlorobenzene          | 0.10       | Not Detected                       | 0.46       | Not Detected |
| Ethyl Benzene          | 0.10       | Not Detected                       | 0.43       | Not Detected |
| m,p-Xylene             | 0.10       | Not Detected                       | 0.43       | Not Detected |
| o-Xylene               | 0.10       | Not Detected                       | 0.43       | Not Detected |
| 1,3-Dichlorobenzene    | 0.10       | Not Detected                       | 0.60       | Not Detected |
| 1,4-Dichlorobenzene    | 0.10       | Not Detected                       | 0.60       | Not Detected |
| 1,2-Dichlorobenzene    | 0.10       | Not Detected                       | 0.60       | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50       | Not Detected                       | 3.7        | Not Detected |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                            | CAS Number | Match Quality | Amount<br>(ppbv) |
|-------------------------------------|------------|---------------|------------------|
| Freon 123a                          | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene              | 87-61-6    | NA            | Not Detected     |
| Container Type: NA - Not Applicable |            |               |                  |
| Surrogates                          | %Recovery  |               | Method<br>Limits |
| 1,2-Dichloroethane-d4               | 108        |               | 70-130           |
| Toluene-d8                          | 100        |               | 70-130           |
| 4-Bromofluorobenzene                | 121        |               | 70-130           |



**Client Sample ID: CCV** 

Lab ID#: 0810465-06A

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

| File Name: s110202     |  | Date of Collection: NA             |  |
|------------------------|--|------------------------------------|--|
| Dil. Factor: 1.00      |  | Date of Analysis: 11/2/08 09:38 AM |  |
| Compound               |  | %Recovery                          |  |
| Freon 12               |  | 124                                |  |
| Vinyl Chloride         |  | 115                                |  |
| Freon 11               |  | 109                                |  |
| Freon 113              |  | 111                                |  |
| 1,1-Dichloroethene     |  | 100                                |  |
| Acetone                |  | 84                                 |  |
| Methylene Chloride     |  | 102                                |  |
| cis-1,2-Dichloroethene |  | 97                                 |  |
| 1,1,1-Trichloroethane  |  | 102                                |  |
| Benzene                |  | 94                                 |  |
| Trichloroethene        |  | 104                                |  |
| Toluene                |  | 111                                |  |
| Tetrachloroethene      |  | 108                                |  |
| Chlorobenzene          |  | 107                                |  |
| Ethyl Benzene          |  | 109                                |  |
| m,p-Xylene             |  | 109                                |  |
| o-Xylene               |  | 116                                |  |
| 1,3-Dichlorobenzene    |  | 117                                |  |
| 1,4-Dichlorobenzene    |  | 115                                |  |
| 1,2-Dichlorobenzene    |  | 111                                |  |
| 1,2,4-Trichlorobenzene |  | 97                                 |  |

## Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 104       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 106       | 70-130 |  |



Client Sample ID: LCS

Lab ID#: 0810465-07A

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

| File Name: s110203     |  | Date of Collection: NA             |  |
|------------------------|--|------------------------------------|--|
| Dil. Factor: 1.00      |  | Date of Analysis: 11/2/08 10:44 AM |  |
| Compound               |  | %Recovery                          |  |
| Freon 12               |  | 124                                |  |
| Vinyl Chloride         |  | 115                                |  |
| Freon 11               |  | 118                                |  |
| Freon 113              |  | 130                                |  |
| 1,1-Dichloroethene     |  | 126                                |  |
| Acetone                |  | 90                                 |  |
| Methylene Chloride     |  | 116                                |  |
| cis-1,2-Dichloroethene |  | 108                                |  |
| 1,1,1-Trichloroethane  |  | 114                                |  |
| Benzene                |  | 96                                 |  |
| Trichloroethene        |  | 108                                |  |
| Toluene                |  | 115                                |  |
| Tetrachloroethene      |  | 102                                |  |
| Chlorobenzene          |  | 99                                 |  |
| Ethyl Benzene          |  | 101                                |  |
| m,p-Xylene             |  | 100                                |  |
| o-Xylene               |  | 106                                |  |
| 1,3-Dichlorobenzene    |  | 118                                |  |
| 1,4-Dichlorobenzene    |  | 115                                |  |
| 1,2-Dichlorobenzene    |  | 112                                |  |
| 1,2,4-Trichlorobenzene |  | 91                                 |  |

## Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |  |
| Toluene-d8            | 108       | 70-130 |  |
| 4-Bromofluorobenzene  | 113       | 70-130 |  |



11/14/2008 Ms. Claire Lund Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: Project #:

Dear Ms. Claire Lund

The following report includes the data for the above referenced project for sample(s) received on 11/7/2008 at Air Toxics Ltd.

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

Regards,

Bujanna Lanefey

Bryanna Langley Project Manager



# WORK ORDER #: 0811153

Work Order Summary

| CLIENT:         | Ms. Claire Lund            | BILL TO:  | Accounts Payable           |
|-----------------|----------------------------|-----------|----------------------------|
|                 | Sanborn, Head & Associates |           | Sanborn, Head & Associates |
|                 | 20 Foundry Street          |           | 20 Foundry Street          |
|                 | Concord, NH 03301          |           | Concord, NH 03301          |
| PHONE:          | 603-229-1900               | P.O. #    |                            |
| FAX:            | 603-229-1919               | PROJECT # |                            |
| DATE RECEIVED:  | 11/07/2008                 | CONTACT:  | Bryanna Langley            |
| DATE COMPLETED: | 11/12/2008                 |           |                            |

|            |               |                     | RECEIPT    | FINAL           |
|------------|---------------|---------------------|------------|-----------------|
| FRACTION # | <u>NAME</u>   | <u>TEST</u>         | VAC./PRES. | <b>PRESSURE</b> |
| 01A        | Gowning BG-24 | Modified TO-15/TICs | 5.5 "Hg    | 5 psi           |
| 02A        | Punch BE-23   | Modified TO-15/TICs | 6.0 "Hg    | 5 psi           |
| 03A        | Crib 1 BH-23  | Modified TO-15/TICs | 4.5 "Hg    | 5 psi           |
| 04A        | Crib 2 BH-22  | Modified TO-15/TICs | 6.0 "Hg    | 5 psi           |
| 05A        | Lab Blank     | Modified TO-15/TICs | NA         | NA              |
| 06A        | CCV           | Modified TO-15/TICs | NA         | NA              |
| 07A        | LCS           | Modified TO-15/TICs | NA         | NA              |
|            |               |                     |            |                 |

Sinda d. Fruman

DATE: \_\_\_\_\_

Laboratory Director

CERTIFIED BY:

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09

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 Air Toxics Ltd.

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

Page 1 of 12



# LABORATORY NARRATIVE Modified TO-15 Sanborn, Head & Associates Workorder# 0811153

Four 6 Liter Summa Canister (100% Certified) samples were received on November 07, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

| Requirement                   | TO-15  | ATL Modifications   |
|-------------------------------|--|---|
| ICAL %RSD acceptance criteria | +- 30% RSD with 2<br>compounds allowed<br>out to < 40% RSD | 30% RSD with 4 compounds allowed out to < 40% RSD   |
| Daily Calibration             | +- 30% Difference  | = 30% Difference with four allowed out up to </=40%.;<br flag and narrate outliers  |
| Blank and standards           | Zero air   | Nitrogen  |
| Method Detection Limit        | Follow 40CFR Pt.136<br>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 |
| Sample collection media       | Summa canister   | ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request  |

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

# **Receiving Notes**

Sample identification for all samples were not provided on the sample tags. Therefore the information on the Chain of Custody was used to process and report the samples.

# **Analytical Notes**

Specific analytes that are requested by the client to be reported as tentatively identified compounds (TICs) are determined by searching for each compound's characteristic spectra. If no chromatographic peak displaying the compound specific spectra exists, then the TIC is reported as not detected. Please note that the laboratory has not evaluated the stability of any heretofore tentatively identified compound in the vapor phase or for efficiency of recovery through the analytical system.



# **Definition of Data Qualifying Flags**

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

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

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

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

## Client Sample ID: Gowning BG-24

#### Lab ID#: 0811153-01A

| Compound          | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.62             | 0.81                  | 3.1               |
| Freon 11          | 0.16                 | 0.33             | 0.92                  | 1.8               |
| Acetone           | 0.82                 | 7.4              | 1.9                   | 18                |
| Benzene           | 0.16                 | 0.31             | 0.52                  | 1.0               |
| Toluene           | 0.16                 | 0.61             | 0.62                  | 2.3               |
| Tetrachloroethene | 0.16                 | 13               | 1.1                   | 89                |
| m,p-Xylene        | 0.16                 | 0.27             | 0.71                  | 1.2               |

#### **Client Sample ID: Punch BE-23**

#### Lab ID#: 0811153-02A

|                   | Røt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.17       | 0.64   | 0.83       | 3.2     |
| Freon 11          | 0.17       | 0.32   | 0.94       | 1.8     |
| Acetone           | 0.84       | 3.9    | 2.0        | 9.3     |
| Benzene           | 0.17       | 0.29   | 0.54       | 0.93    |
| Toluene           | 0.17       | 0.60   | 0.63       | 2.3     |
| Tetrachloroethene | 0.17       | 5.5    | 1.1        | 38      |
| m,p-Xylene        | 0.17       | 0.21   | 0.73       | 0.92    |

#### Client Sample ID: Crib 1 BH-23

#### Lab ID#: 0811153-03A

| Compound          | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.60             | 0.78                  | 3.0               |
| Freon 11          | 0.16                 | 0.32             | 0.89                  | 1.8               |
| Acetone           | 0.79                 | 4.3              | 1.9                   | 10                |
| Benzene           | 0.16                 | 0.29             | 0.50                  | 0.93              |
| Toluene           | 0.16                 | 0.64             | 0.60                  | 2.4               |
| Tetrachloroethene | 0.16                 | 23               | 1.1                   | 160               |
| m,p-Xylene        | 0.16                 | 0.21             | 0.69                  | 0.90              |

#### Client Sample ID: Crib 2 BH-22

Lab ID#: 0811153-04A



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

## Client Sample ID: Crib 2 BH-22

| Lab | ID#: | 0811153-04A |
|-----|------|-------------|
|-----|------|-------------|

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.17       | 0.61   | 0.83       | 3.0     |
| Freon 11          | 0.17       | 0.32   | 0.94       | 1.8     |
| Acetone           | 0.84       | 3.9    | 2.0        | 9.3     |
| Benzene           | 0.17       | 0.29   | 0.54       | 0.92    |
| Toluene           | 0.17       | 0.60   | 0.63       | 2.2     |
| Tetrachloroethene | 0.17       | 4.7    | 1.1        | 32      |
| m,p-Xylene        | 0.17       | 0.21   | 0.73       | 0.92    |



## Client Sample ID: Gowning BG-24 Lab ID#: 0811153-01A

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

| File Name:             | z111114    | Date of Collection: 11/5/08 |                     |                  |
|------------------------|------------|-----------------------------|---------------------|------------------|
| Dil. Factor:           | 1.64       |                             | Date of Analysis: 1 | 1/11/08 07:57 PM |
|                        | Rpt. Limit | Amount                      | Rpt. Limit          | Amount           |
| Compound               | (ppbv)     | (ppbv)                      | (uG/m3)             | (uG/m3)          |
| Freon 12               | 0.16       | 0.62                        | 0.81                | 3.1              |
| Vinyl Chloride         | 0.16       | Not Detected                | 0.42                | Not Detected     |
| Freon 11               | 0.16       | 0.33                        | 0.92                | 1.8              |
| Freon 113              | 0.16       | Not Detected                | 1.2                 | Not Detected     |
| 1,1-Dichloroethene     | 0.16       | Not Detected                | 0.65                | Not Detected     |
| Acetone                | 0.82       | 7.4                         | 1.9                 | 18               |
| Methylene Chloride     | 0.33       | Not Detected                | 1.1                 | Not Detected     |
| cis-1,2-Dichloroethene | 0.16       | Not Detected                | 0.65                | Not Detected     |
| 1,1,1-Trichloroethane  | 0.16       | Not Detected                | 0.89                | Not Detected     |
| Benzene                | 0.16       | 0.31                        | 0.52                | 1.0              |
| Trichloroethene        | 0.16       | Not Detected                | 0.88                | Not Detected     |
| Toluene                | 0.16       | 0.61                        | 0.62                | 2.3              |
| Tetrachloroethene      | 0.16       | 13                          | 1.1                 | 89               |
| Chlorobenzene          | 0.16       | Not Detected                | 0.76                | Not Detected     |
| Ethyl Benzene          | 0.16       | Not Detected                | 0.71                | Not Detected     |
| m,p-Xylene             | 0.16       | 0.27                        | 0.71                | 1.2              |
| o-Xylene               | 0.16       | Not Detected                | 0.71                | Not Detected     |
| 1,3-Dichlorobenzene    | 0.16       | Not Detected                | 0.99                | Not Detected     |
| 1,4-Dichlorobenzene    | 0.16       | Not Detected                | 0.99                | Not Detected     |
| 1,2-Dichlorobenzene    | 0.16       | Not Detected                | 0.99                | Not Detected     |
| 1,2,4-Trichlorobenzene | 0.82       | Not Detected                | 6.1                 | Not Detected     |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 115       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



## Client Sample ID: Punch BE-23 Lab ID#: 0811153-02A

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

| File Name:<br>Dil. Factor: | z111115<br>1.68      | Date of Collection: 11/5/08<br>Date of Analysis: 11/11/08 08:36 |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                   | 0.17                 | 0.64  | 0.83                  | 3.2               |
| Vinyl Chloride             | 0.17                 | Not Detected  | 0.43                  | Not Detected      |
| Freon 11                   | 0.17                 | 0.32  | 0.94                  | 1.8               |
| Freon 113                  | 0.17                 | Not Detected  | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected  | 0.67                  | Not Detected      |
| Acetone                    | 0.84                 | 3.9   | 2.0                   | 9.3               |
| Methylene Chloride         | 0.34                 | Not Detected  | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected  | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected  | 0.92                  | Not Detected      |
| Benzene                    | 0.17                 | 0.29  | 0.54                  | 0.93              |
| Trichloroethene            | 0.17                 | Not Detected  | 0.90                  | Not Detected      |
| Toluene                    | 0.17                 | 0.60  | 0.63                  | 2.3               |
| Tetrachloroethene          | 0.17                 | 5.5   | 1.1                   | 38                |
| Chlorobenzene              | 0.17                 | Not Detected  | 0.77                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected  | 0.73                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | 0.21  | 0.73                  | 0.92              |
| o-Xylene                   | 0.17                 | Not Detected  | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected  | 6.2                   | Not Detected      |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 114       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



## Client Sample ID: Crib 1 BH-23 Lab ID#: 0811153-03A

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

| File Name:<br>Dil. Factor: | z111112<br>1.58      | Date of Collection: 11/5/08<br>Date of Analysis: 11/11/08 06:08 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12                   | 0.16                 | 0.60   | 0.78                  | 3.0               |
| Vinyl Chloride             | 0.16                 | Not Detected   | 0.40                  | Not Detected      |
| Freon 11                   | 0.16                 | 0.32   | 0.89                  | 1.8               |
| Freon 113                  | 0.16                 | Not Detected   | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected   | 0.63                  | Not Detected      |
| Acetone                    | 0.79                 | 4.3  | 1.9                   | 10                |
| Methylene Chloride         | 0.32                 | Not Detected   | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected   | 0.63                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected   | 0.86                  | Not Detected      |
| Benzene                    | 0.16                 | 0.29   | 0.50                  | 0.93              |
| Trichloroethene            | 0.16                 | Not Detected   | 0.85                  | Not Detected      |
| Toluene                    | 0.16                 | 0.64   | 0.60                  | 2.4               |
| Tetrachloroethene          | 0.16                 | 23   | 1.1                   | 160               |
| Chlorobenzene              | 0.16                 | Not Detected   | 0.73                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected   | 0.69                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | 0.21   | 0.69                  | 0.90              |
| o-Xylene                   | 0.16                 | Not Detected   | 0.69                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected   | 0.95                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected   | 0.95                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected   | 0.95                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.79                 | Not Detected   | 5.9                   | Not Detected      |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       | ·····,    | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



## Client Sample ID: Crib 2 BH-22 Lab ID#: 0811153-04A

#### Lau 1D#: 0011155-04A

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

| File Name:             | z111113              |                  | Date of Collection:   | 11/5/08           |
|------------------------|----------------------|------------------|-----------------------|-------------------|
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3) |
| Freon 12               | 0.17                 | 0.61             | 0.83                  | 3.0               |
| Vinyl Chloride         | 0.17                 | Not Detected     | 0.43                  | Not Detected      |
| Freon 11               | 0.17                 | 0.32             | 0.94                  | 1.8               |
| Freon 113              | 0.17                 | Not Detected     | 1.3                   | Not Detected      |
| 1,1-Dichloroethene     | 0.17                 | Not Detected     | 0.67                  | Not Detected      |
| Acetone                | 0.84                 | 3.9              | 2.0                   | 9.3               |
| Methylene Chloride     | 0.34                 | Not Detected     | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.17                 | Not Detected     | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.17                 | Not Detected     | 0.92                  | Not Detected      |
| Benzene                | 0.17                 | 0.29             | 0.54                  | 0.92              |
| Trichloroethene        | 0.17                 | Not Detected     | 0.90                  | Not Detected      |
| Toluene                | 0.17                 | 0.60             | 0.63                  | 2.2               |
| Tetrachloroethene      | 0.17                 | 4.7              | 1.1                   | 32                |
| Chlorobenzene          | 0.17                 | Not Detected     | 0.77                  | Not Detected      |
| Ethyl Benzene          | 0.17                 | Not Detected     | 0.73                  | Not Detected      |
| m,p-Xylene             | 0.17                 | 0.21             | 0.73                  | 0.92              |
| o-Xylene               | 0.17                 | Not Detected     | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.17                 | Not Detected     | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene    | 0.17                 | Not Detected     | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene    | 0.17                 | Not Detected     | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.84                 | Not Detected     | 6.2                   | Not Detected      |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 115       | 70-130 |
| Toluene-d8            | 97        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: Lab Blank Lab ID#: 0811153-05A

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

| File Name:             | z111105    | Date of Collection: NA              |            |              |  |
|------------------------|------------|-------------------------------------|------------|--------------|--|
| Dil. Factor:           | 1.00       | Date of Analysis: 11/11/08 01:04 PM |            |              |  |
|                        | Rpt. Limit | Amount                              | Rpt. Limit | Amount       |  |
| Compound               | (ppbv)     | (ppbv)                              | (uG/m3)    | (uG/m3)      |  |
| Freon 12               | 0.10       | Not Detected                        | 0.49       | Not Detected |  |
| Vinyl Chloride         | 0.10       | Not Detected                        | 0.26       | Not Detected |  |
| Freon 11               | 0.10       | Not Detected                        | 0.56       | Not Detected |  |
| Freon 113              | 0.10       | Not Detected                        | 0.77       | Not Detected |  |
| 1,1-Dichloroethene     | 0.10       | Not Detected                        | 0.40       | Not Detected |  |
| Acetone                | 0.50       | Not Detected                        | 1.2        | Not Detected |  |
| Methylene Chloride     | 0.20       | Not Detected                        | 0.69       | Not Detected |  |
| cis-1,2-Dichloroethene | 0.10       | Not Detected                        | 0.40       | Not Detected |  |
| 1,1,1-Trichloroethane  | 0.10       | Not Detected                        | 0.54       | Not Detected |  |
| Benzene                | 0.10       | Not Detected                        | 0.32       | Not Detected |  |
| Trichloroethene        | 0.10       | Not Detected                        | 0.54       | Not Detected |  |
| Toluene                | 0.10       | Not Detected                        | 0.38       | Not Detected |  |
| Tetrachloroethene      | 0.10       | Not Detected                        | 0.68       | Not Detected |  |
| Chlorobenzene          | 0.10       | Not Detected                        | 0.46       | Not Detected |  |
| Ethyl Benzene          | 0.10       | Not Detected                        | 0.43       | Not Detected |  |
| m,p-Xylene             | 0.10       | Not Detected                        | 0.43       | Not Detected |  |
| o-Xylene               | 0.10       | Not Detected                        | 0.43       | Not Detected |  |
| 1,3-Dichlorobenzene    | 0.10       | Not Detected                        | 0.60       | Not Detected |  |
| 1,4-Dichlorobenzene    | 0.10       | Not Detected                        | 0.60       | Not Detected |  |
| 1,2-Dichlorobenzene    | 0.10       | Not Detected                        | 0.60       | Not Detected |  |
| 1,2,4-Trichlorobenzene | 0.50       | Not Detected                        | 3.7        | Not Detected |  |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                            | CAS Number | Match Quality | Amount<br>(ppbv) |
|-------------------------------------|------------|---------------|------------------|
| Freon 123a                          | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene              | 87-61-6    | NA            | Not Detected     |
| Container Type: NA - Not Applicable |            |               |                  |
| Surrogates                          | %Recovery  |               | Method<br>Limits |
| 1,2-Dichloroethane-d4               | 108        |               | 70-130           |
| Toluene-d8                          | 100        |               | 70-130           |
| 4-Bromofluorobenzene                | 93         |               | 70-130           |



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AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: CCV** 

Lab ID#: 0811153-06A

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

| File Name:             | z111102 | Date of Collection: NA              |
|------------------------|---------|-------------------------------------|
| Dil. Factor: 1.00      |         | Date of Analysis: 11/11/08 10:16 AM |
| Compound               |         | %Recovery                           |
| Freon 12               |         | 92                                  |
| Vinyl Chloride         |         | 94                                  |
| Freon 11               |         | 89                                  |
| Freon 113              |         | 82                                  |
| 1,1-Dichloroethene     |         | 83                                  |
| Acetone                |         | 89                                  |
| Methylene Chloride     |         | 80                                  |
| cis-1,2-Dichloroethene |         | 84                                  |
| 1,1,1-Trichloroethane  |         | 82                                  |
| Benzene                |         | 84                                  |
| Trichloroethene        |         | 83                                  |
| Toluene                |         | 83                                  |
| Tetrachloroethene      |         | 84                                  |
| Chlorobenzene          |         | 89                                  |
| Ethyl Benzene          |         | 88                                  |
| m,p-Xylene             |         | 88                                  |
| o-Xylene               |         | 89                                  |
| 1,3-Dichlorobenzene    |         | 83                                  |
| 1,4-Dichlorobenzene    |         | 85                                  |
| 1,2-Dichlorobenzene    |         | 84                                  |
| 1,2,4-Trichlorobenzene |         | 80                                  |

## Container Type: NA - Not Applicable

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 104       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



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AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: LCS** 

Lab ID#: 0811153-07A

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

| File Name:             | z111103 | Date of Collection: NA              |
|------------------------|---------|-------------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 11/11/08 11:17 AM |
| Compound               |         | %Recovery                           |
| Freon 12               |         | 90                                  |
| Vinyl Chloride         |         | 90                                  |
| Freon 11               |         | 89                                  |
| Freon 113              |         | 91                                  |
| 1,1-Dichloroethene     |         | 95                                  |
| Acetone                |         | 97                                  |
| Methylene Chloride     |         | 87                                  |
| cis-1,2-Dichloroethene |         | 86                                  |
| 1,1,1-Trichloroethane  |         | 85                                  |
| Benzene                |         | 87                                  |
| Trichloroethene        |         | 86                                  |
| Toluene                |         | 89                                  |
| Tetrachloroethene      |         | 88                                  |
| Chlorobenzene          |         | 92                                  |
| Ethyl Benzene          |         | 88                                  |
| m,p-Xylene             |         | 89                                  |
| o-Xylene               |         | 91                                  |
| 1,3-Dichlorobenzene    |         | 85                                  |
| 1,4-Dichlorobenzene    |         | 86                                  |
| 1,2-Dichlorobenzene    |         | 85                                  |
| 1,2,4-Trichlorobenzene |         | 86                                  |

## Container Type: NA - Not Applicable

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



#### Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable loca, State. Federal, national, and international laws, regulations and ordinances of any kind. All Toxlos Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold hamiless, dofond, and indemnify Air Toxlos 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 \_\_\_\_ of \_\_\_\_

| Project Manager Dave Speed                   |                     |                    | Project Info  | );            | ·          | Turn Aroun         | d ೭೩೫ ೧೯೯    | Only                    |       |
|--|---------------------|--------------------|---------------|---------------|------------|--------------------|--------------|-------------------------|-------|
| Collected by: (Print and Sign) deff Stringer |                     |                    | PO #          |               |            | Time:              | Press        | urized by               | :     |
| Company IBM E FishKill Email SP              | <u>)EEDQUS</u>      | BM.COM             | F.Q. #        | <u>.</u> .    |            | শ্দ্রাNormal<br>১৮ | Date:        |                         |       |
| Address 2070 Rt 52 City Hopewell do          | ⊢State Ν <u>Υ</u> ∶ | Zip <u>12533</u>   | Project #     |               |            | A Rush             | Press        | urization               | Gas:  |
| Phone 345-894-4318 Fax 845-8                 | i92- <u>462</u>     | 7                  | Project Name  |               |            | specify<br>THTAIO2 | ŀ            | N <sub>2</sub> H        | e     |
|  |                     | Date               | Time          |               |            | Can                | ister Pres   | sure/Vac                | uum   |
| Lab I.D. Field Sample I.D. (Location)        | Can #               | of Collection      | of Collection | Analyses      | Requested  | Iniția             | Final        | Receipt                 | Final |
| DIA Gowning BG-24                            | 5643                | 11/5/08            | 8 hrs         | TO-15         | LL /21     | VOC -30,1          | -7.8         | · · ·                   | · · . |
| .02A Punch & BE-23                           | 4183                | 11/5/08            | 8 hms         | [             | <u>(-</u>  | -30.0              | -68          |                         | · . · |
| 034 Crib 1 BH-23                             | 3460                | 11/5/08            | 8 hrs         |               |            | -28                | -2.5         | · .                     |       |
| MA Crib 2 BH-22                              | 2155                | 11/5/08            | 8 hrs         |               | /          | -33                | -8.0         |                         | · ·   |
|  |                     |                    |               |               |            |                    |              | · · · ·                 |       |
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| Structer 11/06/08                            | _ [[ + kQm          | uca E              | <u>NODIM-</u> | ATT. "Holdel" | 15         |                    |              |                         |       |
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| Lab Shipper Name Air Bill #                  | ¥                   | - Temp (N          | C) C          | ondition      | Custody Se | als Intact?        | Work (       | Dider #                 | ·     |
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|  |                     |                    |               |               |            |                    | <b>U 8</b> 3 | 110                     | 5     |



12/3/2008 Ms. Claire Lund Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: Project #:

Dear Ms. Claire Lund

The following report includes the data for the above referenced project for sample(s) received on 11/24/2008 at Air Toxics Ltd.

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

Regards,

Bujanna Lanefey

Bryanna Langley Project Manager



# WORK ORDER #: 0811527

Work Order Summary

| CLIENT:         | Ms. Claire Lund            | BILL TO:         | Accounts Payable           |
|-----------------|----------------------------|------------------|----------------------------|
|                 | Sanborn, Head & Associates |                  | Sanborn, Head & Associates |
|                 | 20 Foundry Street          |                  | 20 Foundry Street          |
|                 | Concord, NH 03301          |                  | Concord, NH 03301          |
| PHONE:          | 603-229-1900               | <b>P.O.</b> #    |                            |
| FAX:            | 603-229-1919               | <b>PROJECT</b> # |                            |
| DATE RECEIVED:  | 11/24/2008                 | CONTACT          | Bryanna Langley            |
| DATE COMPLETED: | 12/03/2008                 | contact.         | Di yumu Lungicy            |

|            |                            |                     | RECEIPT    | FINAL           |
|------------|----------------------------|---------------------|------------|-----------------|
| FRACTION # | NAME                       | <u>TEST</u>         | VAC./PRES. | <b>PRESSURE</b> |
| 01A        | Gowning BG-24              | Modified TO-15/TICs | 6.5 "Hg    | 5 psi           |
| 02A        | Punch BE-23                | Modified TO-15/TICs | 6.0 "Hg    | 5 psi           |
| 03A        | CRIB 1 BH-23               | Modified TO-15/TICs | 6.5 "Hg    | 5 psi           |
| 03AA       | CRIB 1 BH-23 Lab Duplicate | Modified TO-15/TICs | 6.5 "Hg    | 5 psi           |
| 04A        | CRIB 2 BH-22               | Modified TO-15/TICs | 6.0 "Hg    | 5 psi           |
| 05A        | Lab Blank                  | Modified TO-15/TICs | NA         | NA              |
| 06A        | CCV                        | Modified TO-15/TICs | NA         | NA              |
| 07A        | LCS                        | Modified TO-15/TICs | NA         | NA              |

Sinda d. Fruman

DATE: \_\_\_\_\_

Laboratory Director

CERTIFIED BY:

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004 NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719

Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/08, Expiration date: 06/30/09

Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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Page 1 of 13



# LABORATORY NARRATIVE Modified TO-15 Sanborn, Head & Associates Workorder# 0811527

Four 6 Liter Summa Canister (100% Certified) samples were received on November 24, 2008. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 1.0 liter of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

| Requirement                   | TO-15  | ATL Modifications  |
|-------------------------------|--|--|
| ICAL %RSD acceptance criteria | +- 30% RSD with 2<br>compounds allowed<br>out to < 40% RSD | 30% RSD with 4 compounds allowed out to < 40% RSD  |
| Daily Calibration             | +- 30% Difference  | = 30% Difference with four allowed out up to </=40%.;<br flag and narrate outliers   |
| Blank and standards           | Zero air   | Nitrogen   |
| Method Detection Limit        | Follow 40CFR Pt.136<br>App. B                              | The MDL met all relevant requirements in Method TO-15<br>(statistical MDL less than the LOQ). The concentration of<br>the spiked replicate may have exceeded 10X the calculated<br>MDL in some cases |
| Sample collection media       | Summa canister   | ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request   |

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

# **Receiving Notes**

Sample identification for all samples were not provided on the sample tags. Therefore the information on the Chain of Custody was used to process and report the samples.

# **Analytical Notes**

Specific analytes that are requested by the client to be reported as tentatively identified compounds (TICs) are determined by searching for each compound's characteristic spectra. If no chromatographic peak displaying the compound specific spectra exists, then the TIC is reported as not detected. Please note that the laboratory has not evaluated the stability of any heretofore tentatively identified compound in the vapor phase or for efficiency of recovery through the analytical system.



# **Definition of Data Qualifying Flags**

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

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

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

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

#### Client Sample ID: Gowning BG-24

#### Lab ID#: 0811527-01A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.17       | 0.66   | 0.84       | 3.3     |
| Freon 11          | 0.17       | 0.38   | 0.96       | 2.1     |
| Acetone           | 0.86       | 2.0    | 2.0        | 4.7     |
| Benzene           | 0.17       | 0.22   | 0.55       | 0.71    |
| Toluene           | 0.17       | 0.96   | 0.64       | 3.6     |
| Tetrachloroethene | 0.17       | 1.8    | 1.2        | 12      |

#### **Client Sample ID: Punch BE-23**

#### Lab ID#: 0811527-02A

| Compound          | Rpt. Limit | Amount | Rpt. Limit | Amount    |
|-------------------|------------|--------|------------|-----------|
| compound          | (ppp*)     | (pppv) | (uo/mo)    | (uo/iiio) |
| Freon 12          | 0.17       | 0.64   | 0.83       | 3.2       |
| Freon 11          | 0.17       | 0.36   | 0.94       | 2.0       |
| Acetone           | 0.84       | 3.9    | 2.0        | 9.3       |
| Benzene           | 0.17       | 0.21   | 0.54       | 0.66      |
| Toluene           | 0.17       | 0.93   | 0.63       | 3.5       |
| Tetrachloroethene | 0.17       | 1.4    | 1.1        | 9.8       |
| Ethyl Benzene     | 0.17       | 0.22   | 0.73       | 0.95      |
| m,p-Xylene        | 0.17       | 0.84   | 0.73       | 3.6       |
| o-Xylene          | 0.17       | 0.36   | 0.73       | 1.6       |

## Client Sample ID: CRIB 1 BH-23

#### Lab ID#: 0811527-03A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.17       | 0.68   | 0.84       | 3.3     |
| Freon 11          | 0.17       | 0.37   | 0.96       | 2.0     |
| Acetone           | 0.86       | 2.4    | 2.0        | 5.7     |
| Benzene           | 0.17       | 0.25   | 0.55       | 0.79    |
| Toluene           | 0.17       | 1.0    | 0.64       | 3.8     |
| Tetrachloroethene | 0.17       | 3.6    | 1.2        | 24      |

#### Client Sample ID: CRIB 1 BH-23 Lab Duplicate

## Lab ID#: 0811527-03AA



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

# Client Sample ID: CRIB 1 BH-23 Lab Duplicate

| Lab | ID#: | 0811527-03AA |  |
|-----|------|--------------|--|
|     |      |              |  |

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.17       | 0.74   | 0.84       | 3.7     |
| Freon 11          | 0.17       | 0.42   | 0.96       | 2.3     |
| Acetone           | 0.86       | 2.6    | 2.0        | 6.1     |
| Benzene           | 0.17       | 0.22   | 0.55       | 0.72    |
| Toluene           | 0.17       | 0.98   | 0.64       | 3.7     |
| Tetrachloroethene | 0.17       | 3.9    | 1.2        | 26      |

## Client Sample ID: CRIB 2 BH-22

#### Lab ID#: 0811527-04A

|                   | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|-------------------|------------|--------|------------|---------|
| Compound          | (ppbv)     | (ppbv) | (uG/m3)    | (uG/m3) |
| Freon 12          | 0.17       | 0.65   | 0.83       | 3.2     |
| Freon 11          | 0.17       | 0.38   | 0.94       | 2.2     |
| Acetone           | 0.84       | 2.4    | 2.0        | 5.8     |
| Benzene           | 0.17       | 0.22   | 0.54       | 0.72    |
| Toluene           | 0.17       | 1.0    | 0.63       | 3.9     |
| Tetrachloroethene | 0.17       | 1.4    | 1.1        | 9.8     |



# Client Sample ID: Gowning BG-24

# Lab ID#: 0811527-01A

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

| File Name:<br>Dil. Factor: | z112513<br>1 71      |                  | Date of Collection:   | 11/20/08<br>1/25/08 05:35 PM |
|----------------------------|----------------------|------------------|-----------------------|------------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3)            |
| Freon 12                   | 0.17                 | 0.66             | 0.84                  | 3.3                          |
| Vinyl Chloride             | 0.17                 | Not Detected     | 0.44                  | Not Detected                 |
| Freon 11                   | 0.17                 | 0.38             | 0.96                  | 2.1                          |
| Freon 113                  | 0.17                 | Not Detected     | 1.3                   | Not Detected                 |
| 1,1-Dichloroethene         | 0.17                 | Not Detected     | 0.68                  | Not Detected                 |
| Acetone                    | 0.86                 | 2.0              | 2.0                   | 4.7                          |
| Methylene Chloride         | 0.34                 | Not Detected     | 1.2                   | Not Detected                 |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected     | 0.68                  | Not Detected                 |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected     | 0.93                  | Not Detected                 |
| Benzene                    | 0.17                 | 0.22             | 0.55                  | 0.71                         |
| Trichloroethene            | 0.17                 | Not Detected     | 0.92                  | Not Detected                 |
| Toluene                    | 0.17                 | 0.96             | 0.64                  | 3.6                          |
| Tetrachloroethene          | 0.17                 | 1.8              | 1.2                   | 12                           |
| Chlorobenzene              | 0.17                 | Not Detected     | 0.79                  | Not Detected                 |
| Ethyl Benzene              | 0.17                 | Not Detected     | 0.74                  | Not Detected                 |
| m,p-Xylene                 | 0.17                 | Not Detected     | 0.74                  | Not Detected                 |
| o-Xylene                   | 0.17                 | Not Detected     | 0.74                  | Not Detected                 |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0                   | Not Detected                 |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0                   | Not Detected                 |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0                   | Not Detected                 |
| 1,2,4-Trichlorobenzene     | 0.86                 | Not Detected     | 6.3                   | Not Detected                 |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 118       | 70-130 |
| Toluene-d8            | 97        | 70-130 |
| 4-Bromofluorobenzene  | 102       | 70-130 |



## Client Sample ID: Punch BE-23 Lab ID#: 0811527-02A

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

| File Name:<br>Dil. Factor: | z112514<br>1.68      | Date of Collection: 11/20/08<br>Date of Analysis: 11/25/08 06:14 P |                       | 11/20/08<br>1/25/08 06:14 PM |
|----------------------------|----------------------|--|-----------------------|------------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3)            |
| Freon 12                   | 0.17                 | 0.64   | 0.83                  | 3.2                          |
| Vinyl Chloride             | 0.17                 | Not Detected   | 0.43                  | Not Detected                 |
| Freon 11                   | 0.17                 | 0.36   | 0.94                  | 2.0                          |
| Freon 113                  | 0.17                 | Not Detected   | 1.3                   | Not Detected                 |
| 1,1-Dichloroethene         | 0.17                 | Not Detected   | 0.67                  | Not Detected                 |
| Acetone                    | 0.84                 | 3.9  | 2.0                   | 9.3                          |
| Methylene Chloride         | 0.34                 | Not Detected   | 1.2                   | Not Detected                 |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected   | 0.67                  | Not Detected                 |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected   | 0.92                  | Not Detected                 |
| Benzene                    | 0.17                 | 0.21   | 0.54                  | 0.66                         |
| Trichloroethene            | 0.17                 | Not Detected   | 0.90                  | Not Detected                 |
| Toluene                    | 0.17                 | 0.93   | 0.63                  | 3.5                          |
| Tetrachloroethene          | 0.17                 | 1.4  | 1.1                   | 9.8                          |
| Chlorobenzene              | 0.17                 | Not Detected   | 0.77                  | Not Detected                 |
| Ethyl Benzene              | 0.17                 | 0.22   | 0.73                  | 0.95                         |
| m,p-Xylene                 | 0.17                 | 0.84   | 0.73                  | 3.6                          |
| o-Xylene                   | 0.17                 | 0.36   | 0.73                  | 1.6                          |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected   | 1.0                   | Not Detected                 |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected   | 1.0                   | Not Detected                 |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected   | 1.0                   | Not Detected                 |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected   | 6.2                   | Not Detected                 |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 98        | 70-130 |
| 4-Bromofluorobenzene  | 102       | 70-130 |



## Client Sample ID: CRIB 1 BH-23 Lab ID#: 0811527-03A

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

| File Name:<br>Dil. Factor: | z112515<br>1.71      | Date of Collection: 11/20/08<br>Date of Analysis: 11/25/08 06:49 PM |                       | 11/20/08<br>1/25/08 06:49 PM |
|----------------------------|----------------------|---|-----------------------|------------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(uG/m3) | Amount<br>(uG/m3)            |
| Freon 12                   | 0.17                 | 0.68  | 0.84                  | 3.3                          |
| Vinyl Chloride             | 0.17                 | Not Detected  | 0.44                  | Not Detected                 |
| Freon 11                   | 0.17                 | 0.37  | 0.96                  | 2.0                          |
| Freon 113                  | 0.17                 | Not Detected  | 1.3                   | Not Detected                 |
| 1,1-Dichloroethene         | 0.17                 | Not Detected  | 0.68                  | Not Detected                 |
| Acetone                    | 0.86                 | 2.4   | 2.0                   | 5.7                          |
| Methylene Chloride         | 0.34                 | Not Detected  | 1.2                   | Not Detected                 |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected  | 0.68                  | Not Detected                 |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected  | 0.93                  | Not Detected                 |
| Benzene                    | 0.17                 | 0.25  | 0.55                  | 0.79                         |
| Trichloroethene            | 0.17                 | Not Detected  | 0.92                  | Not Detected                 |
| Toluene                    | 0.17                 | 1.0   | 0.64                  | 3.8                          |
| Tetrachloroethene          | 0.17                 | 3.6   | 1.2                   | 24                           |
| Chlorobenzene              | 0.17                 | Not Detected  | 0.79                  | Not Detected                 |
| Ethyl Benzene              | 0.17                 | Not Detected  | 0.74                  | Not Detected                 |
| m,p-Xylene                 | 0.17                 | Not Detected  | 0.74                  | Not Detected                 |
| o-Xylene                   | 0.17                 | Not Detected  | 0.74                  | Not Detected                 |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected                 |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected                 |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected                 |
| 1,2,4-Trichlorobenzene     | 0.86                 | Not Detected  | 6.3                   | Not Detected                 |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method<br>Limits |
|-----------------------|-----------|------------------|
| Surrogates            | %Recovery |                  |
| 1,2-Dichloroethane-d4 | 118       | 70-130           |
| Toluene-d8            | 98        | 70-130           |
| 4-Bromofluorobenzene  | 98        | 70-130           |


### Client Sample ID: CRIB 1 BH-23 Lab Duplicate

Lab ID#: 0811527-03AA

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

| File Name:<br>Dil. Factor: | z112517<br>1.71      |                  | Date of Collection:<br>Date of Analysis: 1 | 11/20/08<br>1/25/08 08:30 PM |
|----------------------------|----------------------|------------------|--|------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                      | Amount<br>(uG/m3)            |
| Freon 12                   | 0.17                 | 0.74             | 0.84                                       | 3.7                          |
| Vinyl Chloride             | 0.17                 | Not Detected     | 0.44                                       | Not Detected                 |
| Freon 11                   | 0.17                 | 0.42             | 0.96                                       | 2.3                          |
| Freon 113                  | 0.17                 | Not Detected     | 1.3  | Not Detected                 |
| 1,1-Dichloroethene         | 0.17                 | Not Detected     | 0.68                                       | Not Detected                 |
| Acetone                    | 0.86                 | 2.6              | 2.0  | 6.1                          |
| Methylene Chloride         | 0.34                 | Not Detected     | 1.2  | Not Detected                 |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected     | 0.68                                       | Not Detected                 |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected     | 0.93                                       | Not Detected                 |
| Benzene                    | 0.17                 | 0.22             | 0.55                                       | 0.72                         |
| Trichloroethene            | 0.17                 | Not Detected     | 0.92                                       | Not Detected                 |
| Toluene                    | 0.17                 | 0.98             | 0.64                                       | 3.7                          |
| Tetrachloroethene          | 0.17                 | 3.9              | 1.2  | 26                           |
| Chlorobenzene              | 0.17                 | Not Detected     | 0.79                                       | Not Detected                 |
| Ethyl Benzene              | 0.17                 | Not Detected     | 0.74                                       | Not Detected                 |
| m,p-Xylene                 | 0.17                 | Not Detected     | 0.74                                       | Not Detected                 |
| o-Xylene                   | 0.17                 | Not Detected     | 0.74                                       | Not Detected                 |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0  | Not Detected                 |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0  | Not Detected                 |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0  | Not Detected                 |
| 1,2,4-Trichlorobenzene     | 0.86                 | Not Detected     | 6.3  | Not Detected                 |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 120       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 101       | 70-130 |  |



#### Client Sample ID: CRIB 2 BH-22 Lab ID#: 0811527-04A

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

| File Name:<br>Dil. Factor: | z112516<br>1.68      |                  | Date of Collection:<br>Date of Analysis: 1 | 11/20/08<br>1/25/08 07:23 PM |
|----------------------------|----------------------|------------------|--|------------------------------|
| Compound                   | Rɒt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                      | Amount<br>(uG/m3)            |
| Freon 12                   | 0.17                 | 0.65             | 0.83                                       | 3.2                          |
| Vinyl Chloride             | 0.17                 | Not Detected     | 0.43                                       | Not Detected                 |
| Freon 11                   | 0.17                 | 0.38             | 0.94                                       | 2.2                          |
| Freon 113                  | 0.17                 | Not Detected     | 1.3  | Not Detected                 |
| 1,1-Dichloroethene         | 0.17                 | Not Detected     | 0.67                                       | Not Detected                 |
| Acetone                    | 0.84                 | 2.4              | 2.0  | 5.8                          |
| Methylene Chloride         | 0.34                 | Not Detected     | 1.2  | Not Detected                 |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected     | 0.67                                       | Not Detected                 |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected     | 0.92                                       | Not Detected                 |
| Benzene                    | 0.17                 | 0.22             | 0.54                                       | 0.72                         |
| Trichloroethene            | 0.17                 | Not Detected     | 0.90                                       | Not Detected                 |
| Toluene                    | 0.17                 | 1.0              | 0.63                                       | 3.9                          |
| Tetrachloroethene          | 0.17                 | 1.4              | 1.1  | 9.8                          |
| Chlorobenzene              | 0.17                 | Not Detected     | 0.77                                       | Not Detected                 |
| Ethyl Benzene              | 0.17                 | Not Detected     | 0.73                                       | Not Detected                 |
| m,p-Xylene                 | 0.17                 | Not Detected     | 0.73                                       | Not Detected                 |
| o-Xylene                   | 0.17                 | Not Detected     | 0.73                                       | Not Detected                 |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0  | Not Detected                 |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0  | Not Detected                 |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected     | 1.0  | Not Detected                 |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected     | 6.2  | Not Detected                 |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound               | CAS Number | Match Quality | Amount<br>(ppbv) |
|------------------------|------------|---------------|------------------|
| Freon 123a             | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene | 87-61-6    | NA            | Not Detected     |

|                       | ,         | Method<br>Limits |
|-----------------------|-----------|------------------|
| Surrogates            | %Recovery |                  |
| 1,2-Dichloroethane-d4 | 118       | 70-130           |
| Toluene-d8            | 95        | 70-130           |
| 4-Bromofluorobenzene  | 100       | 70-130           |



# Client Sample ID: Lab Blank

## Lab ID#: 0811527-05A

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

| File Name:<br>Dil. Factor: | z112508<br>1.00      |                  | Date of Collection: N<br>Date of Analysis: 11 | A<br>/25/08 02:23 PM |
|----------------------------|----------------------|------------------|---|----------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(uG/m3)                         | Amount<br>(uG/m3)    |
| Freon 12                   | 0.10                 | Not Detected     | 0.49  | Not Detected         |
| Vinyl Chloride             | 0.10                 | Not Detected     | 0.26  | Not Detected         |
| Freon 11                   | 0.10                 | Not Detected     | 0.56  | Not Detected         |
| Freon 113                  | 0.10                 | Not Detected     | 0.77  | Not Detected         |
| 1,1-Dichloroethene         | 0.10                 | Not Detected     | 0.40  | Not Detected         |
| Acetone                    | 0.50                 | Not Detected     | 1.2   | Not Detected         |
| Methylene Chloride         | 0.20                 | Not Detected     | 0.69  | Not Detected         |
| cis-1,2-Dichloroethene     | 0.10                 | Not Detected     | 0.40  | Not Detected         |
| 1,1,1-Trichloroethane      | 0.10                 | Not Detected     | 0.54  | Not Detected         |
| Benzene                    | 0.10                 | Not Detected     | 0.32  | Not Detected         |
| Trichloroethene            | 0.10                 | Not Detected     | 0.54  | Not Detected         |
| Toluene                    | 0.10                 | Not Detected     | 0.38  | Not Detected         |
| Tetrachloroethene          | 0.10                 | Not Detected     | 0.68  | Not Detected         |
| Chlorobenzene              | 0.10                 | Not Detected     | 0.46  | Not Detected         |
| Ethyl Benzene              | 0.10                 | Not Detected     | 0.43  | Not Detected         |
| m,p-Xylene                 | 0.10                 | Not Detected     | 0.43  | Not Detected         |
| o-Xylene                   | 0.10                 | Not Detected     | 0.43  | Not Detected         |
| 1,3-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60  | Not Detected         |
| 1,4-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60  | Not Detected         |
| 1,2-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60  | Not Detected         |
| 1,2,4-Trichlorobenzene     | 0.50                 | Not Detected     | 3.7   | Not Detected         |

#### TENTATIVELY IDENTIFIED COMPOUNDS

| Compound                            | CAS Number | Match Quality | Amount<br>(ppbv) |
|-------------------------------------|------------|---------------|------------------|
| Freon 123a                          | 354-23-4   | NA            | Not Detected     |
| 1,2,3-Trichlorobenzene              | 87-61-6    | NA            | Not Detected     |
| Container Type: NA - Not Applicable |            |               |                  |
| Surrogates                          | %Recovery  |               | Method<br>Limits |
| 1,2-Dichloroethane-d4               | 118        |               | 70-130           |
| Toluene-d8                          | 100        |               | 70-130           |
| 4-Bromofluorobenzene                | 102        |               | 70-130           |



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AN ENVIRONMENTAL ANALYTICAL LABORATORY

**Client Sample ID: CCV** 

Lab ID#: 0811527-06A

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

| File Name:             | z112502 | Date of Collection: NA              |
|------------------------|---------|-------------------------------------|
| Dil. Factor: 1.00      |         | Date of Analysis: 11/25/08 09:34 AM |
| Compound               |         | %Recovery                           |
| Freon 12               |         | 123                                 |
| Vinyl Chloride         |         | 124                                 |
| Freon 11               |         | 119                                 |
| Freon 113              |         | 101                                 |
| 1,1-Dichloroethene     |         | 113                                 |
| Acetone                |         | 109                                 |
| Methylene Chloride     |         | 100                                 |
| cis-1,2-Dichloroethene |         | 108                                 |
| 1,1,1-Trichloroethane  |         | 110                                 |
| Benzene                |         | 110                                 |
| Trichloroethene        |         | 107                                 |
| Toluene                |         | 113                                 |
| Tetrachloroethene      |         | 101                                 |
| Chlorobenzene          |         | 105                                 |
| Ethyl Benzene          |         | 113                                 |
| m,p-Xylene             |         | 114                                 |
| o-Xylene               |         | 116                                 |
| 1,3-Dichlorobenzene    |         | 106                                 |
| 1,4-Dichlorobenzene    |         | 104                                 |
| 1,2-Dichlorobenzene    |         | 105                                 |
| 1,2,4-Trichlorobenzene |         | 90                                  |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 115       | 70-130 |
| Toluene-d8            | 105       | 70-130 |
| 4-Bromofluorobenzene  | 104       | 70-130 |



**Client Sample ID: LCS** 

Lab ID#: 0811527-07A

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

| File Name:             | z112505 | Date of Collection: NA              |  |
|------------------------|---------|-------------------------------------|--|
| Dil. Factor: 1.00      |         | Date of Analysis: 11/25/08 11:55 AM |  |
| Compound               |         | %Recovery                           |  |
| Freon 12               |         | 95                                  |  |
| Vinyl Chloride         |         | 99                                  |  |
| Freon 11               |         | 100                                 |  |
| Freon 113              |         | 103                                 |  |
| 1,1-Dichloroethene     |         | 115                                 |  |
| Acetone                |         | 104                                 |  |
| Methylene Chloride     |         | 96                                  |  |
| cis-1,2-Dichloroethene |         | 104                                 |  |
| 1,1,1-Trichloroethane  |         | 99                                  |  |
| Benzene                |         | 101                                 |  |
| Trichloroethene        |         | 96                                  |  |
| Toluene                |         | 108                                 |  |
| Tetrachloroethene      |         | 96                                  |  |
| Chlorobenzene          |         | 99                                  |  |
| Ethyl Benzene          |         | 106                                 |  |
| m,p-Xylene             |         | 106                                 |  |
| o-Xylene               |         | 113                                 |  |
| 1,3-Dichlorobenzene    |         | 102                                 |  |
| 1,4-Dichlorobenzene    |         | 102                                 |  |
| 1,2-Dichlorobenzene    |         | 102                                 |  |
| 1,2,4-Trichlorobenzene |         | 111                                 |  |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |
| Toluene-d8            | 105       | 70-130 |
| 4-Bromofluorobenzene  | 104       | 70-130 |



1/4/2011 Mr. Brad Green Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: IBM - B330 80K Project #: 2999.00 Workorder #: 1012142R1

Dear Mr. Brad Green

The following report includes the data for the above referenced project for sample(s) received on 12/7/2010 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: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott Project Manager

Page 1 of 26



## WORK ORDER #: 1012142R1

Work Order Summary

| CLIENT:        | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO: Accounts P<br>Sanborn, He<br>20 Foundry<br>Concord, N | Payable<br>ead & Associates<br>Street<br>H 03301 |                   |
|----------------|--|--|--|-------------------|
| PHONE:         | 603-229-1900   | <b>P.O.</b> #  |  |                   |
| FAX:           | 603-229-1919   | <b>PROJECT</b> # 2999.00 IBI                                   | M - B330 80K                                     |                   |
| DATE RECEIVED: | 12/07/2010   | CONTACT. Aucho Societ  |  |                   |
| DATE COMPLETEI | <b>D:</b> 12/20/2010   | CONTACT: Austra Scott  | L  |                   |
| DATE REISSUED: | 01/04/2011   |  |  |                   |
| FRACTION #     | NAME   | TEST   | RECEIPT<br>VAC./PRES.                            | FINAL<br>PRESSURF |
| 01A            | IA BE-23   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 01B            | IA BE-23   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 02A            | IA BF-24   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 02B            | IA BF-24   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 03A            | IA BG-22   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 03B            | IA BG-22   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 04A            | IA BG-23   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 04B            | IA BG-23   | Modified TO-15   | 6.0 "Hg  | 5 psi             |
| 05A            | IA BG-24   | Modified TO-15   | 5.5 "Hg  | 5 psi             |
| 05B            | IA BG-24   | Modified TO-15   | 5.5 "Hg  | 5 psi             |
| 06A            | Lab Blank  | Modified TO-15   | NA   | NA                |
| 06B            | Lab Blank  | Modified TO-15   | NA   | NA                |
| 07A            | CCV  | Modified TO-15   | NA   | NA                |
| 07B            | CCV  | Modified TO-15   | NA   | NA                |
| 08A            | LCS  | Modified TO-15   | NA   | NA                |
| 08AA           | LCSD   | Modified TO-15   | NA   | NA                |
| 08B            | LCS  | Modified TO-15   | NA   | NA                |

Continued on next page



### WORK ORDER #: 1012142R1

Work Order Summary

| CLIENT:        | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:         | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |     |
|----------------|--|------------------|--|-----|
| PHONE:         | 603-229-1900   | <b>P.O.</b> #    |  |     |
| FAX:           | 603-229-1919   | <b>PROJECT</b> # | 2999.00 IBM - B330 80K   |     |
| DATE RECEIVED: | 12/07/2010   | CONTACT:         | Ausha Scott  |     |
| DATE COMPLETED | : 12/20/2010   | continent        | Ausilu boot  |     |
| DATE REISSUED: | 01/04/2011   |                  |  |     |
|                |  |                  | RECEIPT FINA   | ۱L  |
| FRACTION #     | NAME   | TEST             | VAC./PRES. PRESS   | URE |
| 08BB           | LCSD   | Modified TO-1    | 15 NA NA   | ł   |

CERTIFIED BY:

Sinda d. Fruman

DATE: 01/04/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11 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 Air Toxics Ltd.

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



### LABORATORY NARRATIVE Modified TO-15 Full Scan/SIM Sanborn, Head & Associates Workorder# 1012142R1

Five 6 Liter Summa Canister (SIM Certified) samples were received on December 07, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

### **Receiving Notes**

There were no receiving discrepancies.

### **Analytical Notes**

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.



### THE WORKORDER WAS REISSUED ON JANUARY 04, 2011 AS FOLLOWS:

METHYLENE CHLORIDE WAS DETECTED IN THE CANISTER CERTIFICATION ANALYZED ON 11/29/10 AT LESS THAN 5X THE REPORTING LIMIT. AS A RESULT, METHYLENE CHLORIDE WAS FLAGGED AS INDICATED IN SAMPLE IA BF-24.

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

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

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

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

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



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

### **Client Sample ID: IA BE-23**

#### Lab ID#: 1012142R1-01A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.17                 | 0.42             | 0.83                  | 2.1               |
| Freon 11 | 0.17                 | 0.30             | 0.94                  | 1.7               |
| Acetone  | 0.84                 | 4.0              | 2.0                   | 9.6               |
| Benzene  | 0.17                 | 0.24             | 0.54                  | 0.77              |

#### **Client Sample ID: IA BE-23**

#### Lab ID#: 1012142R1-01B

| Compound             | Rpt. Limit | Amount | Rpt. Limit | Amount    |
|----------------------|------------|--------|------------|-----------|
| Compound             | (pppv)     | (hhna) | (ug/ms)    | (ug/ilis) |
| Vinyl Chloride       | 0.017      | 0.60   | 0.043      | 1.5       |
| Carbon Tetrachloride | 0.034      | 0.058  | 0.21       | 0.36      |

### Client Sample ID: IA BF-24

#### Lab ID#: 1012142R1-02A

| Compound           | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|--------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12           | 0.17                 | 0.42             | 0.83                  | 2.1               |
| Freon 11           | 0.17                 | 0.28             | 0.94                  | 1.5               |
| Acetone            | 0.84                 | 4.1              | 2.0                   | 9.8               |
| Methylene Chloride | 0.34                 | 0.51 B           | 1.2                   | 1.8 B             |
| Benzene            | 0.17                 | 0.30             | 0.54                  | 0.98              |
| Toluene            | 0.17                 | 0.21             | 0.63                  | 0.81              |

#### **Client Sample ID: IA BF-24**

#### Lab ID#: 1012142R1-02B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Vinyl Chloride       | 0.017      | 0.58   | 0.043      | 1.5     |
| Carbon Tetrachloride | 0.034      | 0.053  | 0.21       | 0.33    |



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

### **Client Sample ID: IA BG-22**

#### Lab ID#: 1012142R1-03A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.17                 | 0.45             | 0.83                  | 2.2               |
| Freon 11 | 0.17                 | 0.31             | 0.94                  | 1.7               |
| Acetone  | 0.84                 | 3.6              | 2.0                   | 8.4               |
| Benzene  | 0.17                 | 0.34             | 0.54                  | 1.1               |
| Toluene  | 0.17                 | 0.21             | 0.63                  | 0.80              |

### **Client Sample ID: IA BG-22**

#### Lab ID#: 1012142R1-03B

| Compound             | Rpt. Limit<br>(ppby) | Amount<br>(ppby) | Rpt. Limit<br>(ua/m3) | Amount<br>(ug/m3) |
|----------------------|----------------------|------------------|-----------------------|-------------------|
| Vinyl Chloride       | 0.017                | 0.51             | 0.043                 | 1.3               |
| Carbon Tetrachloride | 0.034                | 0.058            | 0.21                  | 0.37              |

#### **Client Sample ID: IA BG-23**

#### Lab ID#: 1012142R1-04A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.17                 | 0.42             | 0.83                  | 2.1               |
| Freon 11 | 0.17                 | 0.28             | 0.94                  | 1.6               |
| Acetone  | 0.84                 | 2.6              | 2.0                   | 6.1               |
| Benzene  | 0.17                 | 0.25             | 0.54                  | 0.80              |
| Toluene  | 0.17                 | 0.23             | 0.63                  | 0.86              |

#### Client Sample ID: IA BG-23

#### Lab ID#: 1012142R1-04B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Vinyl Chloride       | 0.017      | 0.47   | 0.043      | 1.2     |
| Carbon Tetrachloride | 0.034      | 0.057  | 0.21       | 0.36    |



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

### **Client Sample ID: IA BG-24**

### Lab ID#: 1012142R1-05A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.42             | 0.81                  | 2.1               |
| Freon 11 | 0.16                 | 0.25             | 0.92                  | 1.4               |
| Acetone  | 0.82                 | 4.0              | 1.9                   | 9.4               |
| Benzene  | 0.16                 | 0.24             | 0.52                  | 0.78              |
| Toluene  | 0.16                 | 0.23             | 0.62                  | 0.86              |

#### **Client Sample ID: IA BG-24**

#### Lab ID#: 1012142R1-05B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Vinyl Chloride       | 0.016      | 0.27   | 0.042      | 0.69    |
| Carbon Tetrachloride | 0.033      | 0.056  | 0.21       | 0.35    |



### Client Sample ID: IA BE-23 Lab ID#: 1012142R1-01A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121508              | Date of Collection: 12/2/10 9:53:00 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | 0.42                                   | 0.83                  | 2.1               |
| Freon 11                   | 0.17                 | 0.30                                   | 0.94                  | 1.7               |
| Freon 113                  | 0.17                 | Not Detected                           | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected                           | 0.67                  | Not Detected      |
| Acetone                    | 0.84                 | 4.0                                    | 2.0                   | 9.6               |
| Methylene Chloride         | 0.34                 | Not Detected                           | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected                           | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected                           | 0.92                  | Not Detected      |
| Benzene                    | 0.17                 | 0.24                                   | 0.54                  | 0.77              |
| Toluene                    | 0.17                 | Not Detected                           | 0.63                  | Not Detected      |
| Tetrachloroethene          | 0.17                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene              | 0.17                 | Not Detected                           | 0.77                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected                           | 0.73                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | Not Detected                           | 0.73                  | Not Detected      |
| o-Xylene                   | 0.17                 | Not Detected                           | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected                           | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected                           | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected                           | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected                           | 6.2                   | Not Detected      |

|                       | · · · ·   | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 114       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 95        | 70-130 |



### Client Sample ID: IA BE-23 Lab ID#: 1012142R1-01B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | e121508sim<br>1.68   | Date of Collection: 12/2/10 9:53:00 PM<br>Date of Analysis: 12/15/10 12:56 PM |       |                   |
|----------------------------|----------------------|---|-------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount Rpt. Limit Amoun<br>(ppbv) (ug/m3) (ug/m3)                             |       | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.017                | 0.60  | 0.043 | 1.5               |
| Carbon Tetrachloride       | 0.034                | 0.058   | 0.21  | 0.36              |
| Trichloroethene            | 0.034                | Not Detected  | 0.18  | Not Detected      |

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



### Client Sample ID: IA BF-24 Lab ID#: 1012142R1-02A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121509<br>1.68      | Date of Collection: 12/2/10 9:57:00 PM<br>Date of Analysis: 12/15/10 01:37 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | 0.42  | 0.83                  | 2.1               |
| Freon 11                   | 0.17                 | 0.28  | 0.94                  | 1.5               |
| Freon 113                  | 0.17                 | Not Detected  | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected  | 0.67                  | Not Detected      |
| Acetone                    | 0.84                 | 4.1   | 2.0                   | 9.8               |
| Methylene Chloride         | 0.34                 | 0.51 B  | 1.2                   | 1.8 B             |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected  | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected  | 0.92                  | Not Detected      |
| Benzene                    | 0.17                 | 0.30  | 0.54                  | 0.98              |
| Toluene                    | 0.17                 | 0.21  | 0.63                  | 0.81              |
| Tetrachloroethene          | 0.17                 | Not Detected  | 1.1                   | Not Detected      |
| Chlorobenzene              | 0.17                 | Not Detected  | 0.77                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected  | 0.73                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | Not Detected  | 0.73                  | Not Detected      |
| o-Xylene                   | 0.17                 | Not Detected  | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected  | 6.2                   | Not Detected      |

B = Compound present in Media Cert greater than the reporting limit

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 97        | 70-130 |



### Client Sample ID: IA BF-24 Lab ID#: 1012142R1-02B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121509sim<br>1.68   | Date of Collection: 12/2/10 9:57:00 PM<br>Date of Analysis: 12/15/10 01:37 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.017                | 0.58  | 0.043                 | 1.5               |
| Carbon Tetrachloride       | 0.034                | 0.053   | 0.21                  | 0.33              |
| Trichloroethene            | 0.034                | Not Detected  | 0.18                  | Not Detected      |

|                       | (0        | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 110       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



### Client Sample ID: IA BG-22 Lab ID#: 1012142R1-03A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121510<br>1.68      | Date of Collection: 12/2/10 10:02:00 PM<br>Date of Analysis: 12/15/10 02:28 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | 0.45   | 0.83                  | 2.2               |
| Freon 11                   | 0.17                 | 0.31   | 0.94                  | 1.7               |
| Freon 113                  | 0.17                 | Not Detected   | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected   | 0.67                  | Not Detected      |
| Acetone                    | 0.84                 | 3.6  | 2.0                   | 8.4               |
| Methylene Chloride         | 0.34                 | Not Detected   | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected   | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected   | 0.92                  | Not Detected      |
| Benzene                    | 0.17                 | 0.34   | 0.54                  | 1.1               |
| Toluene                    | 0.17                 | 0.21   | 0.63                  | 0.80              |
| Tetrachloroethene          | 0.17                 | Not Detected   | 1.1                   | Not Detected      |
| Chlorobenzene              | 0.17                 | Not Detected   | 0.77                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected   | 0.73                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | Not Detected   | 0.73                  | Not Detected      |
| o-Xylene                   | 0.17                 | Not Detected   | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected   | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected   | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected   | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected   | 6.2                   | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| Toluene-d8            | 102       | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



### Client Sample ID: IA BG-22 Lab ID#: 1012142R1-03B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121510sim<br>1.68   | 10sim         Date of Collection: 12/2/10 10:02:00 PM           1.68         Date of Analysis: 12/15/10 02:28 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.017                | 0.51   | 0.043                 | 1.3               |
| Carbon Tetrachloride       | 0.034                | 0.058  | 0.21                  | 0.37              |
| Trichloroethene            | 0.034                | Not Detected   | 0.18                  | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



### Client Sample ID: IA BG-23 Lab ID#: 1012142R1-04A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | e121511 Date of Collection: 12/2/10 9:40:00 PM |                  |                       |                   |
|------------------------|--|------------------|-----------------------|-------------------|
| Dil. Factor:           | 1.68   | Date             | e of Analysis: 12/1   | 5/10 03:21 PM     |
| Compound               | Rpt. Limit<br>(ppbv)                           | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.17   | 0.42             | 0.83                  | 2.1               |
| Freon 11               | 0.17   | 0.28             | 0.94                  | 1.6               |
| Freon 113              | 0.17   | Not Detected     | 1.3                   | Not Detected      |
| 1,1-Dichloroethene     | 0.17   | Not Detected     | 0.67                  | Not Detected      |
| Acetone                | 0.84   | 2.6              | 2.0                   | 6.1               |
| Methylene Chloride     | 0.34   | Not Detected     | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.17   | Not Detected     | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.17   | Not Detected     | 0.92                  | Not Detected      |
| Benzene                | 0.17   | 0.25             | 0.54                  | 0.80              |
| Toluene                | 0.17   | 0.23             | 0.63                  | 0.86              |
| Tetrachloroethene      | 0.17   | Not Detected     | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.17   | Not Detected     | 0.77                  | Not Detected      |
| Ethyl Benzene          | 0.17   | Not Detected     | 0.73                  | Not Detected      |
| m,p-Xylene             | 0.17   | Not Detected     | 0.73                  | Not Detected      |
| o-Xylene               | 0.17   | Not Detected     | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.17   | Not Detected     | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene    | 0.17   | Not Detected     | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene    | 0.17   | Not Detected     | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.84   | Not Detected     | 6.2                   | Not Detected      |

|                       | , ,       | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 103       | 70-130 |
| 4-Bromofluorobenzene  | 94        | 70-130 |



### Client Sample ID: IA BG-23 Lab ID#: 1012142R1-04B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121511sim Date of Collection: 12/2/10 9:40:00 PM<br>1.68 Date of Analysis: 12/15/10 03:21 PM |                  |                       | /2/10 9:40:00 PM<br>5/10 03:21 PM |
|----------------------------|---|------------------|-----------------------|-----------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv)  | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)                 |
| Vinyl Chloride             | 0.017   | 0.47             | 0.043                 | 1.2                               |
| Carbon Tetrachloride       | 0.034   | 0.057            | 0.21                  | 0.36                              |
| Trichloroethene            | 0.034   | Not Detected     | 0.18                  | Not Detected                      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



### Client Sample ID: IA BG-24 Lab ID#: 1012142R1-05A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | e121512              | e121512 Date of Collection: 12/2/10 9:22:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.64                 | Date   | e of Analysis: 12/1   | 5/10 04:14 PM     |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                               | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.42   | 0.81                  | 2.1               |
| Freon 11               | 0.16                 | 0.25   | 0.92                  | 1.4               |
| Freon 113              | 0.16                 | Not Detected                                   | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                                   | 0.65                  | Not Detected      |
| Acetone                | 0.82                 | 4.0  | 1.9                   | 9.4               |
| Methylene Chloride     | 0.33                 | Not Detected                                   | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                                   | 0.65                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                                   | 0.89                  | Not Detected      |
| Benzene                | 0.16                 | 0.24   | 0.52                  | 0.78              |
| Toluene                | 0.16                 | 0.23   | 0.62                  | 0.86              |
| Tetrachloroethene      | 0.16                 | Not Detected                                   | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                                   | 0.76                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                                   | 0.71                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                                   | 0.71                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                                   | 0.71                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                                   | 0.99                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                                   | 0.99                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                                   | 0.99                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.82                 | Not Detected                                   | 6.1                   | Not Detected      |

|                       | , ,       | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 108       | 70-130 |
| Toluene-d8            | 101       | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



### Client Sample ID: IA BG-24 Lab ID#: 1012142R1-05B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121512sim Date of Collection: 12/2/10 9:22:00 PM<br>1.64 Date of Analysis: 12/15/10 04:14 PM |                  |                       |                   |
|----------------------------|---|------------------|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)  | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016   | 0.27             | 0.042                 | 0.69              |
| Carbon Tetrachloride       | 0.033   | 0.056            | 0.21                  | 0.35              |
| Trichloroethene            | 0.033   | Not Detected     | 0.18                  | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



### Client Sample ID: Lab Blank Lab ID#: 1012142R1-06A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121507<br>1.00      | Date of Collection: NA<br>Date of Analysis: 12/15/10 12:11 PM |                       | 5/10 12:11 PM     |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.10                 | Not Detected  | 0.49                  | Not Detected      |
| Freon 11                   | 0.10                 | Not Detected  | 0.56                  | Not Detected      |
| Freon 113                  | 0.10                 | Not Detected  | 0.77                  | Not Detected      |
| 1,1-Dichloroethene         | 0.10                 | Not Detected  | 0.40                  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected  | 1.2                   | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected  | 0.69                  | Not Detected      |
| cis-1,2-Dichloroethene     | 0.10                 | Not Detected  | 0.40                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.10                 | Not Detected  | 0.54                  | Not Detected      |
| Benzene                    | 0.10                 | Not Detected  | 0.32                  | Not Detected      |
| Toluene                    | 0.10                 | Not Detected  | 0.38                  | Not Detected      |
| Tetrachloroethene          | 0.10                 | Not Detected  | 0.68                  | Not Detected      |
| Chlorobenzene              | 0.10                 | Not Detected  | 0.46                  | Not Detected      |
| Ethyl Benzene              | 0.10                 | Not Detected  | 0.43                  | Not Detected      |
| m,p-Xylene                 | 0.10                 | Not Detected  | 0.43                  | Not Detected      |
| o-Xylene                   | 0.10                 | Not Detected  | 0.43                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.10                 | Not Detected  | 0.60                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.10                 | Not Detected  | 0.60                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.10                 | Not Detected  | 0.60                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.50                 | Not Detected  | 3.7                   | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 115       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



### Client Sample ID: Lab Blank Lab ID#: 1012142R1-06B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:           | e121507sim | Date of Collection: NA              |            | 5/10 12:11 PM |
|----------------------|------------|-------------------------------------|------------|---------------|
| Dil. Factor:         | 1.00       | Date of Analysis: 12/15/10 12:11 PM |            |               |
| Compound             | Rpt. Limit | Amount                              | Rpt. Limit | Amount        |
|                      | (ppbv)     | (ppbv)                              | (ug/m3)    | (ug/m3)       |
| Vinyl Chloride       | 0.010      | Not Detected                        | 0.026      | Not Detected  |
| Carbon Tetrachloride | 0.020      | Not Detected                        | 0.12       | Not Detected  |
| Trichloroethene      | 0.020      | Not Detected                        | 0.11       | Not Detected  |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



### Client Sample ID: CCV Lab ID#: 1012142R1-07A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

#### File Name: e121502 **Date of Collection: NA** Dil. Factor: 1.00 Date of Analysis: 12/15/10 08:38 AM Compound %Recovery Freon 12 101 Freon 11 95 89 Freon 113 1,1-Dichloroethene 86 89 Acetone 83 Methylene Chloride 89 cis-1,2-Dichloroethene 1,1,1-Trichloroethane 97 Benzene 84 Toluene 87 Tetrachloroethene 96 Chlorobenzene 88 Ethyl Benzene 88 m,p-Xylene 90 92 o-Xylene 90 1,3-Dichlorobenzene 86 1,4-Dichlorobenzene 88 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene 96

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |
| Toluene-d8            | 98        | 70-130 |
| 4-Bromofluorobenzene  | 101       | 70-130 |



### Client Sample ID: CCV Lab ID#: 1012142R1-07B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:               | e121502sim | Date of Colle | ction: NA               |
|--------------------------|------------|---------------|-------------------------|
| Dil. Factor:             | 1.00       | Date of Analy | vsis: 12/15/10 08:38 AM |
| Compound                 |            |               | %Recovery               |
| Vinyl Chloride           |            |               | 102                     |
| Carbon Tetrachloride     |            |               | 109                     |
| Trichloroethene          |            |               | 85                      |
| Container Type: NA - Not | Applicable |               |                         |
|                          |            |               | Method                  |
| Surrogates               |            | %Recovery     | Limits                  |
| 1,2-Dichloroethane-d4    |            | 111           | 70-130                  |
| Toluene-d8               |            | 98            | 70-130                  |
| 4-Bromofluorobenzene     |            | 104           | 70-130                  |



### Client Sample ID: LCS Lab ID#: 1012142R1-08A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e121503<br>1.00 | Date of Collection: NA<br>Date of Analysis: 12/15/10 09:16 AM |
|----------------------------|-----------------|---|
| Compound                   |                 | %Recovery   |
| Freon 12                   |                 | 112   |
| Freon 11                   |                 | 108   |
| Freon 113                  |                 | 94  |
| 1,1-Dichloroethene         |                 | 94  |
| Acetone                    |                 | 95  |
| Methylene Chloride         |                 | 93  |
| cis-1,2-Dichloroethene     |                 | 94  |
| 1,1,1-Trichloroethane      |                 | 106   |
| Benzene                    |                 | 90  |
| Toluene                    |                 | 92  |
| Tetrachloroethene          |                 | 96  |
| Chlorobenzene              |                 | 89  |
| Ethyl Benzene              |                 | 92  |
| m,p-Xylene                 |                 | 94  |
| o-Xylene                   |                 | 94  |
| 1,3-Dichlorobenzene        |                 | 95  |
| 1,4-Dichlorobenzene        |                 | 90  |
| 1,2-Dichlorobenzene        |                 | 93  |
| 1,2,4-Trichlorobenzene     |                 | 110   |

| 21 11                 |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 119       | 70-130 |
| Toluene-d8            | 101       | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



### Client Sample ID: LCSD Lab ID#: 1012142R1-08AA MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:e121504Dil. Factor:1.00 |  | Date of Collection: NA<br>Date of Analysis: 12/15/10 09:53 AM |  |
|-----------------------------------|--|---|--|
| Compound                          |  | %Recovery   |  |
| Freon 12                          |  | 109   |  |
| Freon 11                          |  | 108   |  |
| Freon 113                         |  | 94  |  |
| 1,1-Dichloroethene                |  | 90  |  |
| Acetone                           |  | 94  |  |
| Methylene Chloride                |  | 88  |  |
| cis-1,2-Dichloroethene            |  | 92  |  |
| 1,1,1-Trichloroethane             |  | 107   |  |
| Benzene                           |  | 87  |  |
| Toluene                           |  | 90  |  |
| Tetrachloroethene                 |  | 96  |  |
| Chlorobenzene                     |  | 93  |  |
| Ethyl Benzene                     |  | 93  |  |
| m,p-Xylene                        |  | 94  |  |
| o-Xylene                          |  | 98  |  |
| 1,3-Dichlorobenzene               |  | 96  |  |
| 1,4-Dichlorobenzene               |  | 94  |  |
| 1,2-Dichlorobenzene               |  | 95  |  |
| 1,2,4-Trichlorobenzene            |  | 114   |  |

| 21 11                 |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 119       | 70-130 |
| Toluene-d8            | 96        | 70-130 |
| 4-Bromofluorobenzene  | 103       | 70-130 |



### Client Sample ID: LCS Lab ID#: 1012142R1-08B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:              | e121503sim   | Date of Colle | ction: NA               |
|-------------------------|--------------|---------------|-------------------------|
| Dil. Factor:            | 1.00         | Date of Analy | vsis: 12/15/10 09:16 AM |
| Compound                |              |               | %Recovery               |
| Vinyl Chloride          |              |               | 101                     |
| Carbon Tetrachloride    |              |               | 106                     |
| Trichloroethene         |              |               | 89                      |
| Container Type: NA - No | t Applicable |               |                         |
|                         |              |               | Method                  |
| Surrogates              |              | %Recovery     | Limits                  |
| 1,2-Dichloroethane-d4   |              | 114           | 70-130                  |
| Toluene-d8              |              | 98            | 70-130                  |
| 4-Bromofluorobenzene    |              | 105           | 70-130                  |



### Client Sample ID: LCSD Lab ID#: 1012142R1-08BB MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:              | e121504sim   | Date of Collect | ction: NA              |
|-------------------------|--------------|-----------------|------------------------|
| Dil. Factor:            | 1.00         | Date of Analy   | sis: 12/15/10 09:53 AM |
| Compound                |              |                 | %Recovery              |
| Vinyl Chloride          |              |                 | 99                     |
| Carbon Tetrachloride    |              |                 | 108                    |
| Trichloroethene         |              |                 | 90                     |
| Container Type: NA - No | t Applicable |                 |                        |
|                         |              |                 | Method                 |
| Surrogates              |              | %Recovery       | Limits                 |
| 1,2-Dichloroethane-d4   |              | 115             | 70-130                 |
| Toluene-d8              |              | 98              | 70-130                 |
| 4-Bromofluorobenzene    |              | 106             | 70-130                 |



6/1/2011 Mr. Brad Green Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: IBM - B330D (BOK) EFK, NY Project #: 2999.00 Workorder #: 1105323

Dear Mr. Brad Green

The following report includes the data for the above referenced project for sample(s) received on 5/16/2011 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: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott Project Manager



## WORK ORDER #: 1105323

Work Order Summary

| CLIENT:         | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:  | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|--|-----------|--|
| PHONE:          | 603-229-1900   | P.O. #    |  |
| FAX:            | 603-229-1919   | PROJECT # | 2999.00 IBM - B330D (BOK) EFK, NY  |
| DATE RECEIVED:  | 05/16/2011   | CONTACT   | Ausha Scott  |
| DATE COMPLETED: | 05/30/2011   | contact.  | Ausia Scott  |

|            |           |                | RECEIPT    | FINAL    |
|------------|-----------|----------------|------------|----------|
| FRACTION # | NAME      | TEST           | VAC./PRES. | PRESSURE |
| 01A        | AA MAU-72 | Modified TO-15 | 7.5 "Hg    | 5 psi    |
| 01B        | AA MAU-72 | Modified TO-15 | 7.5 "Hg    | 5 psi    |
| 02A        | IA BE-23  | Modified TO-15 | 5.5 "Hg    | 5 psi    |
| 02B        | IA BE-23  | Modified TO-15 | 5.5 "Hg    | 5 psi    |
| 03A        | IA BF-24  | Modified TO-15 | 4.0 "Hg    | 5 psi    |
| 03B        | IA BF-24  | Modified TO-15 | 4.0 "Hg    | 5 psi    |
| 04A        | IA BG-22  | Modified TO-15 | 5.5 "Hg    | 5 psi    |
| 04B        | IA BG-22  | Modified TO-15 | 5.5 "Hg    | 5 psi    |
| 05A        | IA BG-23  | Modified TO-15 | 6.5 "Hg    | 5 psi    |
| 05B        | IA BG-23  | Modified TO-15 | 6.5 "Hg    | 5 psi    |
| 06A        | IA BG-24  | Modified TO-15 | 2.0 "Hg    | 5 psi    |
| 06B        | IA BG-24  | Modified TO-15 | 2.0 "Hg    | 5 psi    |
| 07A        | Lab Blank | Modified TO-15 | NA         | NA       |
| 07B        | Lab Blank | Modified TO-15 | NA         | NA       |
| 08A        | CCV       | Modified TO-15 | NA         | NA       |
| 08B        | CCV       | Modified TO-15 | NA         | NA       |
| 09A        | LCS       | Modified TO-15 | NA         | NA       |
|            |           |                |            |          |

Continued on next page



### WORK ORDER #: 1105323

Work Order Summary

| CLIENT:         | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:      | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|--|---------------|--|
| PHONE:          | 603-229-1900   | <b>P.O.</b> # |  |
| FAX:            | 603-229-1919   | PROJECT #     | 2999.00 IBM - B330D (BOK) EFK, NY  |
| DATE RECEIVED:  | 05/16/2011   | CONTACT:      | Ausha Scott  |
| DATE COMPLETED: | 05/30/2011   |               |  |

|            |      |                | RECEIPT    | FINAL    |
|------------|------|----------------|------------|----------|
| FRACTION # | NAME | TEST           | VAC./PRES. | PRESSURE |
| 09AA       | LCSD | Modified TO-15 | NA         | NA       |
| 09B        | LCS  | Modified TO-15 | NA         | NA       |
| 09BB       | LCSD | Modified TO-15 | NA         | NA       |

CERTIFIED BY:

Sinda d. Fruman

DATE: 05/30/11

Laboratory Director

Certification numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/11 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 Air Toxics Ltd.

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



### LABORATORY NARRATIVE Modified TO-15 Full Scan/SIM Sanborn, Head & Associates Workorder# 1105323

Six 6 Liter Summa Canister (SIM Certified) samples were received on May 16, 2011. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

### **Receiving Notes**

There were no receiving discrepancies.

### Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.



All Quality Control Limit exceedences 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 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


### **Client Sample ID: AA MAU-72**

#### Lab ID#: 1105323-01A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.18                 | 0.58             | 0.88                  | 2.9               |
| Freon 11 | 0.18                 | 0.39 J           | 1.0                   | 2.2 J             |
| Acetone  | 0.90                 | 2.6              | 2.1                   | 6.2               |

### **Client Sample ID: AA MAU-72**

#### Lab ID#: 1105323-01B

| Compound             | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------------------|----------------------|------------------|-----------------------|-------------------|
| Vinyl Chloride       | 0.018                | 0.040            | 0.046                 | 0.10              |
| Carbon Tetrachloride | 0.036                | 0.088            | 0.22                  | 0.55              |

### **Client Sample ID: IA BE-23**

#### Lab ID#: 1105323-02A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.54             | 0.81                  | 2.7               |
| Freon 11 | 0.16                 | 0.38 J           | 0.92                  | 2.2 J             |
| Acetone  | 0.82                 | 3.9              | 1.9                   | 9.2               |

### **Client Sample ID: IA BE-23**

#### Lab ID#: 1105323-02B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.033      | 0.084  | 0.21       | 0.53    |

#### **Client Sample ID: IA BF-24**

#### Lab ID#: 1105323-03A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.60             | 0.77                  | 3.0               |
| Freon 11 | 0.16                 | 0.41 J           | 0.87                  | 2.3 J             |



| Client Sample ID: IA BF-24 |                      |                  |                       |                   |
|----------------------------|----------------------|------------------|-----------------------|-------------------|
| Lab ID#: 1105323-03A       |                      |                  |                       |                   |
| Acetone                    | 0.78                 | 3.6              | 1.8                   | 8.6               |
| Client Sample ID: IA BF-24 |                      |                  |                       |                   |
| Lab ID#: 1105323-03B       |                      |                  |                       |                   |
| Compound                   | Rpt. Limit<br>(ppby) | Amount<br>(ppby) | Rpt. Limit<br>(ua/m3) | Amount<br>(uɑ/m3) |
| Vinvl Chloride             | 0.016                | 0.024            | 0.040                 | 0.062             |
| Carbon Tetrachloride       | 0.031                | 0.088            | 0.20                  | 0.56              |
| Client Sample ID: IA BG-22 |                      |                  |                       |                   |
| Lab ID#: 1105323-04A       |                      |                  |                       |                   |
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.61             | 0.81                  | 3.0               |
| Freon 11                   | 0.16                 | 0.39 J           | 0.92                  | 2.2 J             |
| Acetone                    | 0.82                 | 3.1              | 1.9                   | 7.4               |
| Client Sample ID: IA BG-22 |                      |                  |                       |                   |
| Lab ID#: 1105323-04B       |                      |                  |                       |                   |
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Carbon Tetrachloride       | 0.033                | 0.092            | 0.21                  | 0.58              |
| Client Sample ID: IA BG-23 |                      |                  |                       |                   |
| Lab ID#: 1105323-05A       |                      |                  |                       |                   |
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | 0.58             | 0.84                  | 2.9               |
| Freon 11                   | 0.17                 | 0.38 J           | 0.96                  | 2.2 J             |
| Acetone                    | 0.86                 | 3.7              | 2.0                   | 8.8               |



### **Client Sample ID: IA BG-23**

Lab ID#: 1105323-05B

| Compound             | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
|                      | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.034      | 0.065  | 0.22       | 0.41    |

### **Client Sample ID: IA BG-24**

### Lab ID#: 1105323-06A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.14                 | 0.60             | 0.71                  | 3.0               |
| Freon 11 | 0.14                 | 0.38 J           | 0.81                  | 2.2 J             |
| Acetone  | 0.72                 | 4.0              | 1.7                   | 9.5               |

### **Client Sample ID: IA BG-24**

#### Lab ID#: 1105323-06B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.029      | 0.092  | 0.18       | 0.58    |



### Client Sample ID: AA MAU-72 Lab ID#: 1105323-01A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051807<br>1.79      | Date of Collection: 5/12/11 2:22:00 PM<br>Date of Analysis: 5/18/11 04:50 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.18                 | 0.58   | 0.88                  | 2.9               |
| Freon 11                   | 0.18                 | 0.39 J   | 1.0                   | 2.2 J             |
| Freon 113                  | 0.18                 | Not Detected   | 1.4                   | Not Detected      |
| 1,1-Dichloroethene         | 0.18                 | Not Detected   | 0.71                  | Not Detected      |
| Acetone                    | 0.90                 | 2.6  | 2.1                   | 6.2               |
| Methylene Chloride         | 0.36                 | Not Detected   | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.18                 | Not Detected   | 0.71                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.18                 | Not Detected   | 0.98                  | Not Detected      |
| Benzene                    | 0.18                 | Not Detected   | 0.57                  | Not Detected      |
| Toluene                    | 0.18                 | Not Detected   | 0.67                  | Not Detected      |
| Tetrachloroethene          | 0.18                 | Not Detected   | 1.2                   | Not Detected      |
| Chlorobenzene              | 0.18                 | Not Detected   | 0.82                  | Not Detected      |
| Ethyl Benzene              | 0.18                 | Not Detected   | 0.78                  | Not Detected      |
| m,p-Xylene                 | 0.18                 | Not Detected   | 0.78                  | Not Detected      |
| o-Xylene                   | 0.18                 | Not Detected   | 0.78                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.18                 | Not Detected   | 1.1                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.18                 | Not Detected   | 1.1                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.18                 | Not Detected   | 1.1                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.90                 | Not Detected   | 6.6                   | Not Detected      |

J = Estimated value due to bias in the CCV.

|                       | , , , , , , , , , , , , , , , , , , , | Method |
|-----------------------|---------------------------------------|--------|
| Surrogates            | %Recovery                             | Limits |
| 1,2-Dichloroethane-d4 | 122                                   | 70-130 |
| Toluene-d8            | 100                                   | 70-130 |
| 4-Bromofluorobenzene  | 90                                    | 70-130 |



### Client Sample ID: AA MAU-72 Lab ID#: 1105323-01B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051807sim<br>1.79   | Date of Collection: 5/12/11 2:22:00 PM<br>Date of Analysis: 5/18/11 04:50 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.018                | 0.040  | 0.046                 | 0.10              |
| Carbon Tetrachloride       | 0.036                | 0.088  | 0.22                  | 0.55              |
| Trichloroethene            | 0.036                | Not Detected   | 0.19                  | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 123       | 70-130 |  |
| Toluene-d8            | 102       | 70-130 |  |
| 4-Bromofluorobenzene  | 92        | 70-130 |  |



### Client Sample ID: IA BE-23 Lab ID#: 1105323-02A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051808<br>1.64      | Date of Collection: 5/12/11 2:50:00 PM<br>Date of Analysis: 5/18/11 05:30 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.54   | 0.81                  | 2.7               |
| Freon 11                   | 0.16                 | 0.38 J   | 0.92                  | 2.2 J             |
| Freon 113                  | 0.16                 | Not Detected   | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected   | 0.65                  | Not Detected      |
| Acetone                    | 0.82                 | 3.9  | 1.9                   | 9.2               |
| Methylene Chloride         | 0.33                 | Not Detected   | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected   | 0.65                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected   | 0.89                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected   | 0.52                  | Not Detected      |
| Toluene                    | 0.16                 | Not Detected   | 0.62                  | Not Detected      |
| Tetrachloroethene          | 0.16                 | Not Detected   | 1.1                   | Not Detected      |
| Chlorobenzene              | 0.16                 | Not Detected   | 0.76                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected   | 0.71                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected   | 0.71                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected   | 0.71                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected   | 0.99                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected   | 0.99                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected   | 0.99                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.82                 | Not Detected   | 6.1                   | Not Detected      |

J = Estimated value due to bias in the CCV.

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 124       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



### Client Sample ID: IA BE-23 Lab ID#: 1105323-02B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051808sim<br>1.64   | Date of Collection: 5/12/11 2:50:00 PM<br>Date of Analysis: 5/18/11 05:30 PM |                       | 2/11 2:50:00 PM<br>/11 05:30 PM |
|----------------------------|----------------------|--|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.016                | Not Detected   | 0.042                 | Not Detected                    |
| Carbon Tetrachloride       | 0.033                | 0.084  | 0.21                  | 0.53                            |
| Trichloroethene            | 0.033                | Not Detected   | 0.18                  | Not Detected                    |

|                       |           | Method<br>Limits |  |
|-----------------------|-----------|------------------|--|
| Surrogates            | %Recovery |                  |  |
| 1,2-Dichloroethane-d4 | 125       | 70-130           |  |
| Toluene-d8            | 103       | 70-130           |  |
| 4-Bromofluorobenzene  | 96        | 70-130           |  |



### Client Sample ID: IA BF-24 Lab ID#: 1105323-03A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | w051809              | Date of Collection: 5/12/11 2:43:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| DII. Factor:           | 1.55                 | Date                                   | e of Analysis: 5/18   | /11 06:06 PM      |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.60                                   | 0.77                  | 3.0               |
| Freon 11               | 0.16                 | 0.41 J                                 | 0.87                  | 2.3 J             |
| Freon 113              | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.61                  | Not Detected      |
| Acetone                | 0.78                 | 3.6                                    | 1.8                   | 8.6               |
| Methylene Chloride     | 0.31                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.61                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.84                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.50                  | Not Detected      |
| Toluene                | 0.16                 | Not Detected                           | 0.58                  | Not Detected      |
| Tetrachloroethene      | 0.16                 | Not Detected                           | 1.0                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.71                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.67                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.67                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.67                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.93                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.93                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.93                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.78                 | Not Detected                           | 5.8                   | Not Detected      |

J = Estimated value due to bias in the CCV.

|                       | , ,       | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 124       | 70-130 |  |
| Toluene-d8            | 98        | 70-130 |  |
| 4-Bromofluorobenzene  | 94        | 70-130 |  |



### Client Sample ID: IA BF-24 Lab ID#: 1105323-03B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051809sim<br>1.55   | Date of Collection: 5/12/11 2:43:00 PM<br>Date of Analysis: 5/18/11 06:06 PM |                       | 2/11 2:43:00 PM<br>/11 06:06 PM |
|----------------------------|----------------------|--|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.016                | 0.024  | 0.040                 | 0.062                           |
| Carbon Tetrachloride       | 0.031                | 0.088  | 0.20                  | 0.56                            |
| Trichloroethene            | 0.031                | Not Detected   | 0.17                  | Not Detected                    |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 124       | 70-130 |  |
| Toluene-d8            | 103       | 70-130 |  |
| 4-Bromofluorobenzene  | 95        | 70-130 |  |



### Client Sample ID: IA BG-22 Lab ID#: 1105323-04A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | w051810    | Date of Collection: 5/12/11 2:31:00 PM |                   |              |
|------------------------|------------|--|-------------------|--------------|
| Dil. Factor:           | 1.64       | Date                                   | of Analysis: 5/18 | /11 06:42 PM |
|                        | Rpt. Limit | Amount                                 | Rpt. Limit        | Amount       |
| Compound               | (ppbv)     | (ppbv)                                 | (ug/m3)           | (ug/m3)      |
| Freon 12               | 0.16       | 0.61                                   | 0.81              | 3.0          |
| Freon 11               | 0.16       | 0.39 J                                 | 0.92              | 2.2 J        |
| Freon 113              | 0.16       | Not Detected                           | 1.2               | Not Detected |
| 1,1-Dichloroethene     | 0.16       | Not Detected                           | 0.65              | Not Detected |
| Acetone                | 0.82       | 3.1                                    | 1.9               | 7.4          |
| Methylene Chloride     | 0.33       | Not Detected                           | 1.1               | Not Detected |
| cis-1,2-Dichloroethene | 0.16       | Not Detected                           | 0.65              | Not Detected |
| 1,1,1-Trichloroethane  | 0.16       | Not Detected                           | 0.89              | Not Detected |
| Benzene                | 0.16       | Not Detected                           | 0.52              | Not Detected |
| Toluene                | 0.16       | Not Detected                           | 0.62              | Not Detected |
| Tetrachloroethene      | 0.16       | Not Detected                           | 1.1               | Not Detected |
| Chlorobenzene          | 0.16       | Not Detected                           | 0.76              | Not Detected |
| Ethyl Benzene          | 0.16       | Not Detected                           | 0.71              | Not Detected |
| m,p-Xylene             | 0.16       | Not Detected                           | 0.71              | Not Detected |
| o-Xylene               | 0.16       | Not Detected                           | 0.71              | Not Detected |
| 1,3-Dichlorobenzene    | 0.16       | Not Detected                           | 0.99              | Not Detected |
| 1,4-Dichlorobenzene    | 0.16       | Not Detected                           | 0.99              | Not Detected |
| 1,2-Dichlorobenzene    | 0.16       | Not Detected                           | 0.99              | Not Detected |
| 1,2,4-Trichlorobenzene | 0.82       | Not Detected                           | 6.1               | Not Detected |

J = Estimated value due to bias in the CCV.

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 122       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 94        | 70-130 |  |



### Client Sample ID: IA BG-22 Lab ID#: 1105323-04B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051810sim<br>1.64   | Date of Collection: 5/12/11 2:31:00 PM<br>Date of Analysis: 5/18/11 06:42 PM |                       | 2/11 2:31:00 PM<br>/11 06:42 PM |
|----------------------------|----------------------|--|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.016                | Not Detected   | 0.042                 | Not Detected                    |
| Carbon Tetrachloride       | 0.033                | 0.092  | 0.21                  | 0.58                            |
| Trichloroethene            | 0.033                | Not Detected   | 0.18                  | Not Detected                    |

|                       | (0        | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 125       | 70-130 |  |
| Toluene-d8            | 104       | 70-130 |  |
| 4-Bromofluorobenzene  | 95        | 70-130 |  |



### Client Sample ID: IA BG-23 Lab ID#: 1105323-05A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051811<br>1.71      | Date of Collection: 5/12/11 2:28:00 F<br>Date of Analysis: 5/18/11 07:18 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | 0.58  | 0.84                  | 2.9               |
| Freon 11                   | 0.17                 | 0.38 J  | 0.96                  | 2.2 J             |
| Freon 113                  | 0.17                 | Not Detected  | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected  | 0.68                  | Not Detected      |
| Acetone                    | 0.86                 | 3.7   | 2.0                   | 8.8               |
| Methylene Chloride         | 0.34                 | Not Detected  | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected  | 0.68                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected  | 0.93                  | Not Detected      |
| Benzene                    | 0.17                 | Not Detected  | 0.55                  | Not Detected      |
| Toluene                    | 0.17                 | Not Detected  | 0.64                  | Not Detected      |
| Tetrachloroethene          | 0.17                 | Not Detected  | 1.2                   | Not Detected      |
| Chlorobenzene              | 0.17                 | Not Detected  | 0.79                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected  | 0.74                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | Not Detected  | 0.74                  | Not Detected      |
| o-Xylene                   | 0.17                 | Not Detected  | 0.74                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.86                 | Not Detected  | 6.3                   | Not Detected      |

J = Estimated value due to bias in the CCV.

|                       | , , , , , , , , , , , , , , , , , , , | Method |  |
|-----------------------|---------------------------------------|--------|--|
| Surrogates            | %Recovery                             | Limits |  |
| 1,2-Dichloroethane-d4 | 126                                   | 70-130 |  |
| Toluene-d8            | 99                                    | 70-130 |  |
| 4-Bromofluorobenzene  | 90                                    | 70-130 |  |



### Client Sample ID: IA BG-23 Lab ID#: 1105323-05B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | w051811sim<br>1.71   | Date of Collection: 5/12/11 2:28:00 PM<br>Date of Analysis: 5/18/11 07:18 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.017                | Not Detected   | 0.044                 | Not Detected      |
| Carbon Tetrachloride       | 0.034                | 0.065  | 0.22                  | 0.41              |
| Trichloroethene            | 0.034                | Not Detected   | 0.18                  | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 124       | 70-130 |  |
| Toluene-d8            | 103       | 70-130 |  |
| 4-Bromofluorobenzene  | 93        | 70-130 |  |



### Client Sample ID: IA BG-24 Lab ID#: 1105323-06A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | w051812    | Date of Collection: 5/12/11 1:10:00 PM |            |              |
|------------------------|------------|--|------------|--------------|
| Dil. Factor:           | 1.44       | Date of Analysis: 5/18/11 08:28 PM     |            |              |
|                        | Rpt. Limit | Amount                                 | Rpt. Limit | Amount       |
| Compound               | (ppbv)     | (ppbv)                                 | (ug/m3)    | (ug/m3)      |
| Freon 12               | 0.14       | 0.60                                   | 0.71       | 3.0          |
| Freon 11               | 0.14       | 0.38 J                                 | 0.81       | 2.2 J        |
| Freon 113              | 0.14       | Not Detected                           | 1.1        | Not Detected |
| 1,1-Dichloroethene     | 0.14       | Not Detected                           | 0.57       | Not Detected |
| Acetone                | 0.72       | 4.0                                    | 1.7        | 9.5          |
| Methylene Chloride     | 0.29       | Not Detected                           | 1.0        | Not Detected |
| cis-1,2-Dichloroethene | 0.14       | Not Detected                           | 0.57       | Not Detected |
| 1,1,1-Trichloroethane  | 0.14       | Not Detected                           | 0.78       | Not Detected |
| Benzene                | 0.14       | Not Detected                           | 0.46       | Not Detected |
| Toluene                | 0.14       | Not Detected                           | 0.54       | Not Detected |
| Tetrachloroethene      | 0.14       | Not Detected                           | 0.98       | Not Detected |
| Chlorobenzene          | 0.14       | Not Detected                           | 0.66       | Not Detected |
| Ethyl Benzene          | 0.14       | Not Detected                           | 0.62       | Not Detected |
| m,p-Xylene             | 0.14       | Not Detected                           | 0.62       | Not Detected |
| o-Xylene               | 0.14       | Not Detected                           | 0.62       | Not Detected |
| 1,3-Dichlorobenzene    | 0.14       | Not Detected                           | 0.86       | Not Detected |
| 1,4-Dichlorobenzene    | 0.14       | Not Detected                           | 0.86       | Not Detected |
| 1,2-Dichlorobenzene    | 0.14       | Not Detected                           | 0.86       | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72       | Not Detected                           | 5.3        | Not Detected |

J = Estimated value due to bias in the CCV.

|                       | · · · ·   | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 123       | 70-130 |  |
| Toluene-d8            | 102       | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



### Client Sample ID: IA BG-24 Lab ID#: 1105323-06B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:<br>Dil. Factor: | w051812sim<br>1.44   | Date of Collection: 5/12/11 1:10:00 PM<br>Date of Analysis: 5/18/11 08:28 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.014                | Not Detected   | 0.037                 | Not Detected      |
| Carbon Tetrachloride       | 0.029                | 0.092  | 0.18                  | 0.58              |
| Trichloroethene            | 0.029                | Not Detected   | 0.15                  | Not Detected      |

|                       | (0        | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 126       | 70-130 |  |
| Toluene-d8            | 105       | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



### Client Sample ID: Lab Blank Lab ID#: 1105323-07A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:<br>Dil. Factor: | w051806a<br>1.00     | Date of Collection: NA<br>Date of Analysis: 5/18/11 03:57 PM |                       | /11 03:57 PM      |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.10                 | Not Detected   | 0.49                  | Not Detected      |
| Freon 11                   | 0.10                 | Not Detected   | 0.56                  | Not Detected      |
| Freon 113                  | 0.10                 | Not Detected   | 0.77                  | Not Detected      |
| 1,1-Dichloroethene         | 0.10                 | Not Detected   | 0.40                  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected   | 1.2                   | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected   | 0.69                  | Not Detected      |
| cis-1,2-Dichloroethene     | 0.10                 | Not Detected   | 0.40                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.10                 | Not Detected   | 0.54                  | Not Detected      |
| Benzene                    | 0.10                 | Not Detected   | 0.32                  | Not Detected      |
| Toluene                    | 0.10                 | Not Detected   | 0.38                  | Not Detected      |
| Tetrachloroethene          | 0.10                 | Not Detected   | 0.68                  | Not Detected      |
| Chlorobenzene              | 0.10                 | Not Detected   | 0.46                  | Not Detected      |
| Ethyl Benzene              | 0.10                 | Not Detected   | 0.43                  | Not Detected      |
| m,p-Xylene                 | 0.10                 | Not Detected   | 0.43                  | Not Detected      |
| o-Xylene                   | 0.10                 | Not Detected   | 0.43                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.10                 | Not Detected   | 0.60                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.10                 | Not Detected   | 0.60                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.10                 | Not Detected   | 0.60                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.50                 | Not Detected   | 3.7                   | Not Detected      |

| 21 11                 |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 123       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 96        | 70-130 |  |



### Client Sample ID: Lab Blank Lab ID#: 1105323-07B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:           | w051806asim | Date of Collection: NA             |            | /11 03:57 PM |
|----------------------|-------------|------------------------------------|------------|--------------|
| Dil. Factor:         | 1.00        | Date of Analysis: 5/18/11 03:57 PM |            |              |
| Compound             | Rpt. Limit  | Amount                             | Rpt. Limit | Amount       |
|                      | (ppbv)      | (ppbv)                             | (ug/m3)    | (ug/m3)      |
| Vinyl Chloride       | 0.010       | Not Detected                       | 0.026      | Not Detected |
| Carbon Tetrachloride | 0.020       | Not Detected                       | 0.12       | Not Detected |
| Trichloroethene      | 0.020       | Not Detected                       | 0.11       | Not Detected |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 124       | 70-130 |
| Toluene-d8            | 102       | 70-130 |
| 4-Bromofluorobenzene  | 97        | 70-130 |



### Client Sample ID: CCV Lab ID#: 1105323-08A

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

٦

| File Name:             | w051802 | Date of Collection: NA             |
|------------------------|---------|------------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 5/18/11 12:58 PM |
| Compound               |         | %Recovery                          |
| Freon 12               |         | 114                                |
| Freon 11               |         | 139 Q                              |
| Freon 113              |         | 106                                |
| 1,1-Dichloroethene     |         | 101                                |
| Acetone                |         | 121                                |
| Methylene Chloride     |         | 98                                 |
| cis-1,2-Dichloroethene |         | 93                                 |
| 1,1,1-Trichloroethane  |         | 98                                 |
| Benzene                |         | 125                                |
| Toluene                |         | 114                                |
| Tetrachloroethene      |         | 97                                 |
| Chlorobenzene          |         | 103                                |
| Ethyl Benzene          |         | 102                                |
| m,p-Xylene             |         | 98                                 |
| o-Xylene               |         | 101                                |
| 1,3-Dichlorobenzene    |         | 96                                 |
| 1,4-Dichlorobenzene    |         | 90                                 |
| 1,2-Dichlorobenzene    |         | 94                                 |
| 1,2,4-Trichlorobenzene |         | 78                                 |

### Q = Exceeds Quality Control limits.

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 122       | 70-130 |
| Toluene-d8            | 110       | 70-130 |
| 4-Bromofluorobenzene  | 102       | 70-130 |



## Client Sample ID: CCV Lab ID#: 1105323-08B

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

| File Name:               | w051802sim | Date of Collec | ction: NA             |
|--------------------------|------------|----------------|-----------------------|
| Dil. Factor:             | 1.00       | Date of Analy  | sis: 5/18/11 12:58 PM |
|                          |            |                |                       |
| Compound                 |            |                | %Recovery             |
| Vinyl Chloride           |            |                | 119                   |
| Carbon Tetrachloride     |            |                | 116                   |
| Trichloroethene          |            |                | 97                    |
| Container Type: NA - Not | Applicable |                |                       |
|                          |            |                | Method                |
| Surrogates               |            | %Recovery      | Limits                |
| 1,2-Dichloroethane-d4    |            | 120            | 70-130                |
| Toluene-d8               |            | 112            | 70-130                |
| 4-Bromofluorobenzene     |            | 102            | 70-130                |



### Client Sample ID: LCS Lab ID#: 1105323-09A

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

٦

| File Name:<br>Dil. Factor: | w051803<br>1.00 | Date of Collection: NA<br>Date of Analysis: 5/18/11 01:50 PM |  |
|----------------------------|-----------------|--|--|
| Compound                   |                 | %Recovery  |  |
| Freon 12                   |                 | 110  |  |
| Freon 11                   |                 | 142 Q  |  |
| Freon 113                  |                 | 102  |  |
| 1,1-Dichloroethene         |                 | 95   |  |
| Acetone                    |                 | 118  |  |
| Methylene Chloride         |                 | 97   |  |
| cis-1,2-Dichloroethene     |                 | 97   |  |
| 1,1,1-Trichloroethane      |                 | 100  |  |
| Benzene                    |                 | 129  |  |
| Toluene                    |                 | 116  |  |
| Tetrachloroethene          |                 | 100  |  |
| Chlorobenzene              |                 | 108  |  |
| Ethyl Benzene              |                 | 107  |  |
| m,p-Xylene                 |                 | 105  |  |
| o-Xylene                   |                 | 105  |  |
| 1,3-Dichlorobenzene        |                 | 100  |  |
| 1,4-Dichlorobenzene        |                 | 96   |  |
| 1,2-Dichlorobenzene        |                 | 102  |  |
| 1,2,4-Trichlorobenzene     |                 | 100  |  |

### Q = Exceeds Quality Control limits.

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 120       | 70-130 |
| Toluene-d8            | 109       | 70-130 |
| 4-Bromofluorobenzene  | 102       | 70-130 |



### Client Sample ID: LCSD Lab ID#: 1105323-09AA

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

٦

| File Name:<br>Dil. Factor: | w051804 Date of Collection: NA |           |
|----------------------------|--------------------------------|-----------|
| Compound                   |                                | %Pecovery |
| compound                   |                                |           |
| Freon 12                   |                                | 113       |
| Freon 11                   |                                | 145 Q     |
| Freon 113                  |                                | 104       |
| 1,1-Dichloroethene         |                                | 98        |
| Acetone                    |                                | 122       |
| Methylene Chloride         |                                | 100       |
| cis-1,2-Dichloroethene     |                                | 98        |
| 1,1,1-Trichloroethane      |                                | 104       |
| Benzene                    |                                | 130       |
| Toluene                    |                                | 117       |
| Tetrachloroethene          |                                | 100       |
| Chlorobenzene              |                                | 109       |
| Ethyl Benzene              |                                | 108       |
| m,p-Xylene                 |                                | 107       |
| o-Xylene                   |                                | 107       |
| 1,3-Dichlorobenzene        |                                | 104       |
| 1,4-Dichlorobenzene        |                                | 99        |
| 1,2-Dichlorobenzene        |                                | 105       |
| 1,2,4-Trichlorobenzene     |                                | 104       |

### Q = Exceeds Quality Control limits.

| ·····                 |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 123       | 70-130 |  |
| Toluene-d8            | 108       | 70-130 |  |
| 4-Bromofluorobenzene  | 102       | 70-130 |  |



### Client Sample ID: LCS Lab ID#: 1105323-09B

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

| File Name:<br>Dil. Factor: | w051803sim<br>1.00 | Date of Collec<br>Date of Analy | ction: NA<br>sis:  5/18/11 01:50 PM |
|----------------------------|--------------------|---------------------------------|-------------------------------------|
|                            |                    |                                 |                                     |
| Compound                   |                    |                                 | %Recovery                           |
| Vinyl Chloride             |                    |                                 | 121                                 |
| Carbon Tetrachloride       |                    |                                 | 122                                 |
| Trichloroethene            |                    |                                 | 102                                 |
| Container Type: NA - Not   | Applicable         |                                 |                                     |
|                            |                    |                                 | Method                              |
| Surrogates                 |                    | %Recovery                       | Limits                              |
| 1,2-Dichloroethane-d4      |                    | 120                             | 70-130                              |
| Toluene-d8                 |                    | 111                             | 70-130                              |
| 4-Bromofluorobenzene       |                    | 101                             | 70-130                              |



# Client Sample ID: LCSD Lab ID#: 1105323-09BB

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

| File Name:               | w051804sim | Date of Collec | ction: NA             |
|--------------------------|------------|----------------|-----------------------|
| Dil. Factor:             | 1.00       | Date of Analy  | sis: 5/18/11 02:26 PM |
| Compound                 |            |                | %Recovery             |
| Vinyl Chloride           |            |                | 122                   |
| Carbon Tetrachloride     |            |                | 123                   |
| Trichloroethene          |            |                | 102                   |
| Container Type: NA - Not | Applicable |                |                       |
|                          |            |                | Method                |
| Surrogates               |            | %Recovery      | Limits                |
| 1,2-Dichloroethane-d4    |            | 121            | 70-130                |
| Toluene-d8               |            | 112            | 70-130                |
| 4-Bromofluorobenzene     |            | 102            | 70-130                |



8/10/2011 Mr. Brad Green Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: IBM East Fishkill Project #: 2999.00 Workorder #: 1107511A

Dear Mr. Brad Green

The following report includes the data for the above referenced project for sample(s) received on 7/29/2011 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: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott Project Manager

Page 1 of 38



### WORK ORDER #: 1107511A

Work Order Summary

| CLIENT:         | Mr. Brad Green               | BILL TO:         | Accounts Payable           |
|-----------------|------------------------------|------------------|----------------------------|
|                 | Sanborn, Head & Associates   |                  | Sanborn, Head & Associates |
|                 | 20 Foundry Street            |                  | 20 Foundry Street          |
|                 | Concord, NH 03301            |                  | Concord, NH 03301          |
| DUONE           | <i>c</i> 02 <b>22</b> 0 1000 | <b>DO</b> #      |                            |
| PHONE:          | 603-229-1900                 | P.O. #           |                            |
| FAX:            | 603-229-1919                 | <b>PROJECT #</b> | 2999.00 IBM East Fishkill  |
| DATE RECEIVED:  | 07/29/2011                   | CONTACT:         | Ausha Scott                |
| DATE COMPLETED: | 08/10/2011                   |                  |                            |

|            |          |                | RECEIPT    | FINAL    |
|------------|----------|----------------|------------|----------|
| FRACTION # | NAME     | <u>TEST</u>    | VAC./PRES. | PRESSURE |
| 01A        | IA AR-27 | Modified TO-15 | 3.2 "Hg    | 5 psi    |
| 01B        | IA AR-27 | Modified TO-15 | 3.2 "Hg    | 5 psi    |
| 02A        | IA AR-28 | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 02B        | IA AR-28 | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 03A        | IA AP-30 | Modified TO-15 | 5.0 "Hg    | 5 psi    |
| 03B        | IA AP-30 | Modified TO-15 | 5.0 "Hg    | 5 psi    |
| 04A        | IA AY-35 | Modified TO-15 | 5.4 "Hg    | 5 psi    |
| 04B        | IA AY-35 | Modified TO-15 | 5.4 "Hg    | 5 psi    |
| 05A        | IA AY-43 | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 05B        | IA AY-43 | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 06A        | IA BA-28 | Modified TO-15 | 5.6 "Hg    | 5 psi    |
| 06B        | IA BA-28 | Modified TO-15 | 5.6 "Hg    | 5 psi    |
| 07A        | IA BA-39 | Modified TO-15 | 4.8 "Hg    | 5 psi    |
| 07B        | IA BA-39 | Modified TO-15 | 4.8 "Hg    | 5 psi    |
| 08A        | IA BA-44 | Modified TO-15 | 3.6 "Hg    | 5 psi    |
| 08B        | IA BA-44 | Modified TO-15 | 3.6 "Hg    | 5 psi    |
| 09A        | IA BB-24 | Modified TO-15 | 6.0 "Hg    | 5 psi    |

Continued on next page



### WORK ORDER #: 1107511A

Work Order Summary

| CLIENT:         | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:      | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|--|---------------|--|
| PHONE:          | 603-229-1900   | <b>P.O.</b> # |  |
| FAX:            | 603-229-1919   | PROJECT #     | 2999.00 IBM East Fishkill  |
| DATE RECEIVED:  | 07/29/2011   | CONTACT:      | Ausha Scott  |
| DATE COMPLETED: | 08/10/2011   | continent     |  |

|            |             |                | <b>KEUEIP</b> I | FINAL    |
|------------|-------------|----------------|-----------------|----------|
| FRACTION # | <u>NAME</u> | <u>TEST</u>    | VAC./PRES.      | PRESSURE |
| 09B        | IA BB-24    | Modified TO-15 | 6.0 "Hg         | 5 psi    |
| 10A        | IA BB-37    | Modified TO-15 | 5.0 "Hg         | 5 psi    |
| 10B        | IA BB-37    | Modified TO-15 | 5.0 "Hg         | 5 psi    |
| 11A        | Lab Blank   | Modified TO-15 | NA              | NA       |
| 11B        | Lab Blank   | Modified TO-15 | NA              | NA       |
| 12A        | CCV         | Modified TO-15 | NA              | NA       |
| 12B        | CCV         | Modified TO-15 | NA              | NA       |
| 13A        | LCS         | Modified TO-15 | NA              | NA       |
| 13AA       | LCSD        | Modified TO-15 | NA              | NA       |
| 13B        | LCS         | Modified TO-15 | NA              | NA       |
| 13BB       | LCSD        | Modified TO-15 | NA              | NA       |
|            |             |                |                 |          |

CERTIFIED BY:

Sinda d. Fruman

08/10/11 DATE:

DECEIDT

TTNIA T

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12. 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 Air Toxics Ltd.

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



### LABORATORY NARRATIVE Modified TO-15 Full Scan/SIM Sanborn, Head & Associates Workorder# 1107511A

Ten 6 Liter Summa Canister (SIM Certified) samples were received on July 29, 2011. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

### **Receiving Notes**

There were no receiving discrepancies.

### Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.



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

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

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

- J Estimated value.
- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV and/or LCS.
- N The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



### Client Sample ID: IA AR-27

Lab ID#: 1107511A-01A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.15                 | 0.71             | 0.74                  | 3.5               |
| Freon 11          | 0.15                 | 0.62             | 0.84                  | 3.4               |
| Acetone           | 0.75                 | 2.3              | 1.8                   | 5.4               |
| Toluene           | 0.15                 | 0.16             | 0.56                  | 0.61              |
| Tetrachloroethene | 0.15                 | 0.18             | 1.0                   | 1.2               |

### Client Sample ID: IA AR-27

#### Lab ID#: 1107511A-01B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.030      | 0.060  | 0.19       | 0.38    |

### **Client Sample ID: IA AR-28**

#### Lab ID#: 1107511A-02A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.74             | 0.80                  | 3.7               |
| Freon 11          | 0.16                 | 0.71             | 0.91                  | 4.0               |
| Acetone           | 0.81                 | 4.0              | 1.9                   | 9.6               |
| Toluene           | 0.16                 | 0.27             | 0.61                  | 1.0               |
| Tetrachloroethene | 0.16                 | 0.18             | 1.1                   | 1.2               |

### **Client Sample ID: IA AR-28**

#### Lab ID#: 1107511A-02B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.063  | 0.20       | 0.39    |

#### Client Sample ID: IA AP-30

Lab ID#: 1107511A-03A



### **Client Sample ID: IA AP-30**

Lab ID#: 1107511A-03A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.77             | 0.80                  | 3.8               |
| Freon 11          | 0.16                 | 0.73             | 0.90                  | 4.1               |
| Acetone           | 0.80                 | 4.2              | 1.9                   | 10                |
| Toluene           | 0.16                 | 0.27             | 0.61                  | 1.0               |
| Tetrachloroethene | 0.16                 | 0.18             | 1.1                   | 1.2               |

### Client Sample ID: IA AP-30

#### Lab ID#: 1107511A-03B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.063  | 0.20       | 0.40    |

### **Client Sample ID: IA AY-35**

#### Lab ID#: 1107511A-04A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 1.1              | 0.81                  | 5.3               |
| Freon 11          | 0.16                 | 0.54             | 0.92                  | 3.0               |
| Acetone           | 0.82                 | 3.7              | 1.9                   | 8.8               |
| Tetrachloroethene | 0.16                 | 0.39             | 1.1                   | 2.6               |

### **Client Sample ID: IA AY-35**

#### Lab ID#: 1107511A-04B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.033      | 0.065  | 0.20       | 0.41    |

#### **Client Sample ID: IA AY-43**

Lab ID#: 1107511A-05A

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



### **Client Sample ID: IA AY-43**

Lab ID#: 1107511A-05A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.62             | 0.80                  | 3.0               |
| Freon 11          | 0.16                 | 0.43             | 0.91                  | 2.4               |
| Acetone           | 0.81                 | 4.6              | 1.9                   | 11                |
| Toluene           | 0.16                 | 0.19             | 0.61                  | 0.70              |
| Tetrachloroethene | 0.16                 | 0.70             | 1.1                   | 4.7               |

### Client Sample ID: IA AY-43

#### Lab ID#: 1107511A-05B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.058  | 0.20       | 0.36    |

#### **Client Sample ID: IA BA-28**

#### Lab ID#: 1107511A-06A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.53             | 0.82                  | 2.6               |
| Freon 11 | 0.16                 | 0.46             | 0.93                  | 2.6               |
| Acetone  | 0.82                 | 3.6              | 2.0                   | 8.5               |

#### **Client Sample ID: IA BA-28**

### Lab ID#: 1107511A-06B

No Detections Were Found.

### **Client Sample ID: IA BA-39**

### Lab ID#: 1107511A-07A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.52             | 0.79                  | 2.6               |
| Freon 11 | 0.16                 | 0.24             | 0.90                  | 1.4               |
| Acetone  | 0.80                 | 4.8              | 1.9                   | 11                |



| Client Sample ID: IA BA-39                 |                      |                  |                       |                   |
|--|----------------------|------------------|-----------------------|-------------------|
| Lab ID#: 1107511A-07A<br>Tetrachloroethene | 0.16                 | 0.65             | 1.1                   | 4.4               |
| Client Sample ID: IA BA-39                 |                      |                  |                       |                   |
| Lab ID#: 1107511A-07B                      |                      |                  |                       |                   |
| Compound                                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Carbon Tetrachloride                       | 0.032                | 0.057            | 0.20                  | 0.36              |
| Client Sample ID: IA BA-44                 |                      |                  |                       |                   |
| Lab ID#: 1107511A-08A                      |                      |                  |                       |                   |
| Compound                                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                                   | 0.15                 | 0.60             | 0.75                  | 3.0               |
| Freon 11                                   | 0.15                 | 0.42             | 0.85                  | 2.4               |

#### Freon 11 Acetone

Toluene

Tetrachloroethene

### Client Sample ID: IA BA-44

### Lab ID#: 1107511A-08B

| Compound             | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
|                      | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.030      | 0.061  | 0.19       | 0.38    |

0.76

0.15

0.15

5.5

0.22

0.59

1.8

0.57

1.0

13

0.81

4.0

### **Client Sample ID: IA BB-24**

#### Lab ID#: 1107511A-09A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.17                 | 0.52             | 0.83                  | 2.6               |
| Freon 11 | 0.17                 | 0.32             | 0.94                  | 1.8               |
| Acetone  | 0.84                 | 4.3              | 2.0                   | 10                |



### **Client Sample ID: IA BB-24**

#### Lab ID#: 1107511A-09B

| Compound             | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
|                      | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.034      | 0.052  | 0.21       | 0.33    |

### **Client Sample ID: IA BB-37**

### Lab ID#: 1107511A-10A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.62             | 0.80                  | 3.1               |
| Freon 11          | 0.16                 | 0.61             | 0.90                  | 3.4               |
| Acetone           | 0.80                 | 6.0              | 1.9                   | 14                |
| Toluene           | 0.16                 | 0.16 J           | 0.61                  | 0.60 J            |
| Tetrachloroethene | 0.16                 | 4.4              | 1.1                   | 30                |

### **Client Sample ID: IA BB-37**

#### Lab ID#: 1107511A-10B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.054  | 0.20       | 0.34    |
| Trichloroethene      | 0.032      | 0.080  | 0.17       | 0.43    |



### Client Sample ID: IA AR-27 Lab ID#: 1107511A-01A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080108              | Date             | e of Collection: 7/2  | 6/11 3:25:00 PM   |
|------------------------|----------------------|------------------|-----------------------|-------------------|
| Dil. Factor:           | 1.50                 | Date             | e of Analysis: 8/1/1  | 1 01:31 PM        |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.15                 | 0.71             | 0.74                  | 3.5               |
| Freon 11               | 0.15                 | 0.62             | 0.84                  | 3.4               |
| Freon 113              | 0.15                 | Not Detected     | 1.1                   | Not Detected      |
| 1,1-Dichloroethene     | 0.15                 | Not Detected     | 0.59                  | Not Detected      |
| Acetone                | 0.75                 | 2.3              | 1.8                   | 5.4               |
| Methylene Chloride     | 0.30                 | Not Detected     | 1.0                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.15                 | Not Detected     | 0.59                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.15                 | Not Detected     | 0.82                  | Not Detected      |
| Benzene                | 0.15                 | Not Detected     | 0.48                  | Not Detected      |
| Toluene                | 0.15                 | 0.16             | 0.56                  | 0.61              |
| Tetrachloroethene      | 0.15                 | 0.18             | 1.0                   | 1.2               |
| Chlorobenzene          | 0.15                 | Not Detected     | 0.69                  | Not Detected      |
| Ethyl Benzene          | 0.15                 | Not Detected     | 0.65                  | Not Detected      |
| m,p-Xylene             | 0.15                 | Not Detected     | 0.65                  | Not Detected      |
| o-Xylene               | 0.15                 | Not Detected     | 0.65                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.15                 | Not Detected     | 0.90                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.15                 | Not Detected     | 0.90                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.15                 | Not Detected     | 0.90                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.75                 | Not Detected     | 5.6                   | Not Detected      |

|                       | , ,       | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 101       | 70-130 |



### Client Sample ID: IA AR-27 Lab ID#: 1107511A-01B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080108sim<br>1.50   | Date of Collection: 7/26/11 3:25:00 PM<br>Date of Analysis: 8/1/11 01:31 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.015                | Not Detected  | 0.038                 | Not Detected      |
| Carbon Tetrachloride       | 0.030                | 0.060   | 0.19                  | 0.38              |
| Trichloroethene            | 0.030                | Not Detected  | 0.16                  | Not Detected      |

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



### Client Sample ID: IA AR-28 Lab ID#: 1107511A-02A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080109              | Date of Collection: 7/26/11 3:36:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.62                 | Date of Analysis: 8/1/11 02:06 PM      |                       |                   |
| Compound               | Rpt. Limit<br>(ppby) | Amount<br>(ppby)                       | Rpt. Limit<br>(ua/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.74                                   | 0.80                  | 37                |
| Freon 11               | 0.16                 | 0.71                                   | 0.91                  | 4.0               |
| Freon 113              | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| Acetone                | 0.81                 | 4.0                                    | 1.9                   | 9.6               |
| Methylene Chloride     | 0.32                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.88                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.52                  | Not Detected      |
| Toluene                | 0.16                 | 0.27                                   | 0.61                  | 1.0               |
| Tetrachloroethene      | 0.16                 | 0.18                                   | 1.1                   | 1.2               |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.74                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.81                 | Not Detected                           | 6.0                   | Not Detected      |

|                       | , ,       | Method<br>Limits |  |
|-----------------------|-----------|------------------|--|
| Surrogates            | %Recovery |                  |  |
| 1,2-Dichloroethane-d4 | 98        | 70-130           |  |
| Toluene-d8            | 99        | 70-130           |  |
| 4-Bromofluorobenzene  | 100       | 70-130           |  |


# Client Sample ID: IA AR-28 Lab ID#: 1107511A-02B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080109sim<br>1.62   | D9sim         Date of Collection: 7/26/11 3:36:00 PM           1.62         Date of Analysis: 8/1/11 02:06 PM |                       | 26/11 3:36:00 PM<br>1 02:06 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.041                 | Not Detected                   |
| Carbon Tetrachloride       | 0.032                | 0.063   | 0.20                  | 0.39                           |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected                   |

|                       | (         | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 103       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 101       | 70-130 |



# Client Sample ID: IA AP-30 Lab ID#: 1107511A-03A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080110<br>1.61      | Date of Collection: 7/26/11 4:00:00 PM<br>Date of Analysis: 8/1/11 02:41 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.77  | 0.80                  | 3.8               |
| Freon 11                   | 0.16                 | 0.73  | 0.90                  | 4.1               |
| Freon 113                  | 0.16                 | Not Detected  | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected  | 0.64                  | Not Detected      |
| Acetone                    | 0.80                 | 4.2   | 1.9                   | 10                |
| Methylene Chloride         | 0.32                 | Not Detected  | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected  | 0.64                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected  | 0.88                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected  | 0.51                  | Not Detected      |
| Toluene                    | 0.16                 | 0.27  | 0.61                  | 1.0               |
| Tetrachloroethene          | 0.16                 | 0.18  | 1.1                   | 1.2               |
| Chlorobenzene              | 0.16                 | Not Detected  | 0.74                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected  | 0.70                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected  | 0.70                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected  | 0.70                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected  | 0.97                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected  | 0.97                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected  | 0.97                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.80                 | Not Detected  | 6.0                   | Not Detected      |

|                       | · · · · · | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 100       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 101       | 70-130 |  |



# Client Sample ID: IA AP-30 Lab ID#: 1107511A-03B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080110sim<br>1.61   | IOsim         Date of Collection: 7/26/11 4:00:00 PM           1.61         Date of Analysis: 8/1/11 02:41 PM |                       | 26/11 4:00:00 PM<br>1 02:41 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.041                 | Not Detected                   |
| Carbon Tetrachloride       | 0.032                | 0.063   | 0.20                  | 0.40                           |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected                   |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 104       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



# Client Sample ID: IA AY-35 Lab ID#: 1107511A-04A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080111              | a080111 Date of Collection: 7/26/11 4:35:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| DII. FACTOF:           | 1.63                 | Date   | or Analysis: 8/1/1    | 1 04:01 PM        |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                               | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 1.1  | 0.81                  | 5.3               |
| Freon 11               | 0.16                 | 0.54   | 0.92                  | 3.0               |
| Freon 113              | 0.16                 | Not Detected                                   | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                                   | 0.65                  | Not Detected      |
| Acetone                | 0.82                 | 3.7  | 1.9                   | 8.8               |
| Methylene Chloride     | 0.33                 | Not Detected                                   | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                                   | 0.65                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                                   | 0.89                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                                   | 0.52                  | Not Detected      |
| Toluene                | 0.16                 | Not Detected                                   | 0.61                  | Not Detected      |
| Tetrachloroethene      | 0.16                 | 0.39   | 1.1                   | 2.6               |
| Chlorobenzene          | 0.16                 | Not Detected                                   | 0.75                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                                   | 0.71                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                                   | 0.71                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                                   | 0.71                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                                   | 0.98                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                                   | 0.98                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                                   | 0.98                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.82                 | Not Detected                                   | 6.0                   | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 93        | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



# Client Sample ID: IA AY-35 Lab ID#: 1107511A-04B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080111sim<br>1.63   | Date of Collection: 7/26/11 4:35:00 PM<br>Date of Analysis: 8/1/11 04:01 PM |                       | 26/11 4:35:00 PM<br>1 04:01 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.042                 | Not Detected                   |
| Carbon Tetrachloride       | 0.033                | 0.065   | 0.20                  | 0.41                           |
| Trichloroethene            | 0.033                | Not Detected  | 0.18                  | Not Detected                   |

|                       | (         | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: IA AY-43 Lab ID#: 1107511A-05A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080112<br>1.62      | Date of Collection: 7/26/11 5:05:00 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.62                                   | 0.80                  | 3.0               |
| Freon 11                   | 0.16                 | 0.43                                   | 0.91                  | 2.4               |
| Freon 113                  | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| Acetone                    | 0.81                 | 4.6                                    | 1.9                   | 11                |
| Methylene Chloride         | 0.32                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected                           | 0.88                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected                           | 0.52                  | Not Detected      |
| Toluene                    | 0.16                 | 0.19                                   | 0.61                  | 0.70              |
| Tetrachloroethene          | 0.16                 | 0.70                                   | 1.1                   | 4.7               |
| Chlorobenzene              | 0.16                 | Not Detected                           | 0.74                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.81                 | Not Detected                           | 6.0                   | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |
| Toluene-d8            | 98        | 70-130 |
| 4-Bromofluorobenzene  | 99        | 70-130 |



# Client Sample ID: IA AY-43 Lab ID#: 1107511A-05B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080112sim<br>1.62   | a080112sim Date of Collection: 7/26/11 5:05:00 Pl<br>1.62 Date of Analysis: 8/1/11 04:36 PM |                       | 26/11 5:05:00 PM<br>1 04:36 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.041                 | Not Detected                   |
| Carbon Tetrachloride       | 0.032                | 0.058   | 0.20                  | 0.36                           |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected                   |

|                       | (0        | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 100       | 70-130 |
| Toluene-d8            | 98        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: IA BA-28 Lab ID#: 1107511A-06A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080113              | Date of Collection: 7/26/11 3:35:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.65                 | Date of Analysis: 8/1/11 05:28 PM      |                       |                   |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.53                                   | 0.82                  | 2.6               |
| Freon 11               | 0.16                 | 0.46                                   | 0.93                  | 2.6               |
| Freon 113              | 0.16                 | Not Detected                           | 1.3                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.65                  | Not Detected      |
| Acetone                | 0.82                 | 3.6                                    | 2.0                   | 8.5               |
| Methylene Chloride     | 0.33                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.65                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.90                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.53                  | Not Detected      |
| Toluene                | 0.16                 | Not Detected                           | 0.62                  | Not Detected      |
| Tetrachloroethene      | 0.16                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.76                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.99                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.99                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.99                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.82                 | Not Detected                           | 6.1                   | Not Detected      |

|                       | , , , , , , , , , , , , , , , , , , , | Method |  |
|-----------------------|---------------------------------------|--------|--|
| Surrogates            | %Recovery                             | Limits |  |
| 1,2-Dichloroethane-d4 | 96                                    | 70-130 |  |
| Toluene-d8            | 99                                    | 70-130 |  |
| 4-Bromofluorobenzene  | 100                                   | 70-130 |  |



# Client Sample ID: IA BA-28 Lab ID#: 1107511A-06B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080113sim<br>1.65   | n Date of Collection: 7/26/11 3:35:00 PM<br>5 Date of Analysis: 8/1/11 05:28 PM |                       | 6/11 3:35:00 PM<br>1 05:28 PM |
|----------------------------|----------------------|---|-----------------------|-------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)             |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.042                 | Not Detected                  |
| Carbon Tetrachloride       | 0.033                | Not Detected  | 0.21                  | Not Detected                  |
| Trichloroethene            | 0.033                | Not Detected  | 0.18                  | Not Detected                  |

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



# Client Sample ID: IA BA-39 Lab ID#: 1107511A-07A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080114              | Date of Collection: 7/26/11 3:05:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.60                 | Date of Analysis: 8/1/11 06:03 PM      |                       |                   |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.52                                   | 0.79                  | 2.6               |
| Freon 11               | 0.16                 | 0.24                                   | 0.90                  | 1.4               |
| Freon 113              | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.63                  | Not Detected      |
| Acetone                | 0.80                 | 4.8                                    | 1.9                   | 11                |
| Methylene Chloride     | 0.32                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.63                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.87                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.51                  | Not Detected      |
| Toluene                | 0.16                 | Not Detected                           | 0.60                  | Not Detected      |
| Tetrachloroethene      | 0.16                 | 0.65                                   | 1.1                   | 4.4               |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.74                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.69                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.69                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.69                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.96                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.96                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.96                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.80                 | Not Detected                           | 5.9                   | Not Detected      |

|                       | , ,       | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 98        | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



# Client Sample ID: IA BA-39 Lab ID#: 1107511A-07B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080114sim Date of Collection: 7/26/11 3:05:00 F<br>1.60 Date of Analysis: 8/1/11 06:03 PM |                  | 26/11 3:05:00 PM<br>1 06:03 PM |                   |
|----------------------------|--|------------------|--------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)          | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016  | Not Detected     | 0.041                          | Not Detected      |
| Carbon Tetrachloride       | 0.032  | 0.057            | 0.20                           | 0.36              |
| Trichloroethene            | 0.032  | Not Detected     | 0.17                           | Not Detected      |

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



# Client Sample ID: IA BA-44 Lab ID#: 1107511A-08A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080115              | Date of Collection: 7/26/11 5:10:00 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.15                 | 0.60                                   | 0.75                  | 3.0               |
| Freon 11                   | 0.15                 | 0.42                                   | 0.85                  | 2.4               |
| Freon 113                  | 0.15                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.15                 | Not Detected                           | 0.60                  | Not Detected      |
| Acetone                    | 0.76                 | 5.5                                    | 1.8                   | 13                |
| Methylene Chloride         | 0.30                 | Not Detected                           | 1.0                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.15                 | Not Detected                           | 0.60                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.15                 | Not Detected                           | 0.83                  | Not Detected      |
| Benzene                    | 0.15                 | Not Detected                           | 0.48                  | Not Detected      |
| Toluene                    | 0.15                 | 0.22                                   | 0.57                  | 0.81              |
| Tetrachloroethene          | 0.15                 | 0.59                                   | 1.0                   | 4.0               |
| Chlorobenzene              | 0.15                 | Not Detected                           | 0.70                  | Not Detected      |
| Ethyl Benzene              | 0.15                 | Not Detected                           | 0.66                  | Not Detected      |
| m,p-Xylene                 | 0.15                 | Not Detected                           | 0.66                  | Not Detected      |
| o-Xylene                   | 0.15                 | Not Detected                           | 0.66                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.15                 | Not Detected                           | 0.91                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.15                 | Not Detected                           | 0.91                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.15                 | Not Detected                           | 0.91                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.76                 | Not Detected                           | 5.6                   | Not Detected      |

|                       | · · · · · | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |  |
| Toluene-d8            | 98        | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



# Client Sample ID: IA BA-44 Lab ID#: 1107511A-08B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080115sim<br>1.52   | a080115sim Date of Collection: 7/26/11 5:10:00 Pl<br>1.52 Date of Analysis: 8/1/11 06:38 PM |                       | 26/11 5:10:00 PM<br>1 06:38 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.015                | Not Detected  | 0.039                 | Not Detected                   |
| Carbon Tetrachloride       | 0.030                | 0.061   | 0.19                  | 0.38                           |
| Trichloroethene            | 0.030                | Not Detected  | 0.16                  | Not Detected                   |

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



# Client Sample ID: IA BB-24 Lab ID#: 1107511A-09A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080116              | Date of Collection: 7/26/11 4:07:00 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | 0.52                                   | 0.83                  | 2.6               |
| Freon 11                   | 0.17                 | 0.32                                   | 0.94                  | 1.8               |
| Freon 113                  | 0.17                 | Not Detected                           | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected                           | 0.67                  | Not Detected      |
| Acetone                    | 0.84                 | 4.3                                    | 2.0                   | 10                |
| Methylene Chloride         | 0.34                 | Not Detected                           | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected                           | 0.67                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected                           | 0.92                  | Not Detected      |
| Benzene                    | 0.17                 | Not Detected                           | 0.54                  | Not Detected      |
| Toluene                    | 0.17                 | Not Detected                           | 0.63                  | Not Detected      |
| Tetrachloroethene          | 0.17                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene              | 0.17                 | Not Detected                           | 0.77                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected                           | 0.73                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | Not Detected                           | 0.73                  | Not Detected      |
| o-Xylene                   | 0.17                 | Not Detected                           | 0.73                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected                           | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected                           | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected                           | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.84                 | Not Detected                           | 6.2                   | Not Detected      |

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



# Client Sample ID: IA BB-24 Lab ID#: 1107511A-09B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080116sim Date of Collection: 7/26/11 4:07:00 PM<br>1.68 Date of Analysis: 8/1/11 07:13 PM |                  | 26/11 4:07:00 PM<br>1 07:13 PM |                   |
|----------------------------|---|------------------|--------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)  | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)          | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.017   | Not Detected     | 0.043                          | Not Detected      |
| Carbon Tetrachloride       | 0.034   | 0.052            | 0.21                           | 0.33              |
| Trichloroethene            | 0.034   | Not Detected     | 0.18                           | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: IA BB-37 Lab ID#: 1107511A-10A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080117           | Date of Collection: 7/26/11 4:45:00 PM |         |              |
|------------------------|-------------------|--|---------|--------------|
|                        | 1.01<br>Dat Limit | Date of Analysis: 8/1/11 07:48 PM      |         |              |
| Compound               | (ppbv)            | (ppbv)                                 | (ug/m3) | (ug/m3)      |
| Freon 12               | 0.16              | 0.62                                   | 0.80    | 3.1          |
| Freon 11               | 0.16              | 0.61                                   | 0.90    | 3.4          |
| Freon 113              | 0.16              | Not Detected                           | 1.2     | Not Detected |
| 1,1-Dichloroethene     | 0.16              | Not Detected                           | 0.64    | Not Detected |
| Acetone                | 0.80              | 6.0                                    | 1.9     | 14           |
| Methylene Chloride     | 0.32              | Not Detected                           | 1.1     | Not Detected |
| cis-1,2-Dichloroethene | 0.16              | Not Detected                           | 0.64    | Not Detected |
| 1,1,1-Trichloroethane  | 0.16              | Not Detected                           | 0.88    | Not Detected |
| Benzene                | 0.16              | Not Detected                           | 0.51    | Not Detected |
| Toluene                | 0.16              | 0.16 J                                 | 0.61    | 0.60 J       |
| Tetrachloroethene      | 0.16              | 4.4                                    | 1.1     | 30           |
| Chlorobenzene          | 0.16              | Not Detected                           | 0.74    | Not Detected |
| Ethyl Benzene          | 0.16              | Not Detected                           | 0.70    | Not Detected |
| m,p-Xylene             | 0.16              | Not Detected                           | 0.70    | Not Detected |
| o-Xylene               | 0.16              | Not Detected                           | 0.70    | Not Detected |
| 1,3-Dichlorobenzene    | 0.16              | Not Detected                           | 0.97    | Not Detected |
| 1,4-Dichlorobenzene    | 0.16              | Not Detected                           | 0.97    | Not Detected |
| 1,2-Dichlorobenzene    | 0.16              | Not Detected                           | 0.97    | Not Detected |
| 1,2,4-Trichlorobenzene | 0.80              | Not Detected                           | 6.0     | Not Detected |

J = Estimated value.

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |  |
| Toluene-d8            | 98        | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



# Client Sample ID: IA BB-37 Lab ID#: 1107511A-10B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080117sim<br>1.61   | Date of Collection: 7/26/11 4:45:00 PM<br>Date of Analysis: 8/1/11 07:48 PM |                       | 6/11 4:45:00 PM<br>1 07:48 PM |
|----------------------------|----------------------|---|-----------------------|-------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)             |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.041                 | Not Detected                  |
| Carbon Tetrachloride       | 0.032                | 0.054   | 0.20                  | 0.34                          |
| Trichloroethene            | 0.032                | 0.080   | 0.17                  | 0.43                          |

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



# Client Sample ID: Lab Blank Lab ID#: 1107511A-11A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080106<br>1.00      | Date of Collection: NA |                       |                   |
|----------------------------|----------------------|------------------------|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.10                 | Not Detected           | 0.49                  | Not Detected      |
| Freon 11                   | 0.10                 | Not Detected           | 0.56                  | Not Detected      |
| Freon 113                  | 0.10                 | Not Detected           | 0.77                  | Not Detected      |
| 1,1-Dichloroethene         | 0.10                 | Not Detected           | 0.40                  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected           | 1.2                   | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected           | 0.69                  | Not Detected      |
| cis-1,2-Dichloroethene     | 0.10                 | Not Detected           | 0.40                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.10                 | Not Detected           | 0.54                  | Not Detected      |
| Benzene                    | 0.10                 | Not Detected           | 0.32                  | Not Detected      |
| Toluene                    | 0.10                 | Not Detected           | 0.38                  | Not Detected      |
| Tetrachloroethene          | 0.10                 | Not Detected           | 0.68                  | Not Detected      |
| Chlorobenzene              | 0.10                 | Not Detected           | 0.46                  | Not Detected      |
| Ethyl Benzene              | 0.10                 | Not Detected           | 0.43                  | Not Detected      |
| m,p-Xylene                 | 0.10                 | Not Detected           | 0.43                  | Not Detected      |
| o-Xylene                   | 0.10                 | Not Detected           | 0.43                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.10                 | Not Detected           | 0.60                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.10                 | Not Detected           | 0.60                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.10                 | Not Detected           | 0.60                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.50                 | Not Detected           | 3.7                   | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 97        | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 101       | 70-130 |  |



# Client Sample ID: Lab Blank Lab ID#: 1107511A-11B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:           | a080106sim | Date of Collection: NA            |            | 1 11:01 AM   |
|----------------------|------------|-----------------------------------|------------|--------------|
| Dil. Factor:         | 1.00       | Date of Analysis: 8/1/11 11:01 AM |            |              |
| Compound             | Rpt. Limit | Amount                            | Rpt. Limit | Amount       |
|                      | (ppbv)     | (ppbv)                            | (ug/m3)    | (ug/m3)      |
| Vinyl Chloride       | 0.010      | Not Detected                      | 0.026      | Not Detected |
| Carbon Tetrachloride | 0.020      | Not Detected                      | 0.12       | Not Detected |
| Trichloroethene      | 0.020      | Not Detected                      | 0.11       | Not Detected |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 101       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



# Client Sample ID: CCV Lab ID#: 1107511A-12A

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

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| File Name:             | a080102 | Date of Collection: NA            |  |
|------------------------|---------|-----------------------------------|--|
| DII. Factor:           | 1.00    | Date of Analysis: 8/1/11 08:39 AM |  |
| Compound               |         | %Recovery                         |  |
| Freon 12               |         | 101                               |  |
| Freon 11               |         | 99                                |  |
| Freon 113              |         | 90                                |  |
| 1,1-Dichloroethene     |         | 87                                |  |
| Acetone                |         | 97                                |  |
| Methylene Chloride     |         | 89                                |  |
| cis-1,2-Dichloroethene |         | 87                                |  |
| 1,1,1-Trichloroethane  |         | 88                                |  |
| Benzene                |         | 96                                |  |
| Toluene                |         | 93                                |  |
| Tetrachloroethene      |         | 89                                |  |
| Chlorobenzene          |         | 89                                |  |
| Ethyl Benzene          |         | 90                                |  |
| m,p-Xylene             |         | 88                                |  |
| o-Xylene               |         | 90                                |  |
| 1,3-Dichlorobenzene    |         | 82                                |  |
| 1,4-Dichlorobenzene    |         | 82                                |  |
| 1,2-Dichlorobenzene    |         | 79                                |  |
| 1,2,4-Trichlorobenzene |         | 76                                |  |

| 21 11                 |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |
| Toluene-d8            | 101       | 70-130 |
| 4-Bromofluorobenzene  | 103       | 70-130 |



# Client Sample ID: CCV Lab ID#: 1107511A-12B

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

| File Name:               | a080102sim | Date of Collec | ction: NA            |
|--------------------------|------------|----------------|----------------------|
| Dil. Factor:             | 1.00       | Date of Analy  | sis: 8/1/11 08:39 AM |
| 0                        |            |                |                      |
| Compound                 |            |                | %Recovery            |
| Vinyl Chloride           |            |                | 101                  |
| Carbon Tetrachloride     |            |                | 99                   |
| Trichloroethene          |            |                | 84                   |
| Container Type: NA - Not | Applicable |                |                      |
|                          |            |                | Method               |
| Surrogates               |            | %Recovery      | Limits               |
| 1,2-Dichloroethane-d4    |            | 103            | 70-130               |
| Toluene-d8               |            | 101            | 70-130               |
| 4-Bromofluorobenzene     |            | 102            | 70-130               |



# Client Sample ID: LCS Lab ID#: 1107511A-13A

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

٦

| File Name:             | a080103 | Date of Collection: NA            |  |
|------------------------|---------|-----------------------------------|--|
|                        | 1.00    | Date of Analysis: 8/1/11 09:16 AM |  |
| Compound               |         | %Recovery                         |  |
| Freon 12               |         | 99                                |  |
| Freon 11               |         | 99                                |  |
| Freon 113              |         | 93                                |  |
| 1,1-Dichloroethene     |         | 92                                |  |
| Acetone                |         | 98                                |  |
| Methylene Chloride     |         | 86                                |  |
| cis-1,2-Dichloroethene |         | 89                                |  |
| 1,1,1-Trichloroethane  |         | 93                                |  |
| Benzene                |         | 96                                |  |
| Toluene                |         | 92                                |  |
| Tetrachloroethene      |         | 90                                |  |
| Chlorobenzene          |         | 92                                |  |
| Ethyl Benzene          |         | 91                                |  |
| m,p-Xylene             |         | 91                                |  |
| o-Xylene               |         | 92                                |  |
| 1,3-Dichlorobenzene    |         | 87                                |  |
| 1,4-Dichlorobenzene    |         | 88                                |  |
| 1,2-Dichlorobenzene    |         | 85                                |  |
| 1,2,4-Trichlorobenzene |         | 110                               |  |

| 21 11                 |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 103       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 102       | 70-130 |



# Client Sample ID: LCSD Lab ID#: 1107511A-13AA

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

٦

| File Name:             | a080104 | Date of Collection: NA            |
|------------------------|---------|-----------------------------------|
| Dil. Factor: 1.00      |         | Date of Analysis: 8/1/11 09:52 AM |
| Compound               |         | %Recovery                         |
| Freon 12               |         | 100                               |
| Freon 11               |         | 101                               |
| Freon 113              |         | 94                                |
| 1,1-Dichloroethene     |         | 94                                |
| Acetone                |         | 99                                |
| Methylene Chloride     |         | 87                                |
| cis-1,2-Dichloroethene |         | 90                                |
| 1,1,1-Trichloroethane  |         | 95                                |
| Benzene                |         | 100                               |
| Toluene                |         | 96                                |
| Tetrachloroethene      |         | 93                                |
| Chlorobenzene          |         | 95                                |
| Ethyl Benzene          |         | 94                                |
| m,p-Xylene             |         | 95                                |
| o-Xylene               |         | 96                                |
| 1,3-Dichlorobenzene    |         | 91                                |
| 1,4-Dichlorobenzene    |         | 92                                |
| 1,2-Dichlorobenzene    |         | 89                                |
| 1,2,4-Trichlorobenzene |         | 113                               |
| Carbon Tetrachloride   |         | 102                               |
| Vinyl Chloride         |         | 102                               |
| Trichloroethene        |         | 94                                |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 101       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 102       | 70-130 |  |



# Client Sample ID: LCS Lab ID#: 1107511A-13B

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

| File Name:<br>Dil. Factor: | a080103sim<br>1.00 | Date of Collect<br>Date of Analy | Date of Collection: NA<br>Date of Analysis: 8/1/11 09:16 AM |  |
|----------------------------|--------------------|----------------------------------|---|--|
| Compound                   |                    |                                  | %Recovery   |  |
| Vinyl Chloride             |                    |                                  | 103   |  |
| Carbon Tetrachloride       |                    |                                  | 106   |  |
| Trichloroethene            |                    |                                  | 86  |  |
| Container Type: NA - Not   | Applicable         |                                  |   |  |
| _                          |                    |                                  | Method  |  |
| Surrogates                 |                    | %Recovery                        | Limits  |  |
| 1,2-Dichloroethane-d4      |                    | 108                              | 70-130  |  |
| Toluene-d8                 |                    | 100                              | 70-130  |  |
| 4-Bromofluorobenzene       |                    | 102                              | 70-130  |  |



# Client Sample ID: LCSD Lab ID#: 1107511A-13BB

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

| File Name:               | a080104sim | Date of Collec | ction: NA            |
|--------------------------|------------|----------------|----------------------|
| Dil. Factor:             | 1.00       | Date of Analy  | sis: 8/1/11 09:52 AM |
|                          |            |                |                      |
| Compound                 |            |                | %Recovery            |
| Vinyl Chloride           |            |                | 104                  |
| Carbon Tetrachloride     |            |                | 109                  |
| Trichloroethene          |            |                | 89                   |
| Container Type: NA - Not | Applicable |                |                      |
|                          |            |                | Method               |
| Surrogates               |            | %Recovery      | Limits               |
| 1,2-Dichloroethane-d4    |            | 106            | 70-130               |
| Toluene-d8               |            | 101            | 70-130               |
| 4-Bromofluorobenzene     |            | 102            | 70-130               |



8/11/2011 Mr. Brad Green Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: IBM East Fishkill Project #: 2999.00 Workorder #: 1107511B

Dear Mr. Brad Green

The following report includes the data for the above referenced project for sample(s) received on 7/29/2011 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: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott Project Manager

Page 1 of 38



# WORK ORDER #: 1107511B

Work Order Summary

| CLIENT:         | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:         | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|--|------------------|--|
| PHONE:          | 603-229-1900   | P.O. #           |  |
| FAX:            | 603-229-1919   | <b>PROJECT</b> # | 2999.00 IBM East Fishkill  |
| DATE RECEIVED:  | 07/29/2011   | CONTACT          | Ausha Scott  |
| DATE COMPLETED: | 08/11/2011   | contact.         | Ausia Scott  |

|          |  | RECEIPT  | FINAL   |
|----------|--|--|---|
| NAME     | <u>TEST</u>  | VAC./PRES.   | PRESSURE  |
| IA BB-39 | Modified TO-15   | 5.4 "Hg  | 5 psi   |
| IA BB-39 | Modified TO-15   | 5.4 "Hg  | 5 psi   |
| DUP34437 | Modified TO-15   | 4.6 "Hg  | 5 psi   |
| DUP34437 | Modified TO-15   | 4.6 "Hg  | 5 psi   |
| IA BB-40 | Modified TO-15   | 4.8 "Hg  | 5 psi   |
| IA BB-40 | Modified TO-15   | 4.8 "Hg  | 5 psi   |
| IA BC-32 | Modified TO-15   | 4.0 "Hg  | 5 psi   |
| IA BC-32 | Modified TO-15   | 4.0 "Hg  | 5 psi   |
| IA BD-25 | Modified TO-15   | 4.4 "Hg  | 5 psi   |
| IA BD-25 | Modified TO-15   | 4.4 "Hg  | 5 psi   |
| IA BE-23 | Modified TO-15   | 3.8 "Hg  | 5 psi   |
| IA BE-23 | Modified TO-15   | 3.8 "Hg  | 5 psi   |
| IA BE-28 | Modified TO-15   | 5.0 "Hg  | 5 psi   |
| IA BE-28 | Modified TO-15   | 5.0 "Hg  | 5 psi   |
| IA BF-24 | Modified TO-15   | 4.8 "Hg  | 5 psi   |
| IA BF-24 | Modified TO-15   | 4.8 "Hg  | 5 psi   |
| DUP23989 | Modified TO-15   | 5.6 "Hg  | 5 psi   |
|          | NAME         IA BB-39         IA BB-39         DUP34437         DUP34437         IA BB-40         IA BB-40         IA BC-32         IA BC-32         IA BD-25         IA BE-23         IA BE-28         IA BF-24         IA BF-24         DUP23989 | NAMETESTIA BB-39Modified TO-15IA BB-39Modified TO-15DUP34437Modified TO-15DUP34437Modified TO-15IA BB-40Modified TO-15IA BB-40Modified TO-15IA BC-32Modified TO-15IA BC-32Modified TO-15IA BD-25Modified TO-15IA BE-23Modified TO-15IA BE-23Modified TO-15IA BE-28Modified TO-15IA BE-28Modified TO-15IA BF-24Modified TO-15IA BF-24Modified TO-15IA BF-24Modified TO-15DUP23989Modified TO-15 | NAMETESTVAC/PRES.IA BB-39Modified TO-155.4 "HgIA BB-39Modified TO-155.4 "HgDUP34437Modified TO-154.6 "HgDUP34437Modified TO-154.6 "HgIA BB-40Modified TO-154.8 "HgIA BB-40Modified TO-154.8 "HgIA BC-32Modified TO-154.0 "HgIA BC-32Modified TO-154.0 "HgIA BD-25Modified TO-154.4 "HgIA BD-25Modified TO-153.8 "HgIA BE-23Modified TO-153.8 "HgIA BE-23Modified TO-155.0 "HgIA BE-28Modified TO-155.0 "HgIA BF-24Modified TO-154.8 "HgIA BF-24Modified TO-154.8 "HgIA BF-24Modified TO-154.8 "HgIA BF-24Modified TO-154.8 "HgDUP23989Modified TO-155.6 "Hg |

Continued on next page



# WORK ORDER #: 1107511B

#### Work Order Summary

| CLIENT:         | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:      | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|--|---------------|--|
| PHONE:          | 603-229-1900   | <b>P.O.</b> # |  |
| FAX:            | 603-229-1919   | PROJECT #     | 2999.00 IBM East Fishkill  |
| DATE RECEIVED:  | 07/29/2011   | CONTACT:      | Ausha Scott  |
| DATE COMPLETED: | 08/11/2011   |               |  |

|            |             |                | KECEH I    | FINAL    |
|------------|-------------|----------------|------------|----------|
| FRACTION # | <u>NAME</u> | <u>TEST</u>    | VAC./PRES. | PRESSURE |
| 19B        | DUP23989    | Modified TO-15 | 5.6 "Hg    | 5 psi    |
| 20A        | IA BF-34    | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 20B        | IA BF-34    | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 21A        | Lab Blank   | Modified TO-15 | NA         | NA       |
| 21B        | Lab Blank   | Modified TO-15 | NA         | NA       |
| 22A        | CCV         | Modified TO-15 | NA         | NA       |
| 22B        | CCV         | Modified TO-15 | NA         | NA       |
| 23A        | LCS         | Modified TO-15 | NA         | NA       |
| 23AA       | LCSD        | Modified TO-15 | NA         | NA       |
| 23B        | LCS         | Modified TO-15 | NA         | NA       |
| 23BB       | LCSD        | Modified TO-15 | NA         | NA       |
|            |             |                |            |          |

CERTIFIED BY:

Sinda d. Fruman

08/11/11 DATE:

DECEIDT

**FINAT** 

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12. 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 Air Toxics Ltd.

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



# LABORATORY NARRATIVE Modified TO-15 Full Scan/SIM Sanborn, Head & Associates Workorder# 1107511B

Ten 6 Liter Summa Canister (SIM Certified) samples were received on July 29, 2011. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

# **Receiving Notes**

There were no receiving discrepancies.

# **Analytical Notes**

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.



# **Definition of Data Qualifying Flags**

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

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

- J Estimated value.
- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV and/or LCS.
- N The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



# **Client Sample ID: IA BB-39**

#### Lab ID#: 1107511B-11A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.60             | 0.81                  | 3.0               |
| Freon 11          | 0.16                 | 0.26             | 0.92                  | 1.4               |
| Acetone           | 0.82                 | 3.4              | 1.9                   | 8.2               |
| Toluene           | 0.16                 | 0.17             | 0.61                  | 0.64              |
| Tetrachloroethene | 0.16                 | 0.61             | 1.1                   | 4.2               |

# **Client Sample ID: IA BB-39**

#### Lab ID#: 1107511B-11B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.033      | 0.073  | 0.20       | 0.46    |

### Client Sample ID: DUP34437

#### Lab ID#: 1107511B-12A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.57             | 0.78                  | 2.8               |
| Freon 11 | 0.16                 | 0.24             | 0.89                  | 1.4               |
| Acetone  | 0.79                 | 3.6              | 1.9                   | 8.6               |

### Client Sample ID: DUP34437

#### Lab ID#: 1107511B-12B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.054  | 0.20       | 0.34    |

## **Client Sample ID: IA BB-40**

#### Lab ID#: 1107511B-13A

| Compound | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------|------------|--------|------------|---------|
|          | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Freon 12 | 0.16       | 0.59   | 0.79       | 2.9     |



# **Client Sample ID: IA BB-40**

| 0.16 | 0.28                 | 0.90                    | 1.6                               |
|------|----------------------|-------------------------|-----------------------------------|
| 0.80 | 4.7                  | 1.9                     | 11                                |
| 0.16 | 0.31                 | 1.1                     | 2.1                               |
|      | 0.16<br>0.80<br>0.16 | 0.160.280.804.70.160.31 | 0.160.280.900.804.71.90.160.311.1 |

# **Client Sample ID: IA BB-40**

#### Lab ID#: 1107511B-13B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.082  | 0.20       | 0.52    |

## **Client Sample ID: IA BC-32**

#### Lab ID#: 1107511B-14A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.64             | 0.77                  | 3.2               |
| Freon 11          | 0.16                 | 0.88             | 0.87                  | 5.0               |
| Acetone           | 0.78                 | 4.1              | 1.8                   | 9.8               |
| Tetrachloroethene | 0.16                 | 0.66             | 1.0                   | 4.5               |

# **Client Sample ID: IA BC-32**

#### Lab ID#: 1107511B-14B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.031      | 0.084  | 0.20       | 0.53    |

# Client Sample ID: IA BD-25

#### Lab ID#: 1107511B-15A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.50             | 0.78                  | 2.5               |
| Freon 11 | 0.16                 | 0.21             | 0.88                  | 1.2               |
| Acetone  | 0.78                 | 3.2              | 1.9                   | 7.5               |



# **Client Sample ID: IA BD-25**

Lab ID#: 1107511B-15B

| Compound             | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
|                      | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.031      | 0.070  | 0.20       | 0.44    |

### **Client Sample ID: IA BE-23**

### Lab ID#: 1107511B-16A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.15                 | 0.47             | 0.76                  | 2.3               |
| Freon 11 | 0.15                 | 0.26             | 0.86                  | 1.5               |
| Acetone  | 0.76                 | 3.1              | 1.8                   | 7.4               |

#### **Client Sample ID: IA BE-23**

#### Lab ID#: 1107511B-16B

| <b>0</b>             | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (pppv)     | (vaqq) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.031      | 0.069  | 0.19       | 0.43    |

# **Client Sample ID: IA BE-28**

## Lab ID#: 1107511B-17A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.52             | 0.80                  | 2.6               |
| Freon 11          | 0.16                 | 0.38             | 0.90                  | 2.1               |
| Acetone           | 0.80                 | 3.2              | 1.9                   | 7.7               |
| Tetrachloroethene | 0.16                 | 0.48             | 1.1                   | 3.3               |

#### **Client Sample ID: IA BE-28**

## Lab ID#: 1107511B-17B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.072  | 0.20       | 0.45    |



# Client Sample ID: IA BF-24

Lab ID#: 1107511B-18A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.50             | 0.79                  | 2.4               |
| Freon 11 | 0.16                 | 0.26             | 0.90                  | 1.5               |
| Acetone  | 0.80                 | 3.1              | 1.9                   | 7.3               |

# **Client Sample ID: IA BF-24**

#### Lab ID#: 1107511B-18B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.077  | 0.20       | 0.48    |

## Client Sample ID: DUP23989

#### Lab ID#: 1107511B-19A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.52             | 0.82                  | 2.5               |
| Freon 11 | 0.16                 | 0.26             | 0.93                  | 1.5               |
| Acetone  | 0.82                 | 3.1              | 2.0                   | 7.3               |

# Client Sample ID: DUP23989

## Lab ID#: 1107511B-19B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.033      | 0.077  | 0.21       | 0.48    |

## **Client Sample ID: IA BF-34**

## Lab ID#: 1107511B-20A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.61             | 0.80                  | 3.0               |
| Freon 11 | 0.16                 | 0.70             | 0.91                  | 3.9               |
| Acetone  | 0.81                 | 3.7              | 1.9                   | 8.8               |



| Client Sample ID: IA BF-34                 |                      |                  |                       |                   |
|--|----------------------|------------------|-----------------------|-------------------|
| Lab ID#: 1107511B-20A<br>Tetrachloroethene | 0.16                 | 1.8              | 1.1                   | 12                |
| Client Sample ID: IA BF-34                 |                      |                  |                       |                   |
| Lab ID#: 1107511B-20B                      |                      |                  |                       |                   |
| Compound                                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Carbon Tetrachloride                       | 0.032                | 0.075            | 0.20                  | 0.47              |



# Client Sample ID: IA BB-39 Lab ID#: 1107511B-11A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | e080107           | Date of Collection: 7/26/11 4:50:00 PM |           |                      |
|------------------------|-------------------|--|-----------|----------------------|
|                        | 1.63<br>Pot Limit | Amount                                 | Rnt Limit | 1 12:39 PM<br>Amount |
| Compound               | (ppbv)            | (ppbv)                                 | (ug/m3)   | (ug/m3)              |
| Freon 12               | 0.16              | 0.60                                   | 0.81      | 3.0                  |
| Freon 11               | 0.16              | 0.26                                   | 0.92      | 1.4                  |
| Freon 113              | 0.16              | Not Detected                           | 1.2       | Not Detected         |
| 1,1-Dichloroethene     | 0.16              | Not Detected                           | 0.65      | Not Detected         |
| Acetone                | 0.82              | 3.4                                    | 1.9       | 8.2                  |
| Methylene Chloride     | 0.33              | Not Detected                           | 1.1       | Not Detected         |
| cis-1,2-Dichloroethene | 0.16              | Not Detected                           | 0.65      | Not Detected         |
| 1,1,1-Trichloroethane  | 0.16              | Not Detected                           | 0.89      | Not Detected         |
| Benzene                | 0.16              | Not Detected                           | 0.52      | Not Detected         |
| Toluene                | 0.16              | 0.17                                   | 0.61      | 0.64                 |
| Tetrachloroethene      | 0.16              | 0.61                                   | 1.1       | 4.2                  |
| Chlorobenzene          | 0.16              | Not Detected                           | 0.75      | Not Detected         |
| Ethyl Benzene          | 0.16              | Not Detected                           | 0.71      | Not Detected         |
| m,p-Xylene             | 0.16              | Not Detected                           | 0.71      | Not Detected         |
| o-Xylene               | 0.16              | Not Detected                           | 0.71      | Not Detected         |
| 1,3-Dichlorobenzene    | 0.16              | Not Detected                           | 0.98      | Not Detected         |
| 1,4-Dichlorobenzene    | 0.16              | Not Detected                           | 0.98      | Not Detected         |
| 1,2-Dichlorobenzene    | 0.16              | Not Detected                           | 0.98      | Not Detected         |
| 1,2,4-Trichlorobenzene | 0.82              | Not Detected                           | 6.0       | Not Detected         |

|                       |           | Method<br>Limits |  |
|-----------------------|-----------|------------------|--|
| Surrogates            | %Recovery |                  |  |
| 1,2-Dichloroethane-d4 | 108       | 70-130           |  |
| Toluene-d8            | 100       | 70-130           |  |
| 4-Bromofluorobenzene  | 107       | 70-130           |  |


# Client Sample ID: IA BB-39 Lab ID#: 1107511B-11B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | e080107sim Date of Collection: 7/26/11 4:50:00<br>1.63 Date of Analysis: 8/1/11 12:39 PM |                  | 26/11 4:50:00 PM<br>1 12:39 PM |                   |
|----------------------------|--|------------------|--------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)          | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016  | Not Detected     | 0.042                          | Not Detected      |
| Carbon Tetrachloride       | 0.033  | 0.073            | 0.20                           | 0.46              |
| Trichloroethene            | 0.033  | Not Detected     | 0.18                           | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 105       | 70-130 |  |



# Client Sample ID: DUP34437 Lab ID#: 1107511B-12A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | e080108    | Date of Collection: 7/26/11 4:50:00 PM |                      |              |
|------------------------|------------|--|----------------------|--------------|
| Dil. Factor:           | 1.58       | Date                                   | e of Analysis: 8/1/1 | 1 01:18 PM   |
| Compound               | Rpt. Limit | Amount<br>(npby)                       | Rpt. Limit           | Amount       |
|                        | (000)      | (ppst)                                 | (49/110)             | (ug/iiic)    |
| Freon 12               | 0.16       | 0.57                                   | 0.78                 | 2.8          |
| Freon 11               | 0.16       | 0.24                                   | 0.89                 | 1.4          |
| Freon 113              | 0.16       | Not Detected                           | 1.2                  | Not Detected |
| 1,1-Dichloroethene     | 0.16       | Not Detected                           | 0.63                 | Not Detected |
| Acetone                | 0.79       | 3.6                                    | 1.9                  | 8.6          |
| Methylene Chloride     | 0.32       | Not Detected                           | 1.1                  | Not Detected |
| cis-1,2-Dichloroethene | 0.16       | Not Detected                           | 0.63                 | Not Detected |
| 1,1,1-Trichloroethane  | 0.16       | Not Detected                           | 0.86                 | Not Detected |
| Benzene                | 0.16       | Not Detected                           | 0.50                 | Not Detected |
| Toluene                | 0.16       | Not Detected                           | 0.60                 | Not Detected |
| Tetrachloroethene      | 0.16       | Not Detected                           | 1.1                  | Not Detected |
| Chlorobenzene          | 0.16       | Not Detected                           | 0.73                 | Not Detected |
| Ethyl Benzene          | 0.16       | Not Detected                           | 0.69                 | Not Detected |
| m,p-Xylene             | 0.16       | Not Detected                           | 0.69                 | Not Detected |
| o-Xylene               | 0.16       | Not Detected                           | 0.69                 | Not Detected |
| 1,3-Dichlorobenzene    | 0.16       | Not Detected                           | 0.95                 | Not Detected |
| 1,4-Dichlorobenzene    | 0.16       | Not Detected                           | 0.95                 | Not Detected |
| 1,2-Dichlorobenzene    | 0.16       | Not Detected                           | 0.95                 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.79       | Not Detected                           | 5.9                  | Not Detected |

|                       | , ,       | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



# Client Sample ID: DUP34437 Lab ID#: 1107511B-12B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | e080108sim Date of<br>1.58 Date of |                  | of Collection: 7/2<br>of Analysis: 8/1/1 | 26/11 4:50:00 PM<br>1 01:18 PM |
|----------------------------|------------------------------------|------------------|--|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv)               | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)                    | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                              | Not Detected     | 0.040                                    | Not Detected                   |
| Carbon Tetrachloride       | 0.032                              | 0.054            | 0.20                                     | 0.34                           |
| Trichloroethene            | 0.032                              | Not Detected     | 0.17                                     | Not Detected                   |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 105       | 70-130 |  |



# Client Sample ID: IA BB-40 Lab ID#: 1107511B-13A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080109<br>1.60      | Date of Collection: 7/26/11 3:55:00 PM<br>Date of Analysis: 8/1/11 01:59 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.59  | 0.79                  | 2.9               |
| Freon 11                   | 0.16                 | 0.28  | 0.90                  | 1.6               |
| Freon 113                  | 0.16                 | Not Detected  | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected  | 0.63                  | Not Detected      |
| Acetone                    | 0.80                 | 4.7   | 1.9                   | 11                |
| Methylene Chloride         | 0.32                 | Not Detected  | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected  | 0.63                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected  | 0.87                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected  | 0.51                  | Not Detected      |
| Toluene                    | 0.16                 | Not Detected  | 0.60                  | Not Detected      |
| Tetrachloroethene          | 0.16                 | 0.31  | 1.1                   | 2.1               |
| Chlorobenzene              | 0.16                 | Not Detected  | 0.74                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected  | 0.69                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected  | 0.69                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected  | 0.69                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected  | 0.96                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected  | 0.96                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected  | 0.96                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.80                 | Not Detected  | 5.9                   | Not Detected      |

|                       | , , , , , , , , , , , , , , , , , , , | Method |  |
|-----------------------|---------------------------------------|--------|--|
| Surrogates            | %Recovery                             | Limits |  |
| 1,2-Dichloroethane-d4 | 112                                   | 70-130 |  |
| Toluene-d8            | 101                                   | 70-130 |  |
| 4-Bromofluorobenzene  | 106                                   | 70-130 |  |



# Client Sample ID: IA BB-40 Lab ID#: 1107511B-13B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080109sim Date of Collection: 7/26/11 3:55:00<br>1.60 Date of Analysis: 8/1/11 01:59 PM |                  | 26/11 3:55:00 PM<br>1 01:59 PM |                   |
|----------------------------|--|------------------|--------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)          | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016  | Not Detected     | 0.041                          | Not Detected      |
| Carbon Tetrachloride       | 0.032  | 0.082            | 0.20                           | 0.52              |
| Trichloroethene            | 0.032  | Not Detected     | 0.17                           | Not Detected      |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 105       | 70-130 |  |



# Client Sample ID: IA BC-32 Lab ID#: 1107511B-14A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | e080110    | Date of Collection: 7/26/11 3:42:00 PM |                      |              |
|------------------------|------------|--|----------------------|--------------|
| DII. Factor:           | 1.55       | Date                                   | e of Analysis: 8/1/1 | 1 02:36 PM   |
| O a man a sum d        | Rpt. Limit | Amount                                 | Rpt. Limit           | Amount       |
| Compound               | (vaqq)     | (vaqq)                                 | (ug/m3)              | (ug/m3)      |
| Freon 12               | 0.16       | 0.64                                   | 0.77                 | 3.2          |
| Freon 11               | 0.16       | 0.88                                   | 0.87                 | 5.0          |
| Freon 113              | 0.16       | Not Detected                           | 1.2                  | Not Detected |
| 1,1-Dichloroethene     | 0.16       | Not Detected                           | 0.61                 | Not Detected |
| Acetone                | 0.78       | 4.1                                    | 1.8                  | 9.8          |
| Methylene Chloride     | 0.31       | Not Detected                           | 1.1                  | Not Detected |
| cis-1,2-Dichloroethene | 0.16       | Not Detected                           | 0.61                 | Not Detected |
| 1,1,1-Trichloroethane  | 0.16       | Not Detected                           | 0.84                 | Not Detected |
| Benzene                | 0.16       | Not Detected                           | 0.50                 | Not Detected |
| Toluene                | 0.16       | Not Detected                           | 0.58                 | Not Detected |
| Tetrachloroethene      | 0.16       | 0.66                                   | 1.0                  | 4.5          |
| Chlorobenzene          | 0.16       | Not Detected                           | 0.71                 | Not Detected |
| Ethyl Benzene          | 0.16       | Not Detected                           | 0.67                 | Not Detected |
| m,p-Xylene             | 0.16       | Not Detected                           | 0.67                 | Not Detected |
| o-Xylene               | 0.16       | Not Detected                           | 0.67                 | Not Detected |
| 1,3-Dichlorobenzene    | 0.16       | Not Detected                           | 0.93                 | Not Detected |
| 1,4-Dichlorobenzene    | 0.16       | Not Detected                           | 0.93                 | Not Detected |
| 1,2-Dichlorobenzene    | 0.16       | Not Detected                           | 0.93                 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.78       | Not Detected                           | 5.8                  | Not Detected |

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



# Client Sample ID: IA BC-32 Lab ID#: 1107511B-14B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | e080110sim Date of Collection: 7/26/11 3:42:00 P<br>1.55 Date of Analysis: 8/1/11 02:36 PM |                  | 26/11 3:42:00 PM<br>11 02:36 PM |                   |
|----------------------------|--|------------------|---------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)           | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016  | Not Detected     | 0.040                           | Not Detected      |
| Carbon Tetrachloride       | 0.031  | 0.084            | 0.20                            | 0.53              |
| Trichloroethene            | 0.031  | Not Detected     | 0.17                            | Not Detected      |

|                       | (         | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 106       | 70-130 |



# Client Sample ID: IA BD-25 Lab ID#: 1107511B-15A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil Factor: | e080111              | Date of Collection: 7/26/11 3:29:00 PM |                       |                   |
|---------------------------|----------------------|--|-----------------------|-------------------|
| Compound                  | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                  | 0.16                 | 0.50                                   | 0.78                  | 2.5               |
| Freon 11                  | 0.16                 | 0.21                                   | 0.88                  | 1.2               |
| Freon 113                 | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene        | 0.16                 | Not Detected                           | 0.62                  | Not Detected      |
| Acetone                   | 0.78                 | 3.2                                    | 1.9                   | 7.5               |
| Methylene Chloride        | 0.31                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene    | 0.16                 | Not Detected                           | 0.62                  | Not Detected      |
| 1,1,1-Trichloroethane     | 0.16                 | Not Detected                           | 0.86                  | Not Detected      |
| Benzene                   | 0.16                 | Not Detected                           | 0.50                  | Not Detected      |
| Toluene                   | 0.16                 | Not Detected                           | 0.59                  | Not Detected      |
| Tetrachloroethene         | 0.16                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene             | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| Ethyl Benzene             | 0.16                 | Not Detected                           | 0.68                  | Not Detected      |
| m,p-Xylene                | 0.16                 | Not Detected                           | 0.68                  | Not Detected      |
| o-Xylene                  | 0.16                 | Not Detected                           | 0.68                  | Not Detected      |
| 1,3-Dichlorobenzene       | 0.16                 | Not Detected                           | 0.94                  | Not Detected      |
| 1,4-Dichlorobenzene       | 0.16                 | Not Detected                           | 0.94                  | Not Detected      |
| 1,2-Dichlorobenzene       | 0.16                 | Not Detected                           | 0.94                  | Not Detected      |
| 1,2,4-Trichlorobenzene    | 0.78                 | Not Detected                           | 5.8                   | Not Detected      |

|                       | , , , , , , , , , , , , , , , , , , , | Method |  |
|-----------------------|---------------------------------------|--------|--|
| Surrogates            | %Recovery                             | Limits |  |
| 1,2-Dichloroethane-d4 | 108                                   | 70-130 |  |
| Toluene-d8            | 101                                   | 70-130 |  |
| 4-Bromofluorobenzene  | 105                                   | 70-130 |  |



# Client Sample ID: IA BD-25 Lab ID#: 1107511B-15B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080111sim Date of Collection: 7/26/11 3:29:00 I<br>1.57 Date of Analysis: 8/1/11 04:00 PM |                  | 26/11 3:29:00 PM<br>11 04:00 PM |                   |
|----------------------------|--|------------------|---------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)           | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016  | Not Detected     | 0.040                           | Not Detected      |
| Carbon Tetrachloride       | 0.031  | 0.070            | 0.20                            | 0.44              |
| Trichloroethene            | 0.031  | Not Detected     | 0.17                            | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 113       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 105       | 70-130 |  |



# Client Sample ID: IA BE-23 Lab ID#: 1107511B-16A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:             | e080112 | Date of Collection: 7/26/11 3:26:00 PM |                      |              |
|------------------------|---------|--|----------------------|--------------|
| DII. Factor:           | 1.53    | Date                                   | e of Analysis: 8/1/1 | 1 04:41 PM   |
| Compound               | (ppbv)  | (ppbv)                                 | (ug/m3)              | (ug/m3)      |
| Freon 12               | 0.15    | 0.47                                   | 0.76                 | 2.3          |
| Freon 11               | 0.15    | 0.26                                   | 0.86                 | 1.5          |
| Freon 113              | 0.15    | Not Detected                           | 1.2                  | Not Detected |
| 1,1-Dichloroethene     | 0.15    | Not Detected                           | 0.61                 | Not Detected |
| Acetone                | 0.76    | 3.1                                    | 1.8                  | 7.4          |
| Methylene Chloride     | 0.31    | Not Detected                           | 1.1                  | Not Detected |
| cis-1,2-Dichloroethene | 0.15    | Not Detected                           | 0.61                 | Not Detected |
| 1,1,1-Trichloroethane  | 0.15    | Not Detected                           | 0.83                 | Not Detected |
| Benzene                | 0.15    | Not Detected                           | 0.49                 | Not Detected |
| Toluene                | 0.15    | Not Detected                           | 0.58                 | Not Detected |
| Tetrachloroethene      | 0.15    | Not Detected                           | 1.0                  | Not Detected |
| Chlorobenzene          | 0.15    | Not Detected                           | 0.70                 | Not Detected |
| Ethyl Benzene          | 0.15    | Not Detected                           | 0.66                 | Not Detected |
| m,p-Xylene             | 0.15    | Not Detected                           | 0.66                 | Not Detected |
| o-Xylene               | 0.15    | Not Detected                           | 0.66                 | Not Detected |
| 1,3-Dichlorobenzene    | 0.15    | Not Detected                           | 0.92                 | Not Detected |
| 1,4-Dichlorobenzene    | 0.15    | Not Detected                           | 0.92                 | Not Detected |
| 1,2-Dichlorobenzene    | 0.15    | Not Detected                           | 0.92                 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.76    | Not Detected                           | 5.7                  | Not Detected |

|                       | , ,       | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 108       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 105       | 70-130 |  |



# Client Sample ID: IA BE-23 Lab ID#: 1107511B-16B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | e080112sim Date of Collection: 7/26/11 3:26:00 P<br>1.53 Date of Analysis: 8/1/11 04:41 PM |                  | 26/11 3:26:00 PM<br>11 04:41 PM |                   |
|----------------------------|--|------------------|---------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)           | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.015  | Not Detected     | 0.039                           | Not Detected      |
| Carbon Tetrachloride       | 0.031  | 0.069            | 0.19                            | 0.43              |
| Trichloroethene            | 0.031  | Not Detected     | 0.16                            | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 105       | 70-130 |  |



# Client Sample ID: IA BE-28 Lab ID#: 1107511B-17A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:<br>Dil. Factor: | e080113<br>1.61      | Date of Collection: 7/26/11 3:31:00 PM<br>Date of Analysis: 8/1/11 05:28 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.52  | 0.80                  | 2.6               |
| Freon 11                   | 0.16                 | 0.38  | 0.90                  | 2.1               |
| Freon 113                  | 0.16                 | Not Detected  | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected  | 0.64                  | Not Detected      |
| Acetone                    | 0.80                 | 3.2   | 1.9                   | 7.7               |
| Methylene Chloride         | 0.32                 | Not Detected  | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected  | 0.64                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected  | 0.88                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected  | 0.51                  | Not Detected      |
| Toluene                    | 0.16                 | Not Detected  | 0.61                  | Not Detected      |
| Tetrachloroethene          | 0.16                 | 0.48  | 1.1                   | 3.3               |
| Chlorobenzene              | 0.16                 | Not Detected  | 0.74                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected  | 0.70                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected  | 0.70                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected  | 0.70                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected  | 0.97                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected  | 0.97                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected  | 0.97                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.80                 | Not Detected  | 6.0                   | Not Detected      |

|                       | , ,       | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 111       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



# Client Sample ID: IA BE-28 Lab ID#: 1107511B-17B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | e080113sim Date      |                  | of Collection: 7/2<br>of Analysis: 8/1/1 | 26/11 3:31:00 PM  |
|----------------------------|----------------------|------------------|--|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)                    | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016                | Not Detected     | 0.041                                    | Not Detected      |
| Carbon Tetrachloride       | 0.032                | 0.072            | 0.20                                     | 0.45              |
| Trichloroethene            | 0.032                | Not Detected     | 0.17                                     | Not Detected      |

|                       | (         | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 106       | 70-130 |



# Client Sample ID: IA BF-24 Lab ID#: 1107511B-18A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:             | e080114    | Date of Collection: 7/26/11 3:22:00 PM |            |              |
|------------------------|------------|--|------------|--------------|
| Dil. Factor:           | 1.60       | Date of Analysis: 8/1/11 06:06 PM      |            |              |
| Compound               | Rpt. Limit | Amount                                 | Rpt. Limit | Amount       |
| Compound               | (pppv)     | (pppa)                                 | (ug/iiis)  | (ug/iiis)    |
| Freon 12               | 0.16       | 0.50                                   | 0.79       | 2.4          |
| Freon 11               | 0.16       | 0.26                                   | 0.90       | 1.5          |
| Freon 113              | 0.16       | Not Detected                           | 1.2        | Not Detected |
| 1,1-Dichloroethene     | 0.16       | Not Detected                           | 0.63       | Not Detected |
| Acetone                | 0.80       | 3.1                                    | 1.9        | 7.3          |
| Methylene Chloride     | 0.32       | Not Detected                           | 1.1        | Not Detected |
| cis-1,2-Dichloroethene | 0.16       | Not Detected                           | 0.63       | Not Detected |
| 1,1,1-Trichloroethane  | 0.16       | Not Detected                           | 0.87       | Not Detected |
| Benzene                | 0.16       | Not Detected                           | 0.51       | Not Detected |
| Toluene                | 0.16       | Not Detected                           | 0.60       | Not Detected |
| Tetrachloroethene      | 0.16       | Not Detected                           | 1.1        | Not Detected |
| Chlorobenzene          | 0.16       | Not Detected                           | 0.74       | Not Detected |
| Ethyl Benzene          | 0.16       | Not Detected                           | 0.69       | Not Detected |
| m,p-Xylene             | 0.16       | Not Detected                           | 0.69       | Not Detected |
| o-Xylene               | 0.16       | Not Detected                           | 0.69       | Not Detected |
| 1,3-Dichlorobenzene    | 0.16       | Not Detected                           | 0.96       | Not Detected |
| 1,4-Dichlorobenzene    | 0.16       | Not Detected                           | 0.96       | Not Detected |
| 1,2-Dichlorobenzene    | 0.16       | Not Detected                           | 0.96       | Not Detected |
| 1,2,4-Trichlorobenzene | 0.80       | Not Detected                           | 5.9        | Not Detected |

|                       | , ,       | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |  |
| Toluene-d8            | 101       | 70-130 |  |
| 4-Bromofluorobenzene  | 104       | 70-130 |  |



# Client Sample ID: IA BF-24 Lab ID#: 1107511B-18B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080114sim Date of Collection: 7/26/11 3:22:00 P<br>1.60 Date of Analysis: 8/1/11 06:06 PM |                  | 26/11 3:22:00 PM<br>11 06:06 PM |                   |
|----------------------------|--|------------------|---------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)   | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)           | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016  | Not Detected     | 0.041                           | Not Detected      |
| Carbon Tetrachloride       | 0.032  | 0.077            | 0.20                            | 0.48              |
| Trichloroethene            | 0.032  | Not Detected     | 0.17                            | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 106       | 70-130 |



# Client Sample ID: DUP23989 Lab ID#: 1107511B-19A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:             | e080115              | Date of Collection: 7/26/11 3:22:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.65                 | Date of Analysis: 8/1/11 06:43 PM      |                       |                   |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.52                                   | 0.82                  | 2.5               |
| Freon 11               | 0.16                 | 0.26                                   | 0.93                  | 1.5               |
| Freon 113              | 0.16                 | Not Detected                           | 1.3                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.65                  | Not Detected      |
| Acetone                | 0.82                 | 3.1                                    | 2.0                   | 7.3               |
| Methylene Chloride     | 0.33                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.65                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.90                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.53                  | Not Detected      |
| Toluene                | 0.16                 | Not Detected                           | 0.62                  | Not Detected      |
| Tetrachloroethene      | 0.16                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.76                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.72                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.99                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.99                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.99                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.82                 | Not Detected                           | 6.1                   | Not Detected      |

|                       | , ,       | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 101       | 70-130 |
| 4-Bromofluorobenzene  | 105       | 70-130 |



# Client Sample ID: DUP23989 Lab ID#: 1107511B-19B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080115sim Date of Collection: 7/26/11 3:22:0<br>1.65 Date of Analysis: 8/1/11 06:43 PM |                  | 26/11 3:22:00 PM<br>1 06:43 PM |                   |
|----------------------------|---|------------------|--------------------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv)  | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)          | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016   | Not Detected     | 0.042                          | Not Detected      |
| Carbon Tetrachloride       | 0.033   | 0.077            | 0.21                           | 0.48              |
| Trichloroethene            | 0.033   | Not Detected     | 0.18                           | Not Detected      |

|                       | (0        | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 106       | 70-130 |  |



# Client Sample ID: IA BF-34 Lab ID#: 1107511B-20A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | e080116    | Date of Collection: 7/26/11 3:50:00 PM |            |              |
|------------------------|------------|--|------------|--------------|
| DII. Factor:           | 1.62       | Date of Analysis: 8/1/11 07:20 PM      |            |              |
| Compound               | Rpt. Limit | Amount                                 | Rpt. Limit | Amount       |
| Compound               | (vaqq)     | (vaqq)                                 | (ug/m3)    | (ug/m3)      |
| Freon 12               | 0.16       | 0.61                                   | 0.80       | 3.0          |
| Freon 11               | 0.16       | 0.70                                   | 0.91       | 3.9          |
| Freon 113              | 0.16       | Not Detected                           | 1.2        | Not Detected |
| 1,1-Dichloroethene     | 0.16       | Not Detected                           | 0.64       | Not Detected |
| Acetone                | 0.81       | 3.7                                    | 1.9        | 8.8          |
| Methylene Chloride     | 0.32       | Not Detected                           | 1.1        | Not Detected |
| cis-1,2-Dichloroethene | 0.16       | Not Detected                           | 0.64       | Not Detected |
| 1,1,1-Trichloroethane  | 0.16       | Not Detected                           | 0.88       | Not Detected |
| Benzene                | 0.16       | Not Detected                           | 0.52       | Not Detected |
| Toluene                | 0.16       | Not Detected                           | 0.61       | Not Detected |
| Tetrachloroethene      | 0.16       | 1.8                                    | 1.1        | 12           |
| Chlorobenzene          | 0.16       | Not Detected                           | 0.74       | Not Detected |
| Ethyl Benzene          | 0.16       | Not Detected                           | 0.70       | Not Detected |
| m,p-Xylene             | 0.16       | Not Detected                           | 0.70       | Not Detected |
| o-Xylene               | 0.16       | Not Detected                           | 0.70       | Not Detected |
| 1,3-Dichlorobenzene    | 0.16       | Not Detected                           | 0.97       | Not Detected |
| 1,4-Dichlorobenzene    | 0.16       | Not Detected                           | 0.97       | Not Detected |
| 1,2-Dichlorobenzene    | 0.16       | Not Detected                           | 0.97       | Not Detected |
| 1,2,4-Trichlorobenzene | 0.81       | Not Detected                           | 6.0        | Not Detected |

|                       | · · · · · | Method<br>Limits |  |
|-----------------------|-----------|------------------|--|
| Surrogates            | %Recovery |                  |  |
| 1,2-Dichloroethane-d4 | 109       | 70-130           |  |
| Toluene-d8            | 102       | 70-130           |  |
| 4-Bromofluorobenzene  | 105       | 70-130           |  |



# Client Sample ID: IA BF-34 Lab ID#: 1107511B-20B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080116sim<br>1.62   | Date<br>Date     | of Collection: 7/2<br>of Analysis: 8/1/1 | 26/11 3:50:00 PM<br>1 07:20 PM |
|----------------------------|----------------------|------------------|--|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)                    | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                | Not Detected     | 0.041                                    | Not Detected                   |
| Carbon Tetrachloride       | 0.032                | 0.075            | 0.20                                     | 0.47                           |
| Trichloroethene            | 0.032                | Not Detected     | 0.17                                     | Not Detected                   |

|                       |           | Method<br>Limits |
|-----------------------|-----------|------------------|
| Surrogates            | %Recovery |                  |
| 1,2-Dichloroethane-d4 | 112       | 70-130           |
| Toluene-d8            | 100       | 70-130           |
| 4-Bromofluorobenzene  | 106       | 70-130           |



# Client Sample ID: Lab Blank Lab ID#: 1107511B-21A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | e080106              | Date             | of Collection: NA     | 1 11·09 AM        |
|----------------------------|----------------------|------------------|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.10                 | Not Detected     | 0.49                  | Not Detected      |
| Freon 11                   | 0.10                 | Not Detected     | 0.56                  | Not Detected      |
| Freon 113                  | 0.10                 | Not Detected     | 0.77                  | Not Detected      |
| 1,1-Dichloroethene         | 0.10                 | Not Detected     | 0.40                  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected     | 1.2                   | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected     | 0.69                  | Not Detected      |
| cis-1,2-Dichloroethene     | 0.10                 | Not Detected     | 0.40                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.10                 | Not Detected     | 0.54                  | Not Detected      |
| Benzene                    | 0.10                 | Not Detected     | 0.32                  | Not Detected      |
| Toluene                    | 0.10                 | Not Detected     | 0.38                  | Not Detected      |
| Tetrachloroethene          | 0.10                 | Not Detected     | 0.68                  | Not Detected      |
| Chlorobenzene              | 0.10                 | Not Detected     | 0.46                  | Not Detected      |
| Ethyl Benzene              | 0.10                 | Not Detected     | 0.43                  | Not Detected      |
| m,p-Xylene                 | 0.10                 | Not Detected     | 0.43                  | Not Detected      |
| o-Xylene                   | 0.10                 | Not Detected     | 0.43                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.50                 | Not Detected     | 3.7                   | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 109       | 70-130 |
| Toluene-d8            | 101       | 70-130 |
| 4-Bromofluorobenzene  | 107       | 70-130 |



# Client Sample ID: Lab Blank Lab ID#: 1107511B-21B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:           | e080106sim | Date         | of Collection: NA  | 1 11:09 AM   |
|----------------------|------------|--------------|--------------------|--------------|
| Dil. Factor:         | 1.00       | Date         | of Analysis: 8/1/1 |              |
| Compound             | Rpt. Limit | Amount       | Rpt. Limit         | Amount       |
|                      | (ppbv)     | (ppbv)       | (ug/m3)            | (ug/m3)      |
| Vinyl Chloride       | 0.010      | Not Detected | 0.026              | Not Detected |
| Carbon Tetrachloride | 0.020      | Not Detected | 0.12               | Not Detected |
| Trichloroethene      | 0.020      | Not Detected | 0.11               | Not Detected |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 112       | 70-130 |
| Toluene-d8            | 102       | 70-130 |
| 4-Bromofluorobenzene  | 105       | 70-130 |



# Client Sample ID: CCV Lab ID#: 1107511B-22A

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

1

| File Name:             | e080102 | Date of Collection: NA            |
|------------------------|---------|-----------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 8/1/11 08:38 AM |
|                        |         |                                   |
| Compound               |         | %Recovery                         |
| Freon 12               |         | 111                               |
| Freon 11               |         | 104                               |
| Freon 113              |         | 99                                |
| 1,1-Dichloroethene     |         | 99                                |
| Acetone                |         | 116                               |
| Methylene Chloride     |         | 101                               |
| cis-1,2-Dichloroethene |         | 98                                |
| 1,1,1-Trichloroethane  |         | 101                               |
| Benzene                |         | 100                               |
| Toluene                |         | 102                               |
| Tetrachloroethene      |         | 99                                |
| Chlorobenzene          |         | 102                               |
| Ethyl Benzene          |         | 106                               |
| m,p-Xylene             |         | 108                               |
| o-Xylene               |         | 106                               |
| 1,3-Dichlorobenzene    |         | 107                               |
| 1,4-Dichlorobenzene    |         | 106                               |
| 1,2-Dichlorobenzene    |         | 108                               |
| 1,2,4-Trichlorobenzene |         | 113                               |

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



# Client Sample ID: CCV Lab ID#: 1107511B-22B

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

| File Name:                 | e080102sim | Date of Collec | ction: NA            |
|----------------------------|------------|----------------|----------------------|
| Dil. Factor:               | 1.00       | Date of Analy  | sis: 8/1/11 08:38 AM |
|                            |            |                |                      |
| Compound                   |            |                | %Recovery            |
| Vinyl Chloride             |            |                | 111                  |
| Carbon Tetrachloride       |            |                | 106                  |
| Trichloroethene            |            |                | 90                   |
| Container Type: NA - Not A | Applicable |                |                      |
|                            |            |                | Method               |
| Surrogates                 |            | %Recovery      | Limits               |
| 1,2-Dichloroethane-d4      |            | 112            | 70-130               |
| Toluene-d8                 |            | 103            | 70-130               |
| 4-Bromofluorobenzene       |            | 104            | 70-130               |



# Client Sample ID: LCS Lab ID#: 1107511B-23A

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

1

| File Name:             | e080103 | Date of Collection: NA            |
|------------------------|---------|-----------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 8/1/11 09:14 AM |
| Compound               |         | %Recovery                         |
| Freon 12               |         | 112                               |
| Freon 11               |         | 107                               |
| Freon 113              |         | 102                               |
| 1,1-Dichloroethene     |         | 107                               |
| Acetone                |         | 116                               |
| Methylene Chloride     |         | 102                               |
| cis-1,2-Dichloroethene |         | 103                               |
| 1,1,1-Trichloroethane  |         | 106                               |
| Benzene                |         | 104                               |
| Toluene                |         | 104                               |
| Tetrachloroethene      |         | 98                                |
| Chlorobenzene          |         | 104                               |
| Ethyl Benzene          |         | 107                               |
| m,p-Xylene             |         | 109                               |
| o-Xylene               |         | 107                               |
| 1,3-Dichlorobenzene    |         | 108                               |
| 1,4-Dichlorobenzene    |         | 107                               |
| 1,2-Dichlorobenzene    |         | 110                               |
| 1,2,4-Trichlorobenzene |         | 119                               |

| 21 11                 |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 106       | 70-130 |
| Toluene-d8            | 103       | 70-130 |
| 4-Bromofluorobenzene  | 104       | 70-130 |



# Client Sample ID: LCSD Lab ID#: 1107511B-23AA

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

1

| File Name:             | e080104 | Date of Collection: NA            |
|------------------------|---------|-----------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 8/1/11 09:52 AM |
|                        |         |                                   |
| Compound               |         | %Recovery                         |
| Freon 12               |         | 110                               |
| Freon 11               |         | 106                               |
| Freon 113              |         | 100                               |
| 1,1-Dichloroethene     |         | 106                               |
| Acetone                |         | 116                               |
| Methylene Chloride     |         | 102                               |
| cis-1,2-Dichloroethene |         | 102                               |
| 1,1,1-Trichloroethane  |         | 106                               |
| Benzene                |         | 103                               |
| Toluene                |         | 104                               |
| Tetrachloroethene      |         | 96                                |
| Chlorobenzene          |         | 104                               |
| Ethyl Benzene          |         | 107                               |
| m,p-Xylene             |         | 108                               |
| o-Xylene               |         | 105                               |
| 1,3-Dichlorobenzene    |         | 108                               |
| 1,4-Dichlorobenzene    |         | 106                               |
| 1,2-Dichlorobenzene    |         | 109                               |
| 1,2,4-Trichlorobenzene |         | 120                               |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 107       | 70-130 |
| Toluene-d8            | 102       | 70-130 |
| 4-Bromofluorobenzene  | 105       | 70-130 |



# Client Sample ID: LCS Lab ID#: 1107511B-23B

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

| File Name:                 | e080103sim | Date of Collec | ction: NA            |
|----------------------------|------------|----------------|----------------------|
| Dil. Factor:               | 1.00       | Date of Analy  | sis: 8/1/11 09:14 AM |
|                            |            |                |                      |
| Compound                   |            |                | %Recovery            |
| Vinyl Chloride             |            |                | 112                  |
| Carbon Tetrachloride       |            |                | 95                   |
| Trichloroethene            |            |                | 93                   |
| Container Type: NA - Not A | Applicable |                |                      |
|                            |            |                | Method               |
| Surrogates                 |            | %Recovery      | Limits               |
| 1,2-Dichloroethane-d4      |            | 111            | 70-130               |
| Toluene-d8                 |            | 104            | 70-130               |
| 4-Bromofluorobenzene       |            | 104            | 70-130               |



# Client Sample ID: LCSD Lab ID#: 1107511B-23BB

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

| File Name:                 | e080104sim | Date of Collec | ction: NA            |
|----------------------------|------------|----------------|----------------------|
| Dil. Factor:               | 1.00       | Date of Analy  | sis: 8/1/11 09:52 AM |
|                            |            |                |                      |
| Compound                   |            |                | %Recovery            |
| Vinyl Chloride             |            |                | 110                  |
| Carbon Tetrachloride       |            |                | 95                   |
| Trichloroethene            |            |                | 93                   |
| Container Type: NA - Not A | Applicable |                |                      |
|                            |            |                | Method               |
| Surrogates                 |            | %Recovery      | Limits               |
| 1,2-Dichloroethane-d4      |            | 111            | 70-130               |
| Toluene-d8                 |            | 103            | 70-130               |
| 4-Bromofluorobenzene       |            | 104            | 70-130               |



8/10/2011 Mr. Brad Green Sanborn, Head & Associates 20 Foundry Street

Concord NH 03301

Project Name: IBM East Fishkill Project #: 2999.00 Workorder #: 1107511C

Dear Mr. Brad Green

The following report includes the data for the above referenced project for sample(s) received on 7/29/2011 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: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott Project Manager

Page 1 of 38



# **WORK ORDER #: 1107511C**

Work Order Summary

| CLIENT:         | Mr. Brad Green             | <b>BILL TO:</b> | Accounts Payable           |
|-----------------|----------------------------|-----------------|----------------------------|
|                 | Sanborn, Head & Associates |                 | Sanborn, Head & Associates |
|                 | 20 Foundry Street          |                 | 20 Foundry Street          |
|                 | Concord, NH 03301          |                 | Concord, NH 03301          |
| PHONE:          | 603-229-1900               | <b>P.O.</b> #   |                            |
| FAX:            | 603-229-1919               | PROJECT #       | 2999.00 IBM East Fishkill  |
| DATE RECEIVED:  | 07/29/2011                 | CONTACT         | Ausha Scott                |
| DATE COMPLETED: | 08/10/2011                 | contact.        | Ausila Scott               |
|                 |                            |                 |                            |
|                 |                            |                 | RECEIPT                    |

|            |           |                | RECEIPT    | FINAL    |
|------------|-----------|----------------|------------|----------|
| FRACTION # | NAME      | TEST           | VAC./PRES. | PRESSURE |
| 21A        | IA BG-22  | Modified TO-15 | 4.8 "Hg    | 5 psi    |
| 21B        | IA BG-22  | Modified TO-15 | 4.8 "Hg    | 5 psi    |
| 22A        | IA BG-23  | Modified TO-15 | 4.6 "Hg    | 5 psi    |
| 22B        | IA BG-23  | Modified TO-15 | 4.6 "Hg    | 5 psi    |
| 23A        | IA BG-24  | Modified TO-15 | 5.8 "Hg    | 5 psi    |
| 23B        | IA BG-24  | Modified TO-15 | 5.8 "Hg    | 5 psi    |
| 24A        | IA BG-38  | Modified TO-15 | 4.0 "Hg    | 5 psi    |
| 24B        | IA BG-38  | Modified TO-15 | 4.0 "Hg    | 5 psi    |
| 25A        | IA BG-45  | Modified TO-15 | 3.8 "Hg    | 5 psi    |
| 25B        | IA BG-45  | Modified TO-15 | 3.8 "Hg    | 5 psi    |
| 26A        | IA BH-40  | Modified TO-15 | 4.6 "Hg    | 5 psi    |
| 26B        | IA BH-40  | Modified TO-15 | 4.6 "Hg    | 5 psi    |
| 27A        | AA AC-15  | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 27B        | AA AC-15  | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 28A        | AC MAU 72 | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 28B        | AC MAU 72 | Modified TO-15 | 5.2 "Hg    | 5 psi    |
| 29A        | FB-01     | Modified TO-15 | 5.8 "Hg    | 5 psi    |

Continued on next page



## WORK ORDER #: 1107511C

#### Work Order Summary

| CLIENT:         | Mr. Brad Green<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 | BILL TO:         | Accounts Payable<br>Sanborn, Head & Associates<br>20 Foundry Street<br>Concord, NH 03301 |
|-----------------|--|------------------|--|
| PHONE:          | 603-229-1900   | <b>P.O.</b> #    |  |
| FAX:            | 603-229-1919   | <b>PROJECT</b> # | 2999.00 IBM East Fishkill  |
| DATE RECEIVED:  | 07/29/2011   | CONTACT:         | Ausha Scott  |
| DATE COMPLETED: | 08/10/2011   | 00111011         |  |

|            |           |                | <b>KEUEIF</b> I | FINAL    |
|------------|-----------|----------------|-----------------|----------|
| FRACTION # | NAME      | TEST           | VAC./PRES.      | PRESSURE |
| 29B        | FB-01     | Modified TO-15 | 5.8 "Hg         | 5 psi    |
| 30A        | FB-02     | Modified TO-15 | 5.0 "Hg         | 5 psi    |
| 30B        | FB-02     | Modified TO-15 | 5.0 "Hg         | 5 psi    |
| 31A        | Lab Blank | Modified TO-15 | NA              | NA       |
| 31B        | Lab Blank | Modified TO-15 | NA              | NA       |
| 32A        | CCV       | Modified TO-15 | NA              | NA       |
| 32B        | CCV       | Modified TO-15 | NA              | NA       |
| 33A        | LCS       | Modified TO-15 | NA              | NA       |
| 33AA       | LCSD      | Modified TO-15 | NA              | NA       |
| 33B        | LCS       | Modified TO-15 | NA              | NA       |
| 33BB       | LCSD      | Modified TO-15 | NA              | NA       |
|            |           |                |                 |          |

CERTIFIED BY:

Sinda d. Fruman

DATE: 08/10/11

DECEIDT

TTNIA T

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719 Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act, Accreditation number: E87680, Effective date: 07/01/11, Expiration date: 06/30/12. 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 Air Toxics Ltd.

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



## LABORATORY NARRATIVE Modified TO-15 Full Scan/SIM Sanborn, Head & Associates Workorder# 1107511C

Ten 6 Liter Summa Canister (SIM Certified) samples were received on July 29, 2011. Ten 6 Liter Summa Canister (SIM Certified) samples were received on July 29, 2011. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

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

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

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

# **Receiving Notes**

The Chain of Custody (COC) information for sample IA BG-38 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.



# Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

# **Definition of Data Qualifying Flags**

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

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

- J Estimated value.
- E Exceeds instrument calibration range.
- S Saturated peak.
- Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit.
- UJ- Non-detected compound associated with low bias in the CCV and/or LCS.
- N The identification is based on presumptive evidence.

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

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



## Client Sample ID: IA BG-22

#### Lab ID#: 1107511C-21A

| Compound           | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|--------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12           | 0.16                 | 0.31             | 0.79                  | 1.5               |
| Freon 11           | 0.16                 | 0.18             | 0.90                  | 1.0               |
| Acetone            | 0.80                 | 3.0              | 1.9                   | 7.1               |
| Methylene Chloride | 0.32                 | 0.40             | 1.1                   | 1.4               |

#### **Client Sample ID: IA BG-22**

#### Lab ID#: 1107511C-21B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.032  | 0.20       | 0.20    |

#### **Client Sample ID: IA BG-23**

#### Lab ID#: 1107511C-22A

| Compound   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12   | 0.16                 | 0.51             | 0.78                  | 2.5               |
| Freon 11   | 0.16                 | 0.28             | 0.89                  | 1.6               |
| Acetone    | 0.79                 | 4.6              | 1.9                   | 11                |
| Toluene    | 0.16                 | 0.44             | 0.60                  | 1.7               |
| m,p-Xylene | 0.16                 | 0.16             | 0.69                  | 0.70              |

#### **Client Sample ID: IA BG-23**

#### Lab ID#: 1107511C-22B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.057  | 0.20       | 0.36    |

## Client Sample ID: IA BG-24

## Lab ID#: 1107511C-23A

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



## Client Sample ID: IA BG-24

Lab ID#: 1107511C-23A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.17                 | 0.47             | 0.82                  | 2.3               |
| Freon 11 | 0.17                 | 0.25             | 0.93                  | 1.4               |
| Acetone  | 0.83                 | 3.0              | 2.0                   | 7.1               |

### **Client Sample ID: IA BG-24**

#### Lab ID#: 1107511C-23B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.033      | 0.054  | 0.21       | 0.34    |

#### **Client Sample ID: IA BG-38**

#### Lab ID#: 1107511C-24A

| Compound           | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|--------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12           | 0.16                 | 0.49             | 0.77                  | 2.4               |
| Freon 11           | 0.16                 | 0.41             | 0.87                  | 2.3               |
| Acetone            | 0.78                 | 4.0              | 1.8                   | 9.6               |
| Methylene Chloride | 0.31                 | 0.32             | 1.1                   | 1.1               |
| Tetrachloroethene  | 0.16                 | 0.92             | 1.0                   | 6.2               |

### **Client Sample ID: IA BG-38**

#### Lab ID#: 1107511C-24B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.031      | 0.057  | 0.20       | 0.36    |

#### **Client Sample ID: IA BG-45**

#### Lab ID#: 1107511C-25A

| Compound | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------|------------|--------|------------|---------|
|          | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Freon 12 | 0.15       | 0.54   | 0.76       | 2.6     |



## **Client Sample ID: IA BG-45**

| Lab ID#: 1107511C-25A |      |      |      |      |
|-----------------------|------|------|------|------|
| Freon 11              | 0.15 | 0.32 | 0.86 | 1.8  |
| Acetone               | 0.76 | 4.9  | 1.8  | 12   |
| Toluene               | 0.15 | 0.23 | 0.58 | 0.86 |
| Tetrachloroethene     | 0.15 | 0.19 | 1.0  | 1.3  |
| m,p-Xylene            | 0.15 | 0.18 | 0.66 | 0.76 |

#### **Client Sample ID: IA BG-45**

#### Lab ID#: 1107511C-25B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.031      | 0.056  | 0.19       | 0.35    |

#### **Client Sample ID: IA BH-40**

# Lab ID#: 1107511C-26A

| Compound          | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|-------------------|----------------------|------------------|-----------------------|-------------------|
| Freon 12          | 0.16                 | 0.57             | 0.78                  | 2.8               |
| Freon 11          | 0.16                 | 0.43             | 0.89                  | 2.4               |
| Acetone           | 0.79                 | 4.7              | 1.9                   | 11                |
| Tetrachloroethene | 0.16                 | 1.2              | 1.1                   | 8.4               |

#### **Client Sample ID: IA BH-40**

#### Lab ID#: 1107511C-26B

|                      | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.051  | 0.20       | 0.32    |

### **Client Sample ID: AA AC-15**

#### Lab ID#: 1107511C-27A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.54             | 0.80                  | 2.7               |
| Freon 11 | 0.16                 | 0.33             | 0.91                  | 1.8               |



### **Client Sample ID: AA AC-15**

| 0.81 | 3.3                          | 1.9                             | 7.9   |
|------|------------------------------|---------------------------------|---|
| 0.32 | 0.33                         | 1.1                             | 1.2   |
| 0.16 | 0.24                         | 0.52                            | 0.78  |
| 0.16 | 0.17                         | 0.61                            | 0.65  |
|      | 0.81<br>0.32<br>0.16<br>0.16 | 0.813.30.320.330.160.240.160.17 | 0.813.31.90.320.331.10.160.240.520.160.170.61 |

### **Client Sample ID: AA AC-15**

#### Lab ID#: 1107511C-27B

| Compound             | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------------------|----------------------|------------------|-----------------------|-------------------|
| Vinyl Chloride       | 0.016                | 0.32             | 0.041                 | 0.83              |
| Carbon Tetrachloride | 0.032                | 0.085            | 0.20                  | 0.53              |

#### **Client Sample ID: AC MAU 72**

#### Lab ID#: 1107511C-28A

| Compound | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
|----------|----------------------|------------------|-----------------------|-------------------|
| Freon 12 | 0.16                 | 0.51             | 0.80                  | 2.5               |
| Freon 11 | 0.16                 | 0.22             | 0.91                  | 1.2               |
| Acetone  | 0.81                 | 2.5              | 1.9                   | 6.0               |

#### **Client Sample ID: AC MAU 72**

#### Lab ID#: 1107511C-28B

| Compound             | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------------|------------|--------|------------|---------|
| Compound             | (vaqq)     | (vaqq) | (ug/m3)    | (ug/m3) |
| Carbon Tetrachloride | 0.032      | 0.069  | 0.20       | 0.43    |

### Client Sample ID: FB-01

#### Lab ID#: 1107511C-29A

No Detections Were Found.

### Client Sample ID: FB-01

Lab ID#: 1107511C-29B


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

**Client Sample ID: FB-01** 

Lab ID#: 1107511C-29B

| Compound       | Rpt. Limit | Amount | Rpt. Limit | Amount  |
|----------------|------------|--------|------------|---------|
|                | (ppbv)     | (ppbv) | (ug/m3)    | (ug/m3) |
| Vinyl Chloride | 0.017      | 0.068  | 0.042      | 0.17    |

#### **Client Sample ID: FB-02**

#### Lab ID#: 1107511C-30A

No Detections Were Found.

#### **Client Sample ID: FB-02**

#### Lab ID#: 1107511C-30B

No Detections Were Found.



# Client Sample ID: IA BG-22 Lab ID#: 1107511C-21A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

1

| File Name:             | a080206                                 | Date of Collection: 7/26/11 3:02:00 PM |                      |                   |
|------------------------|---|--|----------------------|-------------------|
| DII. Factor:           | 1.60                                    | Date                                   | e of Analysis: 8/2/1 | 1 11:16 AM        |
| Compound               | Rpt. Limit                              | Amount<br>(ppby)                       | Rpt. Limit           | Amount<br>(ug/m3) |
|                        | ( , , , , , , , , , , , , , , , , , , , | (PP=1)                                 | (49,                 | (                 |
| Freon 12               | 0.16                                    | 0.31                                   | 0.79                 | 1.5               |
| Freon 11               | 0.16                                    | 0.18                                   | 0.90                 | 1.0               |
| Freon 113              | 0.16                                    | Not Detected                           | 1.2                  | Not Detected      |
| 1,1-Dichloroethene     | 0.16                                    | Not Detected                           | 0.63                 | Not Detected      |
| Acetone                | 0.80                                    | 3.0                                    | 1.9                  | 7.1               |
| Methylene Chloride     | 0.32                                    | 0.40                                   | 1.1                  | 1.4               |
| cis-1,2-Dichloroethene | 0.16                                    | Not Detected                           | 0.63                 | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                                    | Not Detected                           | 0.87                 | Not Detected      |
| Benzene                | 0.16                                    | Not Detected                           | 0.51                 | Not Detected      |
| Toluene                | 0.16                                    | Not Detected                           | 0.60                 | Not Detected      |
| Tetrachloroethene      | 0.16                                    | Not Detected                           | 1.1                  | Not Detected      |
| Chlorobenzene          | 0.16                                    | Not Detected                           | 0.74                 | Not Detected      |
| Ethyl Benzene          | 0.16                                    | Not Detected                           | 0.69                 | Not Detected      |
| m,p-Xylene             | 0.16                                    | Not Detected                           | 0.69                 | Not Detected      |
| o-Xylene               | 0.16                                    | Not Detected                           | 0.69                 | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                                    | Not Detected                           | 0.96                 | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                                    | Not Detected                           | 0.96                 | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                                    | Not Detected                           | 0.96                 | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.80                                    | Not Detected                           | 5.9                  | Not Detected      |

|                       | · · · ·   | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 99        | 70-130 |
| Toluene-d8            | 98        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: IA BG-22 Lab ID#: 1107511C-21B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080206sim<br>1.60   | Date of Collection: 7/26/11 3:02:00 PM<br>Date of Analysis: 8/2/11 11:16 AM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.041                 | Not Detected      |
| Carbon Tetrachloride       | 0.032                | 0.032   | 0.20                  | 0.20              |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected      |

|                       | (         | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 104       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: IA BG-23 Lab ID#: 1107511C-22A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080207              | Date of Collection: 7/26/11 3:03:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.58                 | Date                                   | e of Analysis: 8/2/1  | 1 11:51 AM        |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.51                                   | 0.78                  | 2.5               |
| Freon 11               | 0.16                 | 0.28                                   | 0.89                  | 1.6               |
| Freon 113              | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.63                  | Not Detected      |
| Acetone                | 0.79                 | 4.6                                    | 1.9                   | 11                |
| Methylene Chloride     | 0.32                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.63                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.86                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.50                  | Not Detected      |
| Toluene                | 0.16                 | 0.44                                   | 0.60                  | 1.7               |
| Tetrachloroethene      | 0.16                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.73                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.69                  | Not Detected      |
| m,p-Xylene             | 0.16                 | 0.16                                   | 0.69                  | 0.70              |
| o-Xylene               | 0.16                 | Not Detected                           | 0.69                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.95                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.95                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.95                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.79                 | Not Detected                           | 5.9                   | Not Detected      |

|                       | , ,       | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 98        | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



# Client Sample ID: IA BG-23 Lab ID#: 1107511C-22B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080207sim<br>1.58   | Date of Collection: 7/26/11 3:03:00 PM<br>Date of Analysis: 8/2/11 11:51 AM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.040                 | Not Detected      |
| Carbon Tetrachloride       | 0.032                | 0.057   | 0.20                  | 0.36              |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 99        | 70-130 |



# Client Sample ID: IA BG-24 Lab ID#: 1107511C-23A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080208           | Date of Collection: 7/26/11 3:19:00 PM |                     |              |
|------------------------|-------------------|--|---------------------|--------------|
| DII. Factor:           | 1.66<br>Dat Limit |  | Pot Analysis: 8/2/1 | 1 12:27 PM   |
| Compound               | (ppbv)            | (ppbv)                                 | (ug/m3)             | (ug/m3)      |
| Freon 12               | 0.17              | 0.47                                   | 0.82                | 2.3          |
| Freon 11               | 0.17              | 0.25                                   | 0.93                | 1.4          |
| Freon 113              | 0.17              | Not Detected                           | 1.3                 | Not Detected |
| 1,1-Dichloroethene     | 0.17              | Not Detected                           | 0.66                | Not Detected |
| Acetone                | 0.83              | 3.0                                    | 2.0                 | 7.1          |
| Methylene Chloride     | 0.33              | Not Detected                           | 1.2                 | Not Detected |
| cis-1,2-Dichloroethene | 0.17              | Not Detected                           | 0.66                | Not Detected |
| 1,1,1-Trichloroethane  | 0.17              | Not Detected                           | 0.90                | Not Detected |
| Benzene                | 0.17              | Not Detected                           | 0.53                | Not Detected |
| Toluene                | 0.17              | Not Detected                           | 0.62                | Not Detected |
| Tetrachloroethene      | 0.17              | Not Detected                           | 1.1                 | Not Detected |
| Chlorobenzene          | 0.17              | Not Detected                           | 0.76                | Not Detected |
| Ethyl Benzene          | 0.17              | Not Detected                           | 0.72                | Not Detected |
| m,p-Xylene             | 0.17              | Not Detected                           | 0.72                | Not Detected |
| o-Xylene               | 0.17              | Not Detected                           | 0.72                | Not Detected |
| 1,3-Dichlorobenzene    | 0.17              | Not Detected                           | 1.0                 | Not Detected |
| 1,4-Dichlorobenzene    | 0.17              | Not Detected                           | 1.0                 | Not Detected |
| 1,2-Dichlorobenzene    | 0.17              | Not Detected                           | 1.0                 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.83              | Not Detected                           | 6.2                 | Not Detected |

|                       | · · · · · | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 99        | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 97        | 70-130 |



# Client Sample ID: IA BG-24 Lab ID#: 1107511C-23B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080208sim<br>1.66   | Date of Collection: 7/26/11 3:19:00 PM<br>Date of Analysis: 8/2/11 12:27 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.017                | Not Detected  | 0.042                 | Not Detected      |
| Carbon Tetrachloride       | 0.033                | 0.054   | 0.21                  | 0.34              |
| Trichloroethene            | 0.033                | Not Detected  | 0.18                  | Not Detected      |

|                       | (         | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



# Client Sample ID: IA BG-38 Lab ID#: 1107511C-24A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080209<br>1.55      | Date of Collection: 7/26/11 3:45:00 PM<br>Date of Analysis: 8/2/11 01:02 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.49  | 0.77                  | 2.4               |
| Freon 11                   | 0.16                 | 0.41  | 0.87                  | 2.3               |
| Freon 113                  | 0.16                 | Not Detected  | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected  | 0.61                  | Not Detected      |
| Acetone                    | 0.78                 | 4.0   | 1.8                   | 9.6               |
| Methylene Chloride         | 0.31                 | 0.32  | 1.1                   | 1.1               |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected  | 0.61                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected  | 0.84                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected  | 0.50                  | Not Detected      |
| Toluene                    | 0.16                 | Not Detected  | 0.58                  | Not Detected      |
| Tetrachloroethene          | 0.16                 | 0.92  | 1.0                   | 6.2               |
| Chlorobenzene              | 0.16                 | Not Detected  | 0.71                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected  | 0.67                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected  | 0.67                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected  | 0.67                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected  | 0.93                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected  | 0.93                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected  | 0.93                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.78                 | Not Detected  | 5.8                   | Not Detected      |

|                       | · · · · · | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 98        | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 99        | 70-130 |



# Client Sample ID: IA BG-38 Lab ID#: 1107511C-24B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080209sim<br>1.55   | Date of Collection: 7/26/11 3:45:00 PM<br>Date of Analysis: 8/2/11 01:02 PM |                       | 26/11 3:45:00 PM<br>1 01:02 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.040                 | Not Detected                   |
| Carbon Tetrachloride       | 0.031                | 0.057   | 0.20                  | 0.36                           |
| Trichloroethene            | 0.031                | Not Detected  | 0.17                  | Not Detected                   |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



# Client Sample ID: IA BG-45 Lab ID#: 1107511C-25A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080210<br>1 53      | Date of Collection: 7/26/11 5:00:00 PM |                       |                   |
|----------------------------|----------------------|--|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.15                 | 0.54                                   | 0.76                  | 2.6               |
| Freon 11                   | 0.15                 | 0.32                                   | 0.86                  | 1.8               |
| Freon 113                  | 0.15                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.15                 | Not Detected                           | 0.61                  | Not Detected      |
| Acetone                    | 0.76                 | 4.9                                    | 1.8                   | 12                |
| Methylene Chloride         | 0.31                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.15                 | Not Detected                           | 0.61                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.15                 | Not Detected                           | 0.83                  | Not Detected      |
| Benzene                    | 0.15                 | Not Detected                           | 0.49                  | Not Detected      |
| Toluene                    | 0.15                 | 0.23                                   | 0.58                  | 0.86              |
| Tetrachloroethene          | 0.15                 | 0.19                                   | 1.0                   | 1.3               |
| Chlorobenzene              | 0.15                 | Not Detected                           | 0.70                  | Not Detected      |
| Ethyl Benzene              | 0.15                 | Not Detected                           | 0.66                  | Not Detected      |
| m,p-Xylene                 | 0.15                 | 0.18                                   | 0.66                  | 0.76              |
| o-Xylene                   | 0.15                 | Not Detected                           | 0.66                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.15                 | Not Detected                           | 0.92                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.15                 | Not Detected                           | 0.92                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.15                 | Not Detected                           | 0.92                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.76                 | Not Detected                           | 5.7                   | Not Detected      |

|                       | · · · · · | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 97        | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



# Client Sample ID: IA BG-45 Lab ID#: 1107511C-25B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080210sim<br>1.53   | Date of Collection: 7/26/11 5:00:00 PM<br>Date of Analysis: 8/2/11 01:43 PM |                       | 26/11 5:00:00 PM<br>11 01:43 PM |
|----------------------------|----------------------|---|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.015                | Not Detected  | 0.039                 | Not Detected                    |
| Carbon Tetrachloride       | 0.031                | 0.056   | 0.19                  | 0.35                            |
| Trichloroethene            | 0.031                | Not Detected  | 0.16                  | Not Detected                    |

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



# Client Sample ID: IA BH-40 Lab ID#: 1107511C-26A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080211<br>1.58      | Date of Collection: 7/26/11 4:40:00 PM<br>Date of Analysis: 8/2/11 02:25 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.16                 | 0.57  | 0.78                  | 2.8               |
| Freon 11                   | 0.16                 | 0.43  | 0.89                  | 2.4               |
| Freon 113                  | 0.16                 | Not Detected  | 1.2                   | Not Detected      |
| 1,1-Dichloroethene         | 0.16                 | Not Detected  | 0.63                  | Not Detected      |
| Acetone                    | 0.79                 | 4.7   | 1.9                   | 11                |
| Methylene Chloride         | 0.32                 | Not Detected  | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected  | 0.63                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected  | 0.86                  | Not Detected      |
| Benzene                    | 0.16                 | Not Detected  | 0.50                  | Not Detected      |
| Toluene                    | 0.16                 | Not Detected  | 0.60                  | Not Detected      |
| Tetrachloroethene          | 0.16                 | 1.2   | 1.1                   | 8.4               |
| Chlorobenzene              | 0.16                 | Not Detected  | 0.73                  | Not Detected      |
| Ethyl Benzene              | 0.16                 | Not Detected  | 0.69                  | Not Detected      |
| m,p-Xylene                 | 0.16                 | Not Detected  | 0.69                  | Not Detected      |
| o-Xylene                   | 0.16                 | Not Detected  | 0.69                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected  | 0.95                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected  | 0.95                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected  | 0.95                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.79                 | Not Detected  | 5.9                   | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 98        | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: IA BH-40 Lab ID#: 1107511C-26B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080211sim<br>1.58   | Date of Collection: 7/26/11 4:40:00 PM<br>Date of Analysis: 8/2/11 02:25 PM |                       | 26/11 4:40:00 PM<br>11 02:25 PM |
|----------------------------|----------------------|---|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.040                 | Not Detected                    |
| Carbon Tetrachloride       | 0.032                | 0.051   | 0.20                  | 0.32                            |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected                    |

|                       | (0        | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 102       | 70-130 |  |
| Toluene-d8            | 100       | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



# Client Sample ID: AA AC-15 Lab ID#: 1107511C-27A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080212              | Date of Collection: 7/26/11 3:35:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Dil. Factor:           | 1.62                 | Date of Analysis: 8/2/11 03:00 PM      |                       |                   |
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.54                                   | 0.80                  | 2.7               |
| Freon 11               | 0.16                 | 0.33                                   | 0.91                  | 1.8               |
| Freon 113              | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| Acetone                | 0.81                 | 3.3                                    | 1.9                   | 7.9               |
| Methylene Chloride     | 0.32                 | 0.33                                   | 1.1                   | 1.2               |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.88                  | Not Detected      |
| Benzene                | 0.16                 | 0.24                                   | 0.52                  | 0.78              |
| Toluene                | 0.16                 | 0.17                                   | 0.61                  | 0.65              |
| Tetrachloroethene      | 0.16                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.74                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.81                 | Not Detected                           | 6.0                   | Not Detected      |

|                       | · · · · · | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 108       | 70-130 |  |
| Toluene-d8            | 98        | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



# Client Sample ID: AA AC-15 Lab ID#: 1107511C-27B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080212sim<br>1.62   | Image: Sim         Date of Collection:         7/26/11 3:35:00 PM           1.62         Date of Analysis:         8/2/11 03:00 PM |                       | 26/11 3:35:00 PM<br>11 03:00 PM |
|----------------------------|----------------------|--|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)   | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.016                | 0.32   | 0.041                 | 0.83                            |
| Carbon Tetrachloride       | 0.032                | 0.085  | 0.20                  | 0.53                            |
| Trichloroethene            | 0.032                | Not Detected   | 0.17                  | Not Detected                    |

|                       | (0        | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 111       | 70-130 |  |
| Toluene-d8            | 98        | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



# Client Sample ID: AC MAU 72 Lab ID#: 1107511C-28A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:             | a080213              | Date of Collection: 7/26/11 3:30:00 PM |                       |                   |
|------------------------|----------------------|--|-----------------------|-------------------|
| Compound               | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)                       | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12               | 0.16                 | 0.51                                   | 0.80                  | 2.5               |
| Freon 11               | 0.16                 | 0.22                                   | 0.91                  | 1.2               |
| Freon 113              | 0.16                 | Not Detected                           | 1.2                   | Not Detected      |
| 1,1-Dichloroethene     | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| Acetone                | 0.81                 | 2.5                                    | 1.9                   | 6.0               |
| Methylene Chloride     | 0.32                 | Not Detected                           | 1.1                   | Not Detected      |
| cis-1,2-Dichloroethene | 0.16                 | Not Detected                           | 0.64                  | Not Detected      |
| 1,1,1-Trichloroethane  | 0.16                 | Not Detected                           | 0.88                  | Not Detected      |
| Benzene                | 0.16                 | Not Detected                           | 0.52                  | Not Detected      |
| Toluene                | 0.16                 | Not Detected                           | 0.61                  | Not Detected      |
| Tetrachloroethene      | 0.16                 | Not Detected                           | 1.1                   | Not Detected      |
| Chlorobenzene          | 0.16                 | Not Detected                           | 0.74                  | Not Detected      |
| Ethyl Benzene          | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| m,p-Xylene             | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| o-Xylene               | 0.16                 | Not Detected                           | 0.70                  | Not Detected      |
| 1,3-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,4-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2-Dichlorobenzene    | 0.16                 | Not Detected                           | 0.97                  | Not Detected      |
| 1,2,4-Trichlorobenzene | 0.81                 | Not Detected                           | 6.0                   | Not Detected      |

|                       | · · · ·   | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 105       | 70-130 |  |
| Toluene-d8            | 97        | 70-130 |  |
| 4-Bromofluorobenzene  | 98        | 70-130 |  |



# Client Sample ID: AC MAU 72 Lab ID#: 1107511C-28B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080213sim<br>1.62   | Date of Collection: 7/26/11 3:30:00 PM<br>Date of Analysis: 8/2/11 03:35 PM |                       | 26/11 3:30:00 PM<br>11 03:35 PM |
|----------------------------|----------------------|---|-----------------------|---------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)               |
| Vinyl Chloride             | 0.016                | Not Detected  | 0.041                 | Not Detected                    |
| Carbon Tetrachloride       | 0.032                | 0.069   | 0.20                  | 0.43                            |
| Trichloroethene            | 0.032                | Not Detected  | 0.17                  | Not Detected                    |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 111       | 70-130 |  |
| Toluene-d8            | 98        | 70-130 |  |
| 4-Bromofluorobenzene  | 99        | 70-130 |  |



# Client Sample ID: FB-01 Lab ID#: 1107511C-29A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080214<br>1.66      | Date of Collection: 7/26/11 8:20:00 PM<br>Date of Analysis: 8/2/11 04:10 PM |                       |                   |
|----------------------------|----------------------|---|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.17                 | Not Detected  | 0.82                  | Not Detected      |
| Freon 11                   | 0.17                 | Not Detected  | 0.93                  | Not Detected      |
| Freon 113                  | 0.17                 | Not Detected  | 1.3                   | Not Detected      |
| 1,1-Dichloroethene         | 0.17                 | Not Detected  | 0.66                  | Not Detected      |
| Acetone                    | 0.83                 | Not Detected  | 2.0                   | Not Detected      |
| Methylene Chloride         | 0.33                 | Not Detected  | 1.2                   | Not Detected      |
| cis-1,2-Dichloroethene     | 0.17                 | Not Detected  | 0.66                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.17                 | Not Detected  | 0.90                  | Not Detected      |
| Benzene                    | 0.17                 | Not Detected  | 0.53                  | Not Detected      |
| Toluene                    | 0.17                 | Not Detected  | 0.62                  | Not Detected      |
| Tetrachloroethene          | 0.17                 | Not Detected  | 1.1                   | Not Detected      |
| Chlorobenzene              | 0.17                 | Not Detected  | 0.76                  | Not Detected      |
| Ethyl Benzene              | 0.17                 | Not Detected  | 0.72                  | Not Detected      |
| m,p-Xylene                 | 0.17                 | Not Detected  | 0.72                  | Not Detected      |
| o-Xylene                   | 0.17                 | Not Detected  | 0.72                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,4-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2-Dichlorobenzene        | 0.17                 | Not Detected  | 1.0                   | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.83                 | Not Detected  | 6.2                   | Not Detected      |

|                       | , , , , , , , , , , , , , , , , , , , | Method |
|-----------------------|---------------------------------------|--------|
| Surrogates            | %Recovery                             | Limits |
| 1,2-Dichloroethane-d4 | 95                                    | 70-130 |
| Toluene-d8            | 98                                    | 70-130 |
| 4-Bromofluorobenzene  | 97                                    | 70-130 |



# Client Sample ID: FB-01 Lab ID#: 1107511C-29B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080214sim<br>1.66   | Date of Collection: 7/26/11 8:20:00 PM<br>Date of Analysis: 8/2/11 04:10 PM |                       | 26/11 8:20:00 PM<br>1 04:10 PM |
|----------------------------|----------------------|---|-----------------------|--------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv)  | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)              |
| Vinyl Chloride             | 0.017                | 0.068   | 0.042                 | 0.17                           |
| Carbon Tetrachloride       | 0.033                | Not Detected  | 0.21                  | Not Detected                   |
| Trichloroethene            | 0.033                | Not Detected  | 0.18                  | Not Detected                   |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 99        | 70-130 |  |
| Toluene-d8            | 99        | 70-130 |  |
| 4-Bromofluorobenzene  | 97        | 70-130 |  |



# Client Sample ID: FB-02 Lab ID#: 1107511C-30A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080215              | Date             | e of Collection: 7/2  | 6/11 8:17:00 PM<br>1 04:45 PM |
|----------------------------|----------------------|------------------|-----------------------|-------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3)             |
| Freon 12                   | 0.16                 | Not Detected     | 0.80                  | Not Detected                  |
| Freon 11                   | 0.16                 | Not Detected     | 0.90                  | Not Detected                  |
| Freon 113                  | 0.16                 | Not Detected     | 1.2                   | Not Detected                  |
| 1,1-Dichloroethene         | 0.16                 | Not Detected     | 0.64                  | Not Detected                  |
| Acetone                    | 0.80                 | Not Detected     | 1.9                   | Not Detected                  |
| Methylene Chloride         | 0.32                 | Not Detected     | 1.1                   | Not Detected                  |
| cis-1,2-Dichloroethene     | 0.16                 | Not Detected     | 0.64                  | Not Detected                  |
| 1,1,1-Trichloroethane      | 0.16                 | Not Detected     | 0.88                  | Not Detected                  |
| Benzene                    | 0.16                 | Not Detected     | 0.51                  | Not Detected                  |
| Toluene                    | 0.16                 | Not Detected     | 0.61                  | Not Detected                  |
| Tetrachloroethene          | 0.16                 | Not Detected     | 1.1                   | Not Detected                  |
| Chlorobenzene              | 0.16                 | Not Detected     | 0.74                  | Not Detected                  |
| Ethyl Benzene              | 0.16                 | Not Detected     | 0.70                  | Not Detected                  |
| m,p-Xylene                 | 0.16                 | Not Detected     | 0.70                  | Not Detected                  |
| o-Xylene                   | 0.16                 | Not Detected     | 0.70                  | Not Detected                  |
| 1,3-Dichlorobenzene        | 0.16                 | Not Detected     | 0.97                  | Not Detected                  |
| 1,4-Dichlorobenzene        | 0.16                 | Not Detected     | 0.97                  | Not Detected                  |
| 1,2-Dichlorobenzene        | 0.16                 | Not Detected     | 0.97                  | Not Detected                  |
| 1,2,4-Trichlorobenzene     | 0.80                 | Not Detected     | 6.0                   | Not Detected                  |

|                       | ,<br>,    | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 95        | 70-130 |
| Toluene-d8            | 101       | 70-130 |
| 4-Bromofluorobenzene  | 97        | 70-130 |



# Client Sample ID: FB-02 Lab ID#: 1107511C-30B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

| File Name:<br>Dil. Factor: | a080215sim<br>1.61   | Date<br>Date     | of Collection: 7/2<br>of Analysis: 8/2/1 | 6/11 8:17:00 PM<br>1 04:45 PM |
|----------------------------|----------------------|------------------|--|-------------------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)                    | Amount<br>(ug/m3)             |
| Vinyl Chloride             | 0.016                | Not Detected     | 0.041                                    | Not Detected                  |
| Carbon Tetrachloride       | 0.032                | Not Detected     | 0.20                                     | Not Detected                  |
| Trichloroethene            | 0.032                | Not Detected     | 0.17                                     | Not Detected                  |

|                       |           | Method<br>Limits |
|-----------------------|-----------|------------------|
| Surrogates            | %Recovery |                  |
| 1,2-Dichloroethane-d4 | 100       | 70-130           |
| Toluene-d8            | 100       | 70-130           |
| 4-Bromofluorobenzene  | 98        | 70-130           |



# Client Sample ID: Lab Blank Lab ID#: 1107511C-31A MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

٦

| File Name:<br>Dil. Factor: | a080205<br>1.00      | Date             | of Collection: NA     | 1 10:36 AM        |
|----------------------------|----------------------|------------------|-----------------------|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3) | Amount<br>(ug/m3) |
| Freon 12                   | 0.10                 | Not Detected     | 0.49                  | Not Detected      |
| Freon 11                   | 0.10                 | Not Detected     | 0.56                  | Not Detected      |
| Freon 113                  | 0.10                 | Not Detected     | 0.77                  | Not Detected      |
| 1,1-Dichloroethene         | 0.10                 | Not Detected     | 0.40                  | Not Detected      |
| Acetone                    | 0.50                 | Not Detected     | 1.2                   | Not Detected      |
| Methylene Chloride         | 0.20                 | Not Detected     | 0.69                  | Not Detected      |
| cis-1,2-Dichloroethene     | 0.10                 | Not Detected     | 0.40                  | Not Detected      |
| 1,1,1-Trichloroethane      | 0.10                 | Not Detected     | 0.54                  | Not Detected      |
| Benzene                    | 0.10                 | Not Detected     | 0.32                  | Not Detected      |
| Toluene                    | 0.10                 | Not Detected     | 0.38                  | Not Detected      |
| Tetrachloroethene          | 0.10                 | Not Detected     | 0.68                  | Not Detected      |
| Chlorobenzene              | 0.10                 | Not Detected     | 0.46                  | Not Detected      |
| Ethyl Benzene              | 0.10                 | Not Detected     | 0.43                  | Not Detected      |
| m,p-Xylene                 | 0.10                 | Not Detected     | 0.43                  | Not Detected      |
| o-Xylene                   | 0.10                 | Not Detected     | 0.43                  | Not Detected      |
| 1,3-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60                  | Not Detected      |
| 1,4-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60                  | Not Detected      |
| 1,2-Dichlorobenzene        | 0.10                 | Not Detected     | 0.60                  | Not Detected      |
| 1,2,4-Trichlorobenzene     | 0.50                 | Not Detected     | 3.7                   | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 96        | 70-130 |
| Toluene-d8            | 99        | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: Lab Blank Lab ID#: 1107511C-31B MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

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| File Name:<br>Dil. Factor: | a080205sim<br>1.00   | Date<br>Date     | e of Collection: NA<br>e of Analysis: 8/2/1 | 1 10:36 AM        |
|----------------------------|----------------------|------------------|---|-------------------|
| Compound                   | Rpt. Limit<br>(ppbv) | Amount<br>(ppbv) | Rpt. Limit<br>(ug/m3)                       | Amount<br>(ug/m3) |
| Vinyl Chloride             | 0.010                | Not Detected     | 0.026                                       | Not Detected      |
| Carbon Tetrachloride       | 0.020                | Not Detected     | 0.12  | Not Detected      |
| Trichloroethene            | 0.020                | Not Detected     | 0.11  | Not Detected      |

|                       |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 101       | 70-130 |
| Toluene-d8            | 100       | 70-130 |
| 4-Bromofluorobenzene  | 98        | 70-130 |



# Client Sample ID: CCV Lab ID#: 1107511C-32A

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

٦

| File Name:<br>Dil. Factor: | a080202<br>1.00 | Date of Collection: NA<br>Date of Analysis: 8/2/11 07:55 AM |
|----------------------------|-----------------|---|
|                            |                 |   |
| Compound                   |                 | %Recovery   |
| Freon 12                   |                 | 100   |
| Freon 11                   |                 | 99  |
| Freon 113                  |                 | 93  |
| 1,1-Dichloroethene         |                 | 89  |
| Acetone                    |                 | 98  |
| Methylene Chloride         |                 | 88  |
| cis-1,2-Dichloroethene     |                 | 90  |
| 1,1,1-Trichloroethane      |                 | 92  |
| Benzene                    |                 | 99  |
| Toluene                    |                 | 96  |
| Tetrachloroethene          |                 | 91  |
| Chlorobenzene              |                 | 91  |
| Ethyl Benzene              |                 | 91  |
| m,p-Xylene                 |                 | 89  |
| o-Xylene                   |                 | 90  |
| 1,3-Dichlorobenzene        |                 | 82  |
| 1,4-Dichlorobenzene        |                 | 82  |
| 1,2-Dichlorobenzene        |                 | 78  |
| 1,2,4-Trichlorobenzene     |                 | 84  |

| 21 11                 |           | Method |
|-----------------------|-----------|--------|
| Surrogates            | %Recovery | Limits |
| 1,2-Dichloroethane-d4 | 105       | 70-130 |
| Toluene-d8            | 102       | 70-130 |
| 4-Bromofluorobenzene  | 100       | 70-130 |



# Client Sample ID: CCV Lab ID#: 1107511C-32B

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

| File Name:<br>Dil. Factor: | a080202sim<br>1.00 | Date of Collect<br>Date of Analy | ction: NA<br>sis:  8/2/11 07:55 AM |
|----------------------------|--------------------|----------------------------------|------------------------------------|
| Compound                   |                    |                                  | %Recovery                          |
| Vinyl Chloride             |                    |                                  | 100                                |
| Carbon Tetrachloride       |                    |                                  | 104                                |
| Trichloroethene            |                    |                                  | 86                                 |
| Container Type: NA - No    | t Applicable       |                                  |                                    |
| •                          |                    |                                  | Method                             |
| Surrogates                 |                    | %Recovery                        | Limits                             |
| 1,2-Dichloroethane-d4      |                    | 107                              | 70-130                             |
| Toluene-d8                 |                    | 101                              | 70-130                             |
| 4-Bromofluorobenzene       |                    | 99                               | 70-130                             |



# Client Sample ID: LCS Lab ID#: 1107511C-33A

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

1

| File Name:             | a080203 | Date of Collection: NA            |
|------------------------|---------|-----------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 8/2/11 08:45 AM |
|                        |         |                                   |
| Compound               |         | %Recovery                         |
| Freon 12               |         | 104                               |
| Freon 11               |         | 104                               |
| Freon 113              |         | 99                                |
| 1,1-Dichloroethene     |         | 98                                |
| Acetone                |         | 104                               |
| Methylene Chloride     |         | 91                                |
| cis-1,2-Dichloroethene |         | 95                                |
| 1,1,1-Trichloroethane  |         | 98                                |
| Benzene                |         | 100                               |
| Toluene                |         | 95                                |
| Tetrachloroethene      |         | 94                                |
| Chlorobenzene          |         | 95                                |
| Ethyl Benzene          |         | 95                                |
| m,p-Xylene             |         | 95                                |
| o-Xylene               |         | 96                                |
| 1,3-Dichlorobenzene    |         | 89                                |
| 1,4-Dichlorobenzene    |         | 90                                |
| 1,2-Dichlorobenzene    |         | 88                                |
| 1,2,4-Trichlorobenzene |         | 112                               |

| 21 11                 |           | Method |  |  |
|-----------------------|-----------|--------|--|--|
| Surrogates            | %Recovery | Limits |  |  |
| 1,2-Dichloroethane-d4 | 106       | 70-130 |  |  |
| Toluene-d8            | 99        | 70-130 |  |  |
| 4-Bromofluorobenzene  | 103       | 70-130 |  |  |



# Client Sample ID: LCSD Lab ID#: 1107511C-33AA

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

1

| File Name:             | a080204 | Date of Collection: NA            |
|------------------------|---------|-----------------------------------|
| Dil. Factor:           | 1.00    | Date of Analysis: 8/2/11 09:23 AM |
| Compound               |         | %Recovery                         |
| Freon 12               |         | 95                                |
| Freon 11               |         | 96                                |
| Freon 113              |         | 86                                |
| 1,1-Dichloroethene     |         | 88                                |
| Acetone                |         | 94                                |
| Methylene Chloride     |         | 86                                |
| cis-1,2-Dichloroethene |         | 84                                |
| 1,1,1-Trichloroethane  |         | 86                                |
| Benzene                |         | 97                                |
| Toluene                |         | 93                                |
| Tetrachloroethene      |         | 88                                |
| Chlorobenzene          |         | 91                                |
| Ethyl Benzene          |         | 90                                |
| m,p-Xylene             |         | 89                                |
| o-Xylene               |         | 92                                |
| 1,3-Dichlorobenzene    |         | 85                                |
| 1,4-Dichlorobenzene    |         | 84                                |
| 1,2-Dichlorobenzene    |         | 82                                |
| 1,2,4-Trichlorobenzene |         | 104                               |
| Carbon Tetrachloride   |         | 93                                |
| Vinyl Chloride         |         | 97                                |
| Trichloroethene        |         | 88                                |

|                       |           | Method |  |
|-----------------------|-----------|--------|--|
| Surrogates            | %Recovery | Limits |  |
| 1,2-Dichloroethane-d4 | 99        | 70-130 |  |
| Toluene-d8            | 102       | 70-130 |  |
| 4-Bromofluorobenzene  | 100       | 70-130 |  |



# Client Sample ID: LCS Lab ID#: 1107511C-33B

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

| File Name:<br>Dil. Factor: | ame: a080203sim<br>actor: 1.00 |           | Date of Collection: NA<br>Date of Analysis: 8/2/11 08:45 AM |  |  |
|----------------------------|--------------------------------|-----------|---|--|--|
| Compound                   |                                |           | %Recovery   |  |  |
| Vinyl Chloride             |                                |           | 106   |  |  |
| Carbon Tetrachloride       |                                |           | 111   |  |  |
| Trichloroethene            |                                |           | 90  |  |  |
| Container Type: NA - Not   | Applicable                     |           |   |  |  |
|                            |                                |           | Method  |  |  |
| Surrogates                 |                                | %Recovery | Limits  |  |  |
| 1,2-Dichloroethane-d4      |                                | 108       | 70-130  |  |  |
| Toluene-d8                 |                                | 100       | 70-130  |  |  |
| 4-Bromofluorobenzene       |                                | 101       | 70-130  |  |  |



# Client Sample ID: LCSD Lab ID#: 1107511C-33BB

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

| File Name:               | a080204sim | ction: NA                          |           |  |  |
|--------------------------|------------|------------------------------------|-----------|--|--|
| Dil. Factor:             | 1.00       | 1.00 Date of Analysis: 8/2/11 09:2 |           |  |  |
|                          |            |                                    |           |  |  |
| Compound                 |            |                                    | %Recovery |  |  |
| Vinyl Chloride           |            |                                    | 102       |  |  |
| Carbon Tetrachloride     |            |                                    | 101       |  |  |
| Trichloroethene          |            |                                    | 85        |  |  |
| Container Type: NA - Not | Applicable |                                    |           |  |  |
|                          |            |                                    | Method    |  |  |
| Surrogates               |            | %Recovery                          | Limits    |  |  |
| 1,2-Dichloroethane-d4    |            | 104                                | 70-130    |  |  |
| Toluene-d8               |            | 102                                | 70-130    |  |  |
| 4-Bromofluorobenzene     |            | 101                                | 70-130    |  |  |

# **APPENDIX E**

# **DATA VALIDATION REPORT**

SANBORN II HEAD ENGINEERING



# **Data Usability Report**

# Method TO-15 Hi/Lo Analysis

| Client/Company:                        | Sanborn, Head, & Associates, Inc., Concord, New Hampshire (SHA)  |
|--|--|
| Site/Project Name:                     | IBM – East Fishkill Facility, Hopewell Junction, New York  |
| Laboratory:                            | Air Toxics Ltd, Folsom, California (ATL)   |
| Work Orders:                           | <u>1107511A, 1107511B &amp; 1107511C</u>   |
| Date(s) of Collection:                 | <u>July 26, 2011</u>   |
| Number and Type<br>Samples & Analyses: | 26 Indoor Air, 2 Ambient Air, and 2 Field Blank samples for twenty-two project-specific VOCs by Method TO-15 Hi/Lo |
| Senior Data Reviewers:                 | Dr. Nancy C. Rothman, New Environmental Horizons, Inc.<br>Susan D. Chapnick, New Environmental Horizons, Inc.      |
| Date Completed:                        | <u>September 2, 2011</u>   |

This Data Usability Report was performed on the Work Orders identified with the following intentions: 1) to determine if the data were generated and reported in accordance with the *Work Plan, RCRA Facility Investigation (RFI), VOC Source Assessment IBM East Fishkill Facility, Hopewell Junction, New York,* prepared by Sanborn, Head & Associates, June 2009; NYSDEC Analytical Services Protocol, June 2005 with NYSDEC Modifications to the EPA Region 9 TO-15 QA/QC Criteria, February 2008; USEPA Region II SOP HW-31, *Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15,* Rev. 4, October 2006; Method TO-15, *Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS),* Publication EPA/625/R-96/010b, January 1999; and *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*; Publication USEPA540/R-07/003, July 2007; 2) to determine if the data met project data quality objectives for acceptable accuracy, precision, sensitivity; and technical usability; and 3) to update the project database with appropriate data quality qualifiers.

34 Pheasant Run Drive, Skillman, NJ 08558 ◊ 2 Farmers Circle, Arlington, MA 02474 Phone: (908) 874-5686 ◊ (781) 643-4294 Email: nrothman\_neh@comcast.net ◊ s.chapnick@comcast.net www.neh-inc.com

# I. Sample Descriptions and Analytical Parameters

The sample IDs, date of sampling, identification of Matrix Spike (MS), Matrix Spike Duplicate (MSD), Matrix Duplicate (MD), Field Duplicate (FD), Field Equipment Blank (EB), and Trip Blank (TB), if applicable and the analytical parameters reviewed are listed in Table 1.

| Sample ID | Lab Sample ID | Collection<br>Date | Matrix Analytical<br>Parameters |      | Sample Type                    |
|-----------|---------------|--------------------|---------------------------------|------|--------------------------------|
| IA AR-27  | 1107511A-01A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA AR-28  | 1107511A-02A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA AP-30  | 1107511A-03A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA AY-35  | 1107511A-04A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA AY-43  | 1107511A-05A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BA-28  | 1107511A-06A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BA-39  | 1107511A-07A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BA-44  | 1107511A-08A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BB-24  | 1107511A-09A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BB-37  | 1107511A-10A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BB-39  | 1107511B-11A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| DUP34437  | 1107511B-12A  | 7/26/2011          | Indoor Air                      | VOCs | Field Duplicate of<br>IA BB-39 |
| IA BB-40  | 1107511B-13A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BC-32  | 1107511B-14A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BD-25  | 1107511B-15A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BE-23  | 1107511B-16A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BE-28  | 1107511B-17A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| IA BF-24  | 1107511B-18A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |
| DUP23989  | 1107511B-19A  | 7/26/2011          | Indoor Air                      | VOCs | Field Duplicate of<br>IA BF-24 |
| IA BF-34  | 1107511B-20A  | 7/26/2011          | Indoor Air                      | VOCs | Field Sample                   |

Table 1. Sample Descriptions and Analytical Parameters

| Sample ID | Lab Sample ID | Collection<br>Date | Matrix      | Analytical<br>Parameters | Sample Type  |
|-----------|---------------|--------------------|-------------|--------------------------|--------------|
| IA BG-22  | 1107511C-21A  | 7/26/2011          | Indoor Air  | VOCs                     | Field Sample |
| IA BG-23  | 1107511C-22A  | 7/26/2011          | Indoor Air  | VOCs                     | Field Sample |
| IA BG-24  | 1107511C-23A  | 7/26/2011          | Indoor Air  | VOCs                     | Field Sample |
| IA BG-38  | 1107511C-24A  | 7/26/2011          | Indoor Air  | VOCs                     | Field Sample |
| IA BG-45  | 1107511C-25A  | 7/26/2011          | Indoor Air  | VOCs                     | Field Sample |
| IA BH-40  | 1107511C-26A  | 7/26/2011          | Indoor Air  | VOCs                     | Field Sample |
| AA AC-15  | 1107511C-27A  | 7/26/2011          | Ambient Air | VOCs                     | Field Sample |
| AC MAU 72 | 1107511C-28A  | 7/26/2011          | Ambient Air | VOCs                     | Field Sample |
| FB-01     | 1107511C-29A  | 7/26/2011          | Air         | VOCs                     | Field Blank  |
| FB-02     | 1107511C-30A  | 7/26/2011          | Air         | VOCs                     | Field Blank  |

 Table 1. Sample Descriptions and Analytical Parameters
 - continued

Analytical method reference:

VOC: TO-15 Hi/Lo – Method TO-15 with simultaneous Full Scan and Selected Ion Monitoring (SIM) analysis for twenty-two project-specific VOCs

# II. Data Deficiencies, Analytical Protocol Deviations, and Quality Control Problems

This Data Usability Report represents a review of sample results and summary QC (method and matrix) only for an evaluation of accuracy, precision, and sensitivity. A full In-Depth Review of results, QC, and raw data was performed for this project for Work Orders 0907203AR1 and 0907203BR1 (NEH, 08/13/09).

The following QC elements, as applicable to the analytical methods, were reviewed:

- Data package completeness and reporting protocols
- Sample receipt, holding times, and canister condition
- Calibration criteria (instrument tuning, initial and continuing calibration verifications)
- Method and field blank results
- Laboratory Control Sample (LCS) recoveries
- Surrogate Recoveries
- Internal Standard (IS) Recoveries
- Sample/Laboratory Duplicate (LD) or sample/Field Duplicate (FD) Relative Percent Differences (RPDs)

- Sample result reporting (including reporting limits and units)
- Other method-specific QC if applicable and reported
- Deficiencies or protocol deviations as noted in the Laboratory Narrative

During this review of VOCs, several results were estimated (J, UJ, and EB) due to QC issues. Table 2 summarizes the actions taken during this review. NEH generated validated data spreadsheets based on the electronic project database files received from ATL for these Work Orders. There were no rejected results; therefore, all results were considered acceptable compared to QAPP and method criteria, with the understanding of the potential uncertainty (bias) in the qualified results.

A single Chain-of-Custody (COC) was submitted to ATL; however, the laboratory split the samples into three Work Orders: 1107511A, 1107511B, and 1107511C.

The COC indicated that sample IA BG-38 was collected in canister #33815 but the number on canister tag for this sample was #33895. Canister certifications (found in Work Order 1107511A) verified that there was no canister #33815 associated with this project and that indeed #33895 was sent out to the field for sample collection. The laboratory used the number from the canister tag (#33895) for association with this sample, IA BG-38.

The laboratory reported results for all 22 compounds listed in Table B.1 of the Work Plan from a single analysis with two mass spectrometer (MS) detectors, each operated in a different detection mode: one operated in the full scan electron impact mode and the other operated in the Selected Ion Monitoring (SIM) mode. This analysis, called TO-15 Hi/Lo by ATL, allowed the sensitivity requirements of the project, unless otherwise discussed in this report, to be met for all of the compounds. All compounds except trichloroethene, vinyl chloride, and carbon tetrachloride were reported using the full scan detector while SIM analysis was used for these three compounds. The full scan analysis was reported with an "A" suffix and the SIM analysis with a "B" suffix appended to the laboratory sample ID.

Field duplicate (FD) precision, based on results of the two FD pair samples IA BB-39 / DUP34437 and IA BF-24 / DUP23989, was acceptable for all VOCs. The FD results are an indication of acceptable precision for field collection through analysis for these air samples.

Sensitivity requirements compared to the Reporting Limits (RLs) defined in Table B.1 of the Workplan were met for all samples in these Work Orders.

All other quality control information associated with accuracy, precision, and sensitivity for the project-specific list of VOCs reported met project criteria for the samples in these Work Orders with the exceptions included in Table 2.

| Field Sample ID   | Analyte             | Qualifier | Bias | Validation Comments                          |
|---|---------------------|-----------|------|--|
| IA AR-27,<br>IA AR-28,<br>IA AP-30,<br>IA AY-35,<br>IA AY-43,<br>IA BA-28,<br>IA BA-28,<br>IA BA-39,<br>IA BA-39,<br>IA BA-44,<br>IA BB-24,<br>IA BB-37,<br>IA BG-22,<br>IA BG-23,<br>IA BG-23,<br>IA BG-24,<br>IA BG-38,<br>IA BG-45,<br>IA BH-40,<br>AA AC-15,<br>AC MAU 72,<br>FB-01, &<br>FB-02 | 1,2-Dichlorobenzene | UJ        | Ι    | Initial Calibration outside<br>criteria      |
| IA BB-37  | Toluene             | J         | Ι    | Result uncertain below the calibration range |
| AA AC-15  | Vinyl Chloride      | EB        | Н    | Equipment Blank Action                       |

Table 2. Summary of Data Validation Actions

Qualifiers: U = Analyte is non-detect at or above the sample-specific practical quantitation limit (PQL); UJ = Non-detect is estimated at the PQL; J = Result is estimated; EB = Analyte was also present in a non-matrix matched Field Equipment Blank; TB = Analyte was also present in a non-matrix matched Trip Blank; N = there is presumptive evidence for the TIC identification; R= Result is rejected and is unusable for project decisions.

*Bias:* L = Low; H = High; I = Indeterminate

The attached Data Review Checklists, completed for each Work Order reviewed, document the method and matrix-specific QC reviewed and the issues that required action (as listed in Table 2) or affected the data certainty in terms of data quality objectives (DQO) of accuracy, precision, and sensitivity.

#### IBM - East Fishkill Facility, Hopewell Junction, New York Air Data Review Checklist

Lab: <u>Air Toxics Ltd.</u> Date Sampled: <u>7/26/11</u> Method of Analysis: TO-15 Hi/Lo Work Order #:1107511ANo. Samples10 IA Samples

| Data       |              |              | GC/MS   |                 |              |              |            |                       |
|------------|--------------|--------------|---|-----------------|--------------|--------------|------------|-----------------------|
| Element    | Canister     |              | Tunes +   | Internal Stds + |              | Lab Dup      | Field      | RL                    |
| Acceptable | Receipt      | HT           | Calibrations  | Surrogates      | LCS          | (LCS and LD) | Duplicates | & Quant.              |
| Yes        | $\checkmark$ | $\checkmark$ |   | $\checkmark$    | $\checkmark$ | 1            | NA         |                       |
| No         |              |              | Estimated (UJ)<br>1,2-Dichloro-<br>benzene in all<br>10 samples |                 |              |              |            | Accept 1<br>"J" value |

Comments: A combined Full Scan and SIM Analysis was performed for each sample for 22 Project-specific VOCs listed in Table B.1 of the Work Plan,

as shown on page 5 of this checklist. The full scan analysis was reported with an "A" suffix and the SIM analysis with a "B" suffix appended

to the laboratory sample ID.

The samples received were separated into three Work Orders (1107511A, 1107511B, and 1107511C). A single report will be written, at the clients request, for all three Work Orders.

10 Canisters were Certified pre-cleaned - certificates of analysis within data package.

The canister vacuums (field initial, field final and lab receipt) were all acceptable; therefore, no action required. There were no COC issues noted by lab upon sample receipt either.

Samples were all analyzed on 8/1/11 (within 6 days of collection); therefore HT was met. No Action required.

*ICALs* : Instrument A Full Scan and SIM performed on 7/13/11. Full Scan = 6- to 8-level calibration from 0.05, 0.1, or 0.5 to 40 ppbV for 19 Target compounds (see page 5). SIM = 9- to 10-level calibration from 0.003 or 0.01 to 20 ppbV for 3 Targets. %RSD  $\leq$  30% for all 22 Target Compounds except 1,2-dichlorobenzene %RSD = 33.429%. RLs reported (0.1 ppbV for all 19 Full Scan Targets except Acetone and 1,2,4-Trichlorobenzene at 0.5 ppbV and Methylene Chloride at 0.2 ppbV; and 0.01 ppbV for Vinyl Chloride and 0.02 ppbV for Carbon Tetrachloride and Trichloroethene by SIM for DF=1 analysis) were supported by the ICALs.

\*ACTION: 1,2-Dichlorobenzene estimated (UJ) in all samples with indeterminate bias due to the Initial Calibration being outside criteria
Lab: <u>Air Toxics Ltd.</u>

Work Order #:

1107511A

Method of Analysis: TO-15 Hi/Lo

Associated Blanks: Method Blank: a080106 (Full Scan and SIM)

Field Blanks: FB-01 & FB-02 (reported in Work Order 1107511C)

| Blank ID | Contaminant / Level $(\mu g/m^3)$     | Action Level |   | Sample and reported result (ug/m3)           | Corrected<br>Database<br>Result |
|----------|---------------------------------------|--------------|---|--|---------------------------------|
| a080106  | None                                  |              |   | No Blank Action Required                     | result                          |
|          |                                       |              |   |  |                                 |
| FB-02    | None                                  |              |   | No Blank Action Required                     |                                 |
| FB-01    | Vinyl Chloride 0.17 µg/m <sup>3</sup> | 0.85 µg/m3   | 1 | All samples were non-detect - No Blank Actio | n required                      |
|          |                                       | (DF=1.66)    |   |  |                                 |
|          |                                       |              |   |  |                                 |
|          |                                       |              |   |  |                                 |
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|          |                                       |              |   |  |                                 |
|          |                                       |              |   |  |                                 |

Lab: <u>Air Toxics Ltd.</u>

Work Order #:

1107511A

Method of Analysis: TO-15 Hi/Lo

Additional Notes:

CCALs: a080102 and a080102sim - % Recovery 70-130% for all 22 Target compounds - No Action required.

*BFB Tunes:* Instrument A 3 Tunes (2 for ICAL + 1 for CCAL) - all criteria in all tunes were met and all samples were analyzed within 12 hours of tune; therefore, No Action Required.

Surrogates & Internal Standards: All 3 Surrogates had % Recovery within criteria and all IS' had areas and RTs within criteria; therefore, No Action Required.

*LCS/LCSD* : a080103/a080104 & a080103sim/a080104sim - %Recovery acceptable for all 22 Targets in LCS and LCSD; therefore, acceptable accuracy for method demonstrated. LCS/LCSD precision (RPD) acceptable for all 22 targets as well. Note that a080103 reported only 19 targets (full scan) and a080104 reported 22 target (includes 3 targets reported for this project by SIM); therefore, duplicate comparison, as reported in the pdf report for this LCS/LCSD, for these 3 compounds appears to be unacceptable since they are reported as non-detect in a080103 but these compounds were actually not analyzed in this LCS. No Action required.

LD analysis not performed for the samples in this Work Order. LCS/LCSD reported instead, which reported acceptable precision. No Action required.

FD Pair: There were no Field Duplicates associated with the samples in this Work Order. Please see Work Order 1107511B where 2FDs are reported.

One toluene result was reported at < RL and qualified "J" by the lab. This result was accepted with indeterminate bias due to uncertainty in quantitation due to reporting below the instrument calibration range.

All reporting limits were at a level below the Project required RL (as shown in Table 5); therefore, all results are considered usable as reported.

The narrative did not raise any additional issues that may affect data quality.

Lab: Air Toxics Ltd.

# Compound List and Project-required Reporting Limits (RL)

|   | Full Scan     |                  |
|---|---------------|------------------|
| Target Analyte Name                               | (Full) or SIM | RL $(\mu g/m^3)$ |
| Tetrachloroethene (PCE)                           | Full          | 1.4              |
| Trichloroethene (TCE)                             | SIM           | 0.22             |
| cis-1,2-Dichloroethene (cDCE)                     | Full          | 0.8              |
| 1,1-Dichloroethene (DCE)                          | Full          | 0.8              |
| Vinyl chloride (VC)                               | SIM           | 0.06             |
| 1,1,1-Trichloroethane (TCA)                       | Full          | 1.1              |
| Carbon Tetrachloride                              | SIM           | 0.2              |
| Methylene chloride (MeCL)                         | Full          | 1.4              |
| Chlorobenzene                                     | Full          | 0.92             |
| 1,2,4-Trichlorobenzene                            | Full          | 7.4              |
| 1,2-Dichlorobenzene                               | Full          | 1.2              |
| 1,3-Dichlorobenzene                               | Full          | 1.2              |
| 1,4-Dichlorobenzene                               | Full          | 1.2              |
| Acetone   | Full          | 2.4              |
| Benzene   | Full          | 0.64             |
| Ethylbenzene                                      | Full          | 0.86             |
| m-Xylene  | Full          | 0.86             |
| p-Xylene  | 1'uii         | 0.80             |
| o-Xylene  | Full          | 0.86             |
| Toluene   | Full          | 0.77             |
| Trichlorofluoromethane (Freon 11)                 | Full          | 1.1              |
| Dichlorodifluoromethane (Freon 12)                | Full          | 1                |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | Full          | 1.5              |

Date: <u>8/29/11</u> Data Reviewer: <u>Nancy C. Rothman, Ph.D.</u> 1107511A

Work Order #:

Work Order #:

1107511A

Lab: <u>Air Toxics Ltd.</u>

#### Actions (see References below):

Canister Integrity: If certification forms indicate issues, J/U or UJ results in samples

- Canister Vacuum (Vac): Initial Field Vac < 25" Hg, J/UJ all results; Lab Receipt Vac > 15" Hg, J/UJ results; Lab Receipt Vac > ± 5" Hg of Final Field Vac, J/UJ
  - Hold Time (HT): HT > 30 days, J detects/ UJ non-detects
  - *Blank Actions:* Action Level = 5 x Level in Blank; Sample-specific Blank Action Level = Action Level x (Sample DF/Blank DF) Method Blank (MB): Result < RL, U result at RL; RL<Result<Blank Action, U result at level reported Equipment Blank (EB): Result<Blank Action, EB result at level reported
  - *BFB Tune:* SW-846 method 8260B tune criteria not met, professional judgment on R of all data; samples analyzed > 12-hours after tune; professional judgment on J/UJ or R of results
  - LCS and CCV: Percent Recovery (%Rec) <10%, J detects, R non-detects; 10% < %Rec <70%; J/UJ all associated data; %Rec >130%, J detects no action for non-detects
- *Initial Calibration (ICAL):* %RSD > 30%, J/UJ associated results
  - *Internal Standard (IS):* RT > ±0.33 min of IS RT in daily CCV, J/UJ associated results;

Area < 25% Area in CCV, J detects, R non-detects (or professional judgment); 25% < Area < 60% of CCV Area, J/UJ associated results; Area > 140% of CCV Area, J detects, no action for non-detects

Surrogates: %Rec <10%, J detects, R non-detects; 10% < %Rec <70%; J/UJ all associated data; %Rec >130%, J detects - no action for non-detects

- Laboratory Duplicates: LCS/LCSD RPD or Sample/LD RPD > 20% for detects > 5x RL, J associated data; professional judgment for results < 5 x RL
  - Field Duplicates: RPD > 20% for detects > 5x RL, J associated data; professional judgment for results < 5 x RL
    - *RLs* + *Quant:* Compound reported outside calibration range (< RL or at ppbV level > sample-specific highest ICAL standard for compound), J data. Note if RL > expected RL from Table B.1 of Work Plan (see above)
    - *References:* Work Plan, RCRA Facility Investigation (RFI), VOC Source Assessment IBM East Fishkill Facility, Hopewell Junction, New York, prepared by Sanborn, Head & Associates, June 2009; NYSDEC Analytical Services Protocol, June 2005 with NYSDEC Modifications to the EPA Region 9 TO-15 QA/QC Criteria, February 2008; USEPA Region II SOP HW-31, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, Rev. 4, October 2006; and Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Publication EPA/625/R-96/010b, January 1999

Lab: <u>Air Toxics Ltd.</u> Date Sampled: <u>7/26/11</u> Method of Analysis: TO-15 Hi/Lo

# Work Order #:1107511BNo. Samples8 + 2FD IA Samples

| Data       |    |              |              | GC/MS        |                 |              |   |              |   |              |              |
|------------|----|--------------|--------------|--------------|-----------------|--------------|---|--------------|---|--------------|--------------|
| Element    | Ca | nister       |              | Tunes +      | Internal Stds + |              |   | Lab Dup      |   | Field        | RL           |
| Acceptable | Re | eceipt       | HT           | Calibrations | Surrogates      | LCS          | ( | LCS and LD   | ) | Duplicates   | & Quant.     |
| Yes        |    | $\checkmark$ | $\checkmark$ | $\checkmark$ |                 | $\checkmark$ |   | $\checkmark$ |   | $\checkmark$ | $\checkmark$ |
| No         |    |              |              |              |                 |              |   |              |   |              |              |

#### Comments: A combined Full Scan and SIM Analysis was performed for each sample for 22 Project-specific VOCs listed in Table B.1 of the Work Plan,

as shown on page 5 of this checklist. The full scan analysis was reported with an "A" suffix and the SIM analysis with a "B" suffix appended

to the laboratory sample ID.

The samples received were separated into three Work Orders (1107511A, 1107511B, and 1107511C). A single report will be written, at the clients request, for all three Work Orders.

10 Canisters were Certified pre-cleaned - certificates of analysis were reported in the 1107511A data package.

The canister vacuums (field initial, field final and lab receipt) were all acceptable; therefore, no action required. There were no COC issues noted by lab upon sample receipt either.

Samples were all analyzed on 8/1/11 (within 6 days of collection); therefore HT was met. No Action required.

*ICALs* : Instrument E Full Scan and SIM performed on 7/15/11. Full Scan = 6- to 8-level calibration from 0.05, 0.1, or 0.5 to 40 ppbV for 19 Target compounds (see page 5). SIM = 9- to 10-level calibration from 0.003 or 0.01 to 20 ppbV for 3 Targets.  $%RSD \le 30\%$  for all 22 Target Compounds a RLs reported (0.1 ppbV for all 19 Full Scan Targets except Acetone and 1,2,4-Trichlorobenzene at 0.5 ppbV and Methylene Chloride at 0.2 ppbV; and 0.01 ppbV for Vinyl Chloride and 0.02 ppbV for Carbon Tetrachloride and Trichloroethene by SIM for DF=1 analysis) were supported by the ICALs. Valid calibrations - No Action required.

Lab: Air Toxics Ltd.

Work Order #:

1107511B

Method of Analysis: TO-15 Hi/Lo

Associated Blanks: Method Blank: e080106 (Full Scan and SIM)

Field Blanks: FB-01 & FB-02 (reported in Work Order 1107511C)

| Blank ID | Contaminant / Level (µg/m <sup>3</sup> ) | Action Level<br>DF= | Sample and reported result ( $\mu g/m3$ ) | Corrected<br>Database Result |
|----------|--|---------------------|---|------------------------------|
| e080106  | None                                     |                     | No Blank Action Required                  |                              |
|          |  |                     |   |                              |
| FB-02    | None                                     |                     | No Blank Action Required                  |                              |
| FB-01    | Vinyl Chloride 0.17 µg/m <sup>3</sup>    | 0.85 µg/m3          | All samples were non-detect - No Blank Ac | tion required                |
|          |  | (DF=1.66)           |   |                              |
|          |  |                     |   |                              |
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|          |  |                     |   |                              |
|          |  |                     |   |                              |

Lab: Air Toxics Ltd.

Work Order #:

1107511B

Method of Analysis: TO-15 Hi/Lo

Additional Notes:

CCALs: e080102 and e080102sim - % Recovery 70-130% for all 22 Target compounds - No Action required.

*BFB Tunes:* Instrument E 5 Tunes (4 for ICAL + 1 for CCAL) - all criteria in all tunes were met and all samples were analyzed within 12 hours of tune; therefore, No Action Required.

Surrogates & Internal Standards: All 3 Surrogates had % Recovery within criteria and all IS' had areas and RTs within criteria; therefore, No Action Required.

*LCS/LCSD*: e080103/e080104 & e080103sim/e080104sim - %Recovery acceptable for all 22 Targets in LCS and LCSD; therefore, acceptable accuracy for method demonstrated. LCS/LCSD precision (RPD) acceptable for all 22 targets as well. No Action required.

LD analysis not performed for the samples in this Work Order. LCS/LCSD reported instead, which reported acceptable precision. No Action required.

FD Pairs: There were two sets of Field Duplicates - IA BB-39 / DUP34437 and IA BF-24 / DUP23989. FD precision evaluation shown on pages 4 & 5 - precision was acceptable for both FDs, no Action required.

All results were reported within the calibration range (no "J' or "E" qualified data).

All reporting limits were at a level below the Project required RL (as shown in Table 5); therefore, all results are considered usable as reported.

The narrative did not raise any additional issues that may affect data quality.

Lab: <u>Air Toxics Ltd.</u>

Work Order #:

1107511B

Method of Analysis: TO-15 Hi/Lo

Field Duplicate Evaluation\_ Sample IDs:

Sample = IA BB-39

FD = DUP34437

|                        |                   | DF = 1.63*         | Sample Resul | lt | FD     | FD Result   |   |        |      |        |
|------------------------|-------------------|--------------------|--------------|----|--------|-------------|---|--------|------|--------|
| Analyte Name           | CAS No.           | RL ( $\mu g/m^3$ ) | $\mu g/m^3$  | Q  | Level  | $\mu g/m^3$ | Q | Level  | RPD  | Action |
| Freon 12               | 75-71-8           | 0.81               | 3            |    | < 5xRL | 2.8         |   | < 5xRL | 6.9  | None   |
| Freon 11               | 75-69-4           | 0.92               | 1.4          |    | < 5xRL | 1.4         |   | < 5xRL | 0.0  | None   |
| Freon 113              | 76-13-1           | 1.2                | 1.2          | U  | RL     | 1.2         | U | RL     | NA   | None   |
| 1,1-Dichloroethene     | 75-35-4           | 0.65               | 0.65         | U  | RL     | 0.63        | U | RL     | NA   | None   |
| Acetone                | 67-64-1           | 1.9                | 8.2          |    | < 5xRL | 8.6         |   | < 5xRL | 4.8  | None   |
| Methylene Chloride     | 75-09-2           | 1.1                | 1.1          | U  | RL     | 1.1         | U | RL     | NA   | None   |
| cis-1,2-Dichloroethene | 156-59-2          | 0.65               | 0.65         | U  | RL     | 0.63        | U | RL     | NA   | None   |
| 1,1,1-Trichloroethane  | 71-55-6           | 0.89               | 0.89         | U  | RL     | 0.86        | U | RL     | NA   | None   |
| Benzene                | 71-43-2           | 0.52               | 0.52         | U  | < 5xRL | 0.5         |   | < 5xRL | 3.9  | None   |
| Toluene                | 108-88-3          | 0.61               | 0.64         |    | < 5xRL | 0.6         |   | < 5xRL | 6.5  | None   |
| Tetrachloroethene      | 127-18-4          | 1.1                | 4.2          |    | < 5xRL | 1.1         | U | RL     | NA   | None   |
| Chlorobenzene          | 108-90-7          | 0.75               | 0.75         | U  | RL     | 0.73        | U | RL     | NA   | None   |
| Ethyl Benzene          | 100-41-4          | 0.71               | 0.71         | U  | RL     | 0.69        | U | RL     | NA   | None   |
| m,p-Xylene             | 108-38-3/106-42-3 | 0.71               | 0.71         | U  | RL     | 0.69        | U | RL     | NA   | None   |
| o-Xylene               | 95-47-6           | 0.71               | 0.71         | U  | RL     | 0.69        | U | RL     | NA   | None   |
| 1,3-Dichlorobenzene    | 541-73-1          | 0.98               | 0.98         | U  | RL     | 0.95        | U | RL     | NA   | None   |
| 1,4-Dichlorobenzene    | 106-46-7          | 0.98               | 0.98         | U  | RL     | 0.95        | U | RL     | NA   | None   |
| 1,2-Dichlorobenzene    | 95-50-1           | 0.98               | 0.98         | U  | RL     | 0.95        | U | RL     | NA   | None   |
| 1,2,4-Trichlorobenzene | 120-82-1          | 6                  | 6            | U  | RL     | 5.9         | U | RL     | NA   | None   |
| Vinyl Chloride         | 75-01-4           | 0.042              | 0.042        | U  | RL     | 0.04        | U | RL     | NA   | None   |
| Carbon Tetrachloride   | 56-23-5           | 0.2                | 0.46         |    | < 5xRL | 0.34        |   | < 5xRL | 30.0 | None   |
| Trichloroethene        | 79-01-6           | 0.18               | 0.18         | U  | RL     | 0.17        | U | RL     | NA   | None   |

\*The FD DF was 1.58

Q = Data Qualifier as reported by ATL and/or NEH; U = non-detect, J = estimated result; UJ = non-detect is estimated

NA = Not Applicable. RPD not calculated since one or both results were non-detect.

Lab: Air Toxics Ltd.

Work Order #:

1107511B

Method of Analysis: TO-15 Hi/Lo

Field Duplicate Evaluation\_ Sample IDs:

Sample = IA BF-24

FD = DUP23989

|                        |                   | DF = 1.6*          | Sample Resul | t | FD     | FD Result   |   |        |     |        |
|------------------------|-------------------|--------------------|--------------|---|--------|-------------|---|--------|-----|--------|
| Analyte Name           | CAS No.           | RL ( $\mu g/m^3$ ) | $\mu g/m^3$  | Q | Level  | $\mu g/m^3$ | Q | Level  | RPD | Action |
| Freon 12               | 75-71-8           | 0.79               | 2.4          |   | < 5xRL | 2.5         |   | < 5xRL | 4.1 | None   |
| Freon 11               | 75-69-4           | 0.9                | 1.5          |   | < 5xRL | 1.5         |   | < 5xRL | 0.0 | None   |
| Freon 113              | 76-13-1           | 1.2                | 1.2          | U | RL     | 1.3         | U | RL     | NA  | None   |
| 1,1-Dichloroethene     | 75-35-4           | 0.63               | 0.63         | U | RL     | 0.65        | U | RL     | NA  | None   |
| Acetone                | 67-64-1           | 1.9                | 7.3          |   | < 5xRL | 7.3         |   | < 5xRL | 0.0 | None   |
| Methylene Chloride     | 75-09-2           | 1.1                | 1.1          | U | RL     | 1.1         | U | RL     | NA  | None   |
| cis-1,2-Dichloroethene | 156-59-2          | 0.63               | 0.63         | U | RL     | 0.65        | U | RL     | NA  | None   |
| 1,1,1-Trichloroethane  | 71-55-6           | 0.87               | 0.87         | U | RL     | 0.9         | U | RL     | NA  | None   |
| Benzene                | 71-43-2           | 0.51               | 0.51         | U | RL     | 0.53        | U | RL     | NA  | None   |
| Toluene                | 108-88-3          | 0.6                | 0.6          | U | RL     | 0.62        | U | RL     | NA  | None   |
| Tetrachloroethene      | 127-18-4          | 1.1                | 1.1          | U | RL     | 1.1         | U | RL     | NA  | None   |
| Chlorobenzene          | 108-90-7          | 0.74               | 0.74         | U | RL     | 0.76        | U | RL     | NA  | None   |
| Ethyl Benzene          | 100-41-4          | 0.69               | 0.69         | U | RL     | 0.72        | U | RL     | NA  | None   |
| m,p-Xylene             | 108-38-3/106-42-3 | 0.69               | 0.69         | U | RL     | 0.72        | U | RL     | NA  | None   |
| o-Xylene               | 95-47-6           | 0.69               | 0.69         | U | RL     | 0.72        | U | RL     | NA  | None   |
| 1,3-Dichlorobenzene    | 541-73-1          | 0.96               | 0.96         | U | RL     | 0.99        | U | RL     | NA  | None   |
| 1,4-Dichlorobenzene    | 106-46-7          | 0.96               | 0.96         | U | RL     | 0.99        | U | RL     | NA  | None   |
| 1,2-Dichlorobenzene    | 95-50-1           | 0.96               | 0.96         | U | RL     | 0.99        | U | RL     | NA  | None   |
| 1,2,4-Trichlorobenzene | 120-82-1          | 5.9                | 5.9          | U | RL     | 6.1         | U | RL     | NA  | None   |
| Vinyl Chloride         | 75-01-4           | 0.041              | 0.041        | U | RL     | 0.042       | U | RL     | NA  | None   |
| Carbon Tetrachloride   | 56-23-5           | 0.2                | 0.48         |   | < 5xRL | 0.48        |   | < 5xRL | 0.0 | None   |
| Trichloroethene        | 79-01-6           | 0.17               | 0.17         | U | RL     | 0.18        | U | RL     | NA  | None   |

\*The FD DF was 1.65

Q = Data Qualifier as reported by ATL and/or NEH; U = non-detect, J = estimated result; UJ = non-detect is estimated

NA = Not Applicable. RPD not calculated since one or both results were non-detect.

Lab: Air Toxics Ltd.

## Work Order #:

1107511B

# Compound List and Project-required Reporting Limits (RL)

|   | Full Scan     |                  |
|---|---------------|------------------|
| Target Analyte Name                               | (Full) or SIM | RL $(\mu g/m^3)$ |
| Tetrachloroethene (PCE)                           | Full          | 1.4              |
| Trichloroethene (TCE)                             | SIM           | 0.22             |
| cis-1,2-Dichloroethene (cDCE)                     | Full          | 0.8              |
| 1,1-Dichloroethene (DCE)                          | Full          | 0.8              |
| Vinyl chloride (VC)                               | SIM           | 0.06             |
| 1,1,1-Trichloroethane (TCA)                       | Full          | 1.1              |
| Carbon Tetrachloride                              | SIM           | 0.2              |
| Methylene chloride (MeCL)                         | Full          | 1.4              |
| Chlorobenzene                                     | Full          | 0.92             |
| 1,2,4-Trichlorobenzene                            | Full          | 7.4              |
| 1,2-Dichlorobenzene                               | Full          | 1.2              |
| 1,3-Dichlorobenzene                               | Full          | 1.2              |
| 1,4-Dichlorobenzene                               | Full          | 1.2              |
| Acetone   | Full          | 2.4              |
| Benzene   | Full          | 0.64             |
| Ethylbenzene                                      | Full          | 0.86             |
| m-Xylene  | Enll          | 0.86             |
| p-Xylene  | 1'ull         | 0.80             |
| o-Xylene  | Full          | 0.86             |
| Toluene   | Full          | 0.77             |
| Trichlorofluoromethane (Freon 11)                 | Full          | 1.1              |
| Dichlorodifluoromethane (Freon 12)                | Full          | 1                |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | Full          | 1.5              |

Lab: <u>Air Toxics Ltd.</u>

#### Actions (see References below):

Canister Integrity: If certification forms indicate issues, J/U or UJ results in samples

Canister Vacuum (Vac): Initial Field Vac < 25" Hg, J/UJ all results; Lab Receipt Vac > 15" Hg, J/UJ results; Lab Receipt Vac > ± 5" Hg of Final Field Vac, J/UJ

Hold Time (HT): HT > 30 days, J detects/ UJ non-detects

- *Blank Actions:* Action Level = 5 x Level in Blank; Sample-specific Blank Action Level = Action Level x (Sample DF/Blank DF) Method Blank (MB): Result < RL, U result at RL; RL<Result<Blank Action, U result at level reported Equipment Blank (EB): Result<Blank Action, EB result at level reported
- *BFB Tune:* SW-846 method 8260B tune criteria not met, professional judgment on R of all data; samples analyzed > 12-hours after tune; professional judgment on J/UJ or R of results
- LCS and CCV: Percent Recovery (%Rec) <10%, J detects, R non-detects; 10% < %Rec <70%; J/UJ all associated data; %Rec >130%, J detects no action for non-detects
- Initial Calibration (ICAL): %RSD > 30%, J/UJ associated results
  - Internal Standard (IS): RT > ±0.33 min of IS RT in daily CCV, J/UJ associated results;

Area < 25% Area in CCV, J detects, R non-detects (or professional judgment); 25% < Area < 60% of CCV Area, J/UJ associated results; Area > 140% of CCV Area, J detects, no action for non-detects

Surrogates: %Rec <10%, J detects, R non-detects; 10% < %Rec <70%; J/UJ all associated data; %Rec >130%, J detects - no action for non-detects

- Laboratory Duplicates: LCS/LCSD RPD or Sample/LD RPD > 20% for detects > 5x RL, J associated data; professional judgment for results < 5 x RL
  - Field Duplicates: RPD > 20% for detects > 5x RL, J associated data; professional judgment for results < 5 x RL
    - *RLs* + *Quant:* Compound reported outside calibration range (< RL or at ppbV level > sample-specific highest ICAL standard for compound), J data. Note if RL > expected RL from Table B.1 of Work Plan (see above)
      - References: Work Plan, RCRA Facility Investigation (RFI), VOC Source Assessment IBM East Fishkill Facility, Hopewell Junction, New York, prepared by Sanborn, Head & Associates, June 2009; NYSDEC Analytical Services Protocol, June 2005 with NYSDEC Modifications to the EPA Region 9 TO-15 QA/QC Criteria, February 2008; USEPA Region II SOP HW-31, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, Rev. 4, October 2006; and Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Publication EPA/625/R-96/010b, January 1999

1107511B

Work Order #:

Lab: <u>Air Toxics Ltd.</u> Date Sampled: <u>7/26/11</u> Method of Analysis: TO-15 Hi/Lo

# Work Order #: 1107511C No. Samples 6 IA + 2AA + 2FB

| Data       |          |              | GC/MS   |                 |              |   |              |   |            |              |
|------------|----------|--------------|---|-----------------|--------------|---|--------------|---|------------|--------------|
| Element    | Canister |              | Tunes +   | Internal Stds + |              |   | Lab Dup      |   | Field      | RL           |
| Acceptable | Receipt  | HT           | Calibrations  | Surrogates      | LCS          | ( | LCS and LD   | ) | Duplicates | & Quant.     |
| Yes        |          | $\checkmark$ |   |                 | $\checkmark$ |   | $\checkmark$ |   | NA         | $\checkmark$ |
| No         |          |              | Estimate (UJ)<br>1,2-Dichloro-<br>benzene in all<br>samples |                 |              |   |              |   |            |              |

Comments: A combined Full Scan and SIM Analysis was performed for each sample for 22 Project-specific VOCs listed in Table B.1 of the Work Plan,

as shown on page 5 of this checklist. The full scan analysis was reported with an "A" suffix and the SIM analysis with a "B" suffix appended

to the laboratory sample ID.

The samples received were separated into three Work Orders (1107511A, 1107511B, and 1107511C). A single report will be written, at the clients request, for all three Work Orders.

10 Canisters were Certified pre-cleaned - certificates of analysis were reported in the 1107511A data package.

The canister vacuums (field initial, field final and lab receipt) were all acceptable; therefore, no action required. The COC indicated that sample IA BG-38 was collected in canister #33815 but number on canister tag for this sample was #33895. Canister certifications (found in 1107511A) indicate that there was no canister #33815 associated with this project and that indeed #33895 was sent out to field for use. Lab used the number from the tag on the canister for association with this sample, IA BG-38.

Samples were all analyzed on 8/2/11 (within 7 days of collection); therefore HT was met. No Action required.

*ICALs* : Instrument A Full Scan and SIM performed on 7/13/11. Full Scan = 6- to 8-level calibration from 0.05, 0.1, or 0.5 to 40 ppbV for 19 Target compounds (see page 5). SIM = 9- to 10-level calibration from 0.003 or 0.01 to 20 ppbV for 3 Targets. %RSD  $\leq$  30% for all 22 Target Compounds except 1,2-dichlorobenzene %RSD = 33.429%. RLs reported (0.1 ppbV for all 19 Full Scan Targets except Acetone and 1,2,4-Trichlorobenzene at 0.5 ppbV and Methylene Chloride at 0.2 ppbV; and 0.01 ppbV for Vinyl Chloride and 0.02 ppbV for Carbon Tetrachloride and Trichloroethene by SIM for DF=1 analysis) were supported by the ICALs.

\*ACTION: 1,2-Dichlorobenzene estimated (UJ) in all samples with indeterminate bias due to the Initial Calibration being outside criteria

Lab: <u>Air Toxics Ltd.</u>

Work Order #:

1107511C

Method of Analysis: TO-15 Hi/Lo

Associated Blanks: Method Blank: a080205 (Full Scan and SIM)

Field Blanks: FB-01 & FB-02 (reported in this Work Order 1107511C)

| Blank ID | Contaminant / Level (µg/m <sup>3</sup> ) | Action Level<br>DF= | Sample and reported result (µg/m3)           | Corrected<br>Database Result |
|----------|--|---------------------|--|------------------------------|
| a080205  | None                                     |                     | No Blank Action Required                     |                              |
|          |  |                     |  |                              |
| FB-02    | None                                     |                     | No Blank Action Required                     |                              |
| FB-01    | Vinyl Chloride 0.17 µg/m <sup>3</sup>    | 0.85 µg/m3          | AA AC-15 0.83                                | 0.83 EB                      |
|          |  | (DF=1.66)           | All other samples were non-detect - No addit | ional Action                 |
|          |  |                     |  |                              |
|          |  |                     |  |                              |
|          |  |                     |  |                              |
|          |  |                     |  |                              |
|          |  |                     |  |                              |
|          |  |                     |  |                              |
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|          |  |                     |  |                              |
|          |  |                     |  |                              |
|          |  |                     |  |                              |
|          |  |                     |  |                              |

Lab: Air Toxics Ltd.

Work Order #:

1107511C

Method of Analysis: TO-15 Hi/Lo

Additional Notes:

CCALs: a080202 and a080202sim - % Recovery 70-130% for all 22 Target compounds - No Action required.

*BFB Tunes:* Instrument A 3 Tunes (2 for ICAL + 1 for CCAL) - all criteria in all tunes were met and all samples were analyzed within 12 hours of tune; therefore, No Action Required.

Surrogates & Internal Standards: All 3 Surrogates had % Recovery within criteria and all IS' had areas and RTs within criteria; therefore, No Action Required.

*LCS/LCSD* : a080203/a080204 & a080103sim/a080104sim - % Recovery acceptable for all 22 Targets in LCS and LCSD; therefore, acceptable accuracy for method demonstrated. LCS/LCSD precision (RPD) acceptable for all 22 targets as well. Note that a080203 reported only 19 targets (full scan) and a080204 reported 22 target (includes 3 targets reported for this project by SIM); therefore, duplicate comparison, as reported in the pdf report for this LCS/LCSD, for these 3 compounds appears to be unacceptable since they are reported as non-detect in a080203 but these compounds were actually not analyzed in this LCS. No Action required.

LD analysis not performed for the samples in this Work Order. LCS/LCSD reported instead, which reported acceptable precision. No Action required.

FD Pairs : There were no FD pairs associated with the samples in this Work Order - please see 1107511B where 2 FD pairs, with acceptable precision, were reported.

All results were reported within the calibration range (no "J' or "E" qualified data).

All reporting limits were at a level below the Project required RL (as shown in Table 5); therefore, all results are considered usable as reported.

The narrative did not raise any additional issues that may affect data quality.

Lab: Air Toxics Ltd.

### Work Order #:

1107511C

# Compound List and Project-required Reporting Limits (RL)

|   | Full Scan     |                  |
|---|---------------|------------------|
| Target Analyte Name                               | (Full) or SIM | RL $(\mu g/m^3)$ |
| Tetrachloroethene (PCE)                           | Full          | 1.4              |
| Trichloroethene (TCE)                             | SIM           | 0.22             |
| cis-1,2-Dichloroethene (cDCE)                     | Full          | 0.8              |
| 1,1-Dichloroethene (DCE)                          | Full          | 0.8              |
| Vinyl chloride (VC)                               | SIM           | 0.06             |
| 1,1,1-Trichloroethane (TCA)                       | Full          | 1.1              |
| Carbon Tetrachloride                              | SIM           | 0.2              |
| Methylene chloride (MeCL)                         | Full          | 1.4              |
| Chlorobenzene                                     | Full          | 0.92             |
| 1,2,4-Trichlorobenzene                            | Full          | 7.4              |
| 1,2-Dichlorobenzene                               | Full          | 1.2              |
| 1,3-Dichlorobenzene                               | Full          | 1.2              |
| 1,4-Dichlorobenzene                               | Full          | 1.2              |
| Acetone   | Full          | 2.4              |
| Benzene   | Full          | 0.64             |
| Ethylbenzene                                      | Full          | 0.86             |
| m-Xylene  | <b>E</b> 11   | 0.86             |
| p-Xylene  | I'ull         | 0.80             |
| o-Xylene  | Full          | 0.86             |
| Toluene   | Full          | 0.77             |
| Trichlorofluoromethane (Freon 11)                 | Full          | 1.1              |
| Dichlorodifluoromethane (Freon 12)                | Full          | 1                |
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | Full          | 1.5              |

Lab: <u>Air Toxics Ltd.</u>

#### Actions (see References below):

Canister Integrity: If certification forms indicate issues, J/U or UJ results in samples

- *Canister Vacuum (Vac):* Initial Field Vac < 25" Hg, J/UJ all results; Lab Receipt Vac > 15" Hg, J/UJ results; Lab Receipt Vac > ± 5" Hg of Final Field Vac, J/UJ
  - Hold Time (HT): HT > 30 days, J detects/ UJ non-detects
    - *Blank Actions:* Action Level = 5 x Level in Blank; Sample-specific Blank Action Level = Action Level x (Sample DF/Blank DF) Method Blank (MB): Result < RL, U result at RL; RL<Result<Blank Action, U result at level reported Equipment Blank (EB): Result<Blank Action, EB result at level reported
    - *BFB Tune:* SW-846 method 8260B tune criteria not met, professional judgment on R of all data; samples analyzed > 12-hours after tune; professional judgment on J/UJ or R of results
  - LCS and CCV: Percent Recovery (%Rec) <10%, J detects, R non-detects; 10% < %Rec <70%; J/UJ all associated data; %Rec >130%, J detects no action for non-detects
- Initial Calibration (ICAL): %RSD > 30%, J/UJ associated results
  - Internal Standard (IS): RT > ±0.33 min of IS RT in daily CCV, J/UJ associated results;

Area < 25% Area in CCV, J detects, R non-detects (or professional judgment); 25% < Area < 60% of CCV Area, J/UJ associated results; Area > 140% of CCV Area, J detects, no action for non-detects

Surrogates: %Rec <10%, J detects, R non-detects; 10% < %Rec <70%; J/UJ all associated data; %Rec >130%, J detects - no action for non-detects

- Laboratory Duplicates: LCS/LCSD RPD or Sample/LD RPD > 20% for detects > 5x RL, J associated data; professional judgment for results < 5 x RL
  - Field Duplicates: RPD > 20% for detects > 5x RL, J associated data; professional judgment for results < 5 x RL
    - *RLs* + *Quant:* Compound reported outside calibration range (< RL or at ppbV level > sample-specific highest ICAL standard for compound), J data. Note if RL > expected RL from Table B.1 of Work Plan (see above)
      - References: Work Plan, RCRA Facility Investigation (RFI), VOC Source Assessment IBM East Fishkill Facility, Hopewell Junction, New York, prepared by Sanborn, Head & Associates, June 2009; NYSDEC Analytical Services Protocol, June 2005 with NYSDEC Modifications to the EPA Region 9 TO-15 QA/QC Criteria, February 2008; USEPA Region II SOP HW-31, Validating Air Samples, Volatile Organic Analysis of Ambient Air in Canisters by Method TO-15, Rev. 4, October 2006; and Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Publication EPA/625/R-96/010b, January 1999

1107511C

Work Order #: