2015 Tier I Commercial Vapor Intrusion Assessment Report
Boeing Auburn Facility
Auburn, Washington

February 8, 2016

Prepared for

The Boeing Company
Seattle, Washington

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LIST OF ABBREVIATIONS AND ACRONYMS

Boeing ..... The Boeing Company
cis-1,2-DCE cis-1,2-Dichloroethene
CUL ..... cleanup level
Ecology ..... Washington State Department of Ecology
EPA ..... US Environmental Protection Agency
facility ..... Boeing Auburn Fabrication Division facility
Los Cabos ..... Los Cabos Mexican Restaurant
µg/L ..... micrograms per liter
µg/m^3 ..... micrograms per cubic meter
MTCA ..... Model Toxics Control Act
Order ..... Agreed Order (No.DE 01HWTRNR-3345)
PRT ..... post run tubing (Geoprobe®)
RI ..... Remedial Investigation
SL ..... screening level
SW ..... Southwest
TCE ..... Trichloroethene
VC ..... Vinyl Chloride
VOC ..... Volatile Organic Compound
WAC ..... Washington Administrative Code
Work Plan .... 2014 Additional Tier I Commercial Vapor Intrusion Assessment Work Plan

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1.0 INTRODUCTION

This document presents the results of the 2015 Tier I commercial vapor intrusion assessment conducted as part of the remedial investigation (RI) activities associated with The Boeing Company's (Boeing's) Auburn Fabrication Division facility (facility), located at 700 15th Street Southwest (SW) in Auburn, Washington. The activities described in this document are part of the ongoing RI for the facility.

Boeing is currently conducting corrective action at the facility. Corrective action requirements are documented in an Agreed Order (Order; No. DE 01HWTRNR-3345) dated August 14, 2002 and the First Amended Agreed Order dated February 21, 2006, both with the Washington State Department of Ecology (Ecology). The Order includes a requirement to conduct an RI of facility contamination impacts both within the facility (on Boeing property) and at downgradient properties (off Boeing property). This document presents the results of soil gas and shallow groundwater sampling from temporary direct-push borings to evaluate the potential for vapor intrusion in commercial areas of Auburn and Algona. The assessment was conducted in accordance with the Tier I Commercial Vapor Intrusion Assessment Work Plan (Work Plan; Landau Associates 2014a) and Revised Leak Test Procedure (Leak Test Procedure; Landau Associates 2015a). The location of the facility and its immediate vicinity are shown on Figure 1.

1.1 Background

Boeing has been implementing RI activities to characterize the nature and extent of two groundwater plumes: the Area 1 plume (Plume 1) and the western plume (Plume 2), which occur beneath the northern portion of the facility and extend off Boeing property to the north and northwest. The plumes contain the volatile organic compound (VOC), trichloroethene (TCE) and its breakdown components cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride (VC). The plumes have affected shallow groundwater both on and off Boeing property, and VOCs in shallow groundwater have the potential to impact indoor air quality via the vapor intrusion pathway.

Boeing prepared a site-wide approach to assess vapor intrusion risk near the shallow groundwater TCE and VC plumes both on Boeing property and off Boeing property (Landau Associates 2014b). Assessment of vapor intrusion is based on the tiered approach presented in Ecology's draft vapor intrusion guidance document (Ecology 2009). The assessment process consists of two[1] stages:

1. Tier I assessment – Focuses on determining whether there is a potential vapor intrusion risk based on groundwater and soil gas data and the proximity of buildings. A Tier I assessment does not evaluate individual buildings.
2. Tier II assessment – If a potential vapor intrusion risk is identified in an area with overlying structures, a Tier II assessment focuses on evaluating individual structures using additional

[1] Ecology's guidance presents an additional stage of assessment called a "preliminary assessment". The preliminary assessment for the RI was completed in 2012 and therefore, not discussed in this document.

building-specific sampling such as indoor air (which may include crawlspace or basement air), ambient air, and sub-slab soil gas.

A Tier I assessment evaluates whether VOCs in shallow groundwater (at the water table) or soil gas occur at concentrations that could pose a vapor intrusion threat to indoor air quality. Groundwater and soil gas screening levels (SLs) are used to evaluate Tier I data. A Tier II assessment evaluates specific buildings to determine if VOCs of potential concern are present in indoor air above Model Toxic Control Act (MTCA) cleanup levels (CULs) and if the VOCs are related to vapor intrusion or background sources (Ecology 2009).

A preliminary vapor intrusion assessment (preliminary assessment) was conducted for commercial areas of the site using existing groundwater water table data. The preliminary assessment was presented in the Vapor Intrusion Assessment report (Landau Associates 2014b). TCE and VC concentrations in shallow groundwater were compared to commercial groundwater SLs. Wells and boreholes used in the assessment are shown on Figures 2 and 3. The results of the preliminary assessment indicated that groundwater at the water table exceeds the groundwater SLs protective of commercial indoor air in limited commercial areas of Algona and Auburn, Washington. Due to the limited data available for the preliminary assessment, an additional Tier I assessment was recommended with the intent of narrowing the focus of a potential Tier II investigation (Landau Associates 2014a). Groundwater concentration data used in the preliminary assessment were presented in the Work Plan; the results of the additional Tier I vapor intrusion assessment are presented in this report. Two buildings (The Outlet Collection in Auburn and Building 17-70 on Boeing property) were identified to proceed directly to a Tier II evaluation (Landau Associates 2015b); the Tier II results are presented in a separate document.

2.0 COMMERCIAL VAPOR INTRUSION SCREENING CRITERIA

Commercial indoor air, soil gas, and groundwater SLs were presented in the Work Plan (Landau Associates 2014a). TCE and VC are the primary chemicals evaluated as constituents of concern because of their concentrations in groundwater relative to their toxicity and cleanup levels (CULs). Although there are presently no MTCA air CULs (and thus, no vapor intrusion groundwater or soil gas SLs or indoor air CULs) for cis-1,2-DCE, this constituent was included as an analyte because it is the primary intermediate compound in the breakdown of TCE to VC (Landau Associates 2014a).

Calculated commercial TCE and VC shallow groundwater SLs protective of indoor air are 7.9 micrograms per liter (µg/L) and 1.0 µg/L, respectively. TCE and VC soil gas SLs protective of commercial indoor air are 63 micrograms per cubic meter (µg/m^3) and 28 µg/m^3, respectively. The commercial groundwater and soil gas SLs are based on modified MTCA Method B calculations for protection of indoor air and established vapor attenuation factors published by Ecology (Ecology 2015).

3.0 COMMERCIAL VAPOR INTRUSION ASSESSMENT FOR 2015

Sampling procedures for soil gas and groundwater are summarized in Section 3.1. Specific sampling activities and results for commercial Auburn and commercial Algona are summarized in sections 3.2 and 3.3, respectively.

3.1 Sampling Procedures

Shallow direct-push probe borings were advanced to collect both soil gas and groundwater samples. Soil gas samples were collected using either the Geoprobe® post run tubing (PRT) tooling system or a vapor implant. Groundwater samples were collected using a temporary well screen from either the same boring or a boring directly adjacent [within 2 feet (ft)] to the soil gas boring. Due to the type of tooling used for sample collection, soil cores were collected and logged only from select locations; boring logs are included in Appendix A. A detailed description of the soil gas and groundwater sample collection procedures is provided in Sections 3.1.1 and 3.1.2. Additionally, several modifications to the sampling procedures were made during the course of the Tier I soil gas investigation due to issues encountered in the field; a description of modification to the work plan is presented in Section 3.1.3.

Boring locations were designated with the prefix ASB followed by a 4-digit number identifier; groundwater samples collected from the temporary borings have the same ASB prefix and 4-digit identifier followed by the bottom depth of the screen (e.g., ASB0257-15 was the groundwater sample collected from boring ASB0257). To differentiate co-located soil gas samples from water samples, the soil gas samples were given an ASG prefix followed by a 4-digit identifier to match the boring location and groundwater sample (e.g., ASG0257 was the soil gas sample collected from boring ASB0257). For simplicity, only the boring location identifiers are used to reference the locations of the co-located soil gas and groundwater samples in the document text and figures; sample identifications are shown in the analytical data tables.

3.1.1 Soil Gas Sampling Procedures

Soil-gas sample collection was preceded by leak test procedures to check for potential ambient air leaks that could compromise soil-gas sample results. The leak test procedures are outlined in detail in the Work Plan but generally consisted of:

- A shut-in test, which consisted of isolating the aboveground portion of the sample train and verifying that it held steady vacuum pressure for two minutes
- A helium leak test, in which helium was applied to a shroud over the sample point, a small sample of soil gas was purged from the subsurface, and the soil gas was tested for helium with a field meter.

Following the leak test procedures, soil gas samples were collected with 400-milliliter Summa (vacuum) canisters[2] fitted with 2-minute flow controllers to achieve approximately 200 milliliters per minute flow rate. Helium was maintained in the shroud over the sample point at concentrations greater than 70 percent during sample collection. The samples were shipped to the analytical laboratory (H&P Mobile Geochemistry Inc.) to measure the concentrations of TCE, VC, and cis-1,2-DCE using US Environmental Protection Agency (EPA) Method TO-15 and the concentration of helium using the ASTM International D1946 method.

Following soil gas sample collection, tooling was removed from the borehole and the borehole was decommissioned in accordance with Washington Administrative Code (WAC) 173-160-381 or a temporary well screen was advanced for collection of groundwater samples.

3.1.2 Groundwater Sampling Procedures

Groundwater samples were collected from 4-ft-temporary well screens advanced just below the water table surface. The purpose of collecting samples from the water table surface is to determine if groundwater is likely contributing to chemical concentrations in soil gas. Groundwater samples were collected using a peristaltic pump, dedicated tubing, and low-flow sampling techniques. Field parameters were measured using a handheld meter and groundwater was purged until the field parameters stabilized. Groundwater samples were placed in coolers, packed with ice, and submitted under proper chain-of-custody procedures to Eurofins Lancaster Laboratories for analysis of VOCs by EPA Method 8260C and VC by EPA Method 8260C select ion monitoring. Following groundwater sample collection, the well screen was removed from the borehole and the borehole was decommissioned in accordance with WAC 173-160-381.

3.1.3 Deviations from the Work Plan

Several modifications were made to the sampling procedures during the course of the Tier I assessment because of false positive results during the field helium leak test and helium detections in laboratory samples. The issues and modifications to the sampling procedures are described in the following sections.

3.1.3.1 Field Helium Leak Test

While conducting the helium leak test to check for ambient air leaks, erroneous helium concentrations were noted in the soil gas. Field staff suspected that another compound might be causing interference in the helium field meter. To test this theory, soil gas was collected from the subsurface prior to the application of helium. In several instances, the meter reported helium in the soil gas when no source of helium was present. The manufacturer of the instrument confirmed that methane would interfere with the helium measurements. Methane, which has been noted in

[2] The sampling and laboratory procedures for using Summa canisters are presented in the Work Plan (Landau Associates 2014a), Leak Test Procedure (Landau Associates 2015a), the draft Sampling and Analysis Plan (Landau Associates 2013a), and in the Quality Assurance Project Plan (Landau Associates 2013b).

groundwater samples in the area (likely as a result of methanogenesis occurring in buried organic layers left behind by former wetland environments), was presumed to be the cause of the false positive measurements. A multi-gas analyzer, calibrated to read methane as a percent of the lower explosive limit (5 percent by volume) was used to verify that methane was present. Readings on the multi-gas analyzer indicated that methane was present in soil gas in varying amounts ranging from less than the lower explosive limit to above the upper explosive limit (15 percent by volume).

Because of the methane interference, field staff revised the leak test procedure to include testing a sample of the soil gas prior to the application of helium. If a detection was noted on the meter prior to the application of helium, the value was recorded and noted as a "background" value when conducting the leak test. Because of the variability of the methane concentrations in the soil gas, the revised leak test procedure was only used as a qualitative indicator of a potential ambient air leak in the system. Testing for helium in the laboratory sample continued to be used as the primary indicator of an ambient air leak.

3.1.3.2 Sample Point Installation

Because of the variability in methane concentrations and the qualitative nature of the field helium-leak test, ambient air leaks at several locations were not detected in the field but were evident by the presence of helium in the laboratory samples. If helium was detected in the sample at greater than 5 percent of the helium concentration applied to the shroud, the sample was rejected and the location was resampled during a subsequent mobilization (resampling). In all, three mobilizations were needed to complete the Tier I soil gas investigation.

After the second mobilization, it became apparent that the Geoprobe PRT tooling was the most likely source of the ambient air leaks. For the third mobilization, Boeing proposed using the vapor implant method to improve the seal between the sample collection point and the ground surface. The revised procedure was discussed with Ecology and described in an email on June 23, 2015[3]. The revised procedure was then used during the third mobilization.

The vapor implant method uses a porous, stainless steel vapor implant[4] connected to the end of a section of Teflon tubing. The implant is placed at the desired depth within the boring and sand is used to backfill the boring to approximately 6 inches above the vapor implant. A 1-ft lift of granular bentonite is placed on top of the sand and slowly hydrated to prevent water from leaking into the sand pack around the vapor implant. Once the upper portion of the granular bentonite is hydrated, bentonite grout is used to backfill the remainder of the boring. Bentonite grout appears to form a better surface seal than the PRT tooling.

[3] Jennifer Wynkoop, email message to Neal Hines, June 23, 2015.

[4] A stainless steel vapor implant comprises a solid stainless steel fitting with an approximately ½-inch to 1-inch long, porous, stainless steel tip. The filtration rating for the porous tip is typically 40 to 60 microns.

3.1.3.3 Resampling

The Tier I direct-push probe drilling was completed in three mobilizations due to site access delays and helium detections described above. Resampling was conducted at three locations (ASB0251, ASB0256, and ASB0261). At one location, ASB0251, resampling was conducted twice. Repeat samples were designated with the same prefix and 4-digit number followed by an R (first resampling event) or R2 (second resampling event).

3.2 Commercial Auburn

The area of commercial Auburn identified for an additional Tier I assessment includes the area north of Boundary Boulevard, east of State Route 167, and south of The Outlet Collection. The commercial Auburn area and Tier I sampling locations are shown on Figure 3. Sampling activities and results are discussed in the following sections.

3.2.1 Field Investigation Activities

Tier I direct-push borings were advanced in 17 locations in commercial Auburn: 7 locations along 15th Street SW; 1 location on O Street; 8 locations along the south access road of The Outlet Collection property; and 1 location on the west access road of The Outlet Collection Property. Samples along O Street and 15th Street SW were collected during the initial mobilization in March 2015. Due to access delays, samples on The Outlet Collection access roads were collected during the second mobilization in April 2015. Resampling occurred at ASB0256 and ASB0261 in June 2015. With the resampling, a total of 19 soil gas and groundwater samples were collected in Auburn for the Tier I assessment.

3.2.2 Sampling Results

TCE was detected in 3 of the 19 soil gas samples from commercial Auburn; none of the detections exceeded the soil gas SL of 63 µg/m^3. Cis-1,2-DCE was detected in two samples from commercial Auburn; no SL is available for cis-1,2-DCE in soil gas. VC was detected in one sample, ASB0258, at a concentration of 30 µg/m^3; the concentration exceeded the soil gas SL for VC of 28 µg/m^3.

VC was also detected in groundwater at ASB0258 at 2.8 µg/L, which exceeds the commercial groundwater SL for VC of 1.0 µg/L. At all other locations, groundwater TCE concentrations were below analytical detection limits and VC concentrations were below the groundwater SL. The laboratory analytical data and applicable screening criteria are summarized in Table 1. Laboratory data packages are included in Appendix B.

3.2.3 Discussion

Contaminants present in soil gas have the potential to enter buildings through cracks in the foundation, utility penetrations, or other inlets resulting in vapor intrusion. Detections of VOCs in soil gas above SLs are a potential indication that nearby buildings could be affected by vapor intrusion. Because VC was detected above the commercial SL for soil gas and shallow groundwater at ASB0258, additional vapor intrusion assessments of nearby buildings will be needed, as specified in the work

plan. Los Cabos Mexican Restaurant (Los Cabos), which is located just south of ASB0258 at 1316 Outlet Collection Way in Auburn, was identified as the nearest building. Additional soil gas borings, indoor air sampling, and/or sub-slab soil-gas sampling are recommended to determine if VC is affecting indoor air quality at Los Cabos. Boeing is negotiating an access agreement to perform vapor intrusion assessment sampling at the Los Cabos property.

3.3 Commercial Algona

The Tier I assessment area of commercial Algona includes a portion of Milwaukee Avenue North, south of 10th Avenue. The commercial Algona area and Tier I sampling locations are shown on Figure 3. Sampling activities and results are discussed in the following sections.

3.3.1 Field Investigation Activities

Tier I direct-push borings were advanced in three locations along Milwaukee Avenue North. Initial sampling at all three locations was conducted in March 2015. Due to detections of helium above acceptable limits in the laboratory samples, resampling occurred at ASB0251 in both April and June 2015. With the resampling, a total of five soil gas and groundwater samples were collected in Algona for the Tier I assessment.

3.3.2 Sampling Results

TCE and VC were not detected in any soil gas samples from commercial Algona. Cis-1,2-DCE was detected in one location, ASB0254, at 11 µg/m^3; SLs are not available for cis-1,2-DCE.

TCE was not detected in shallow groundwater in Algona. VC was detected in shallow groundwater at two of the three sample locations (ASB250 and ASB251). One sample, ASB0251R2 with a concentration of 1.5 µg/L, exceeded the VC groundwater SL of 1.0 µg/L; VC concentrations in the two prior samples from ASB0251 were below the groundwater SL. Cis-1,2-DCE was detected in groundwater at one location, ASB0251; no SL is available for cis-1,2-DCE. The laboratory analytical data and applicable screening criteria are summarized in Table 2. Laboratory data packages are included in Appendix B.

3.3.3 Discussion

Although the VC concentration in groundwater from sample ASB0251R2 exceeded the SL, VC was not detected in the corresponding soil gas sample or in any of the previous soil gas samples at that location. The absence of VC in the soil gas from all three sampling events at this location and the samples from both adjacent locations indicates that VC is unlikely to pose a vapor intrusion concern for adjacent buildings. No further investigation of the commercial Algona area is recommended at this time.

4.0 CONCLUSIONS

Tier I vapor intrusion assessments were conducted within the commercial areas of Auburn and Algona. In commercial Auburn, detections of VC in soil and groundwater samples collected near the Los Cabos property will require additional vapor intrusion investigation to determine whether the vapor intrusion pathway poses a potential threat to indoor air quality. If acceptable locations are identified during a building survey, indoor air and sub-slab soil-vapor sampling will be proposed pending a site access agreement with the property owner and tenants. Additional sampling work will be detailed in a future work plan. Besides the Los Cabos property, no additional vapor intrusion assessment is proposed in Auburn at this time.

In Algona, detections of VC in groundwater do not appear to be resulting in concentrations of VC in soil gas; therefore, VC is unlikely to pose a vapor intrusion in commercial Algona. No additional vapor intrusion assessment is proposed in Algona at this time.

5.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of The Boeing Company for specific application to the Auburn Fabrication Site remedial investigation. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key environmental staff.

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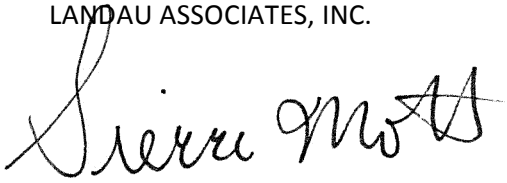

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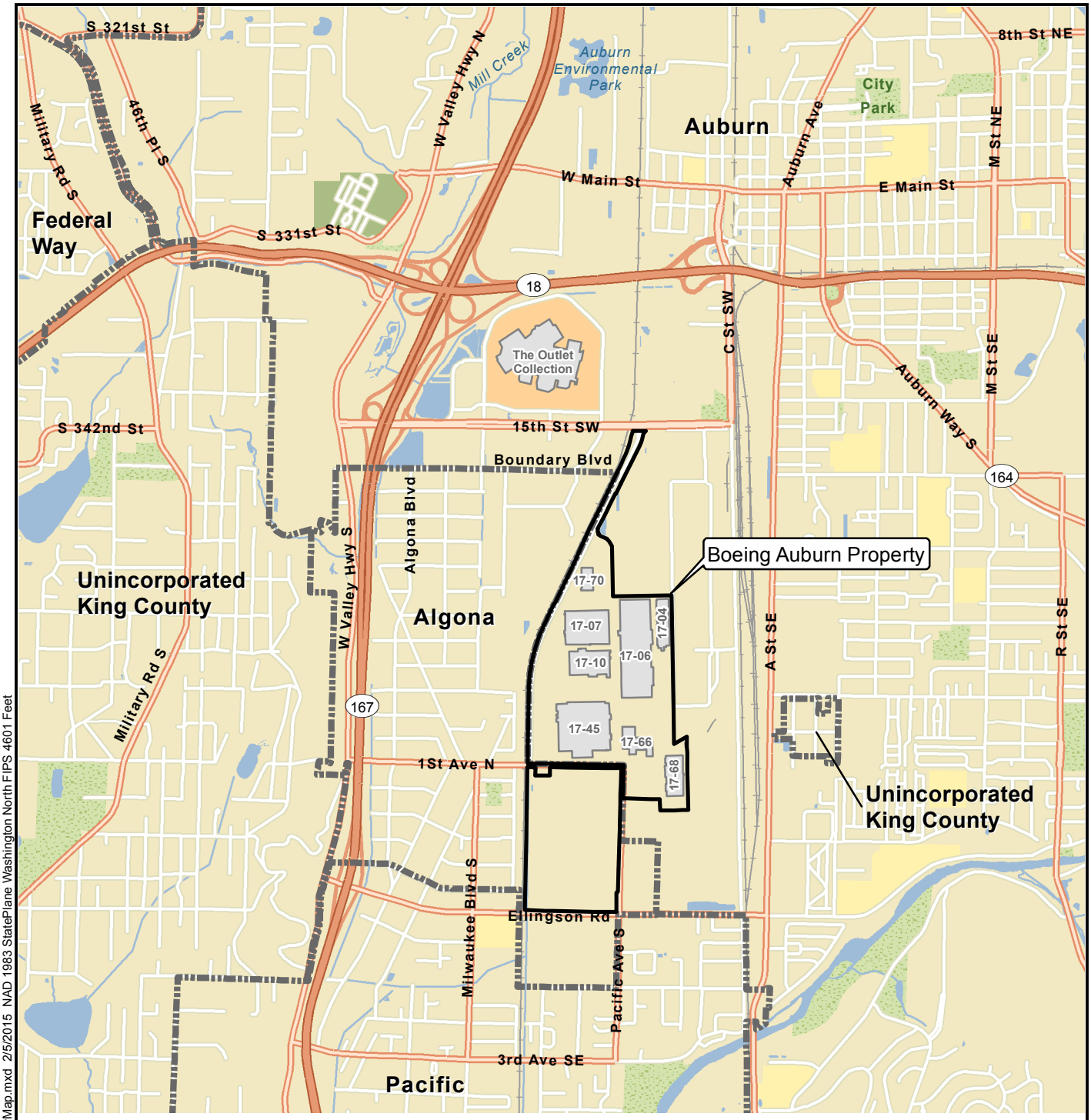

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Data Source: Esri 2012

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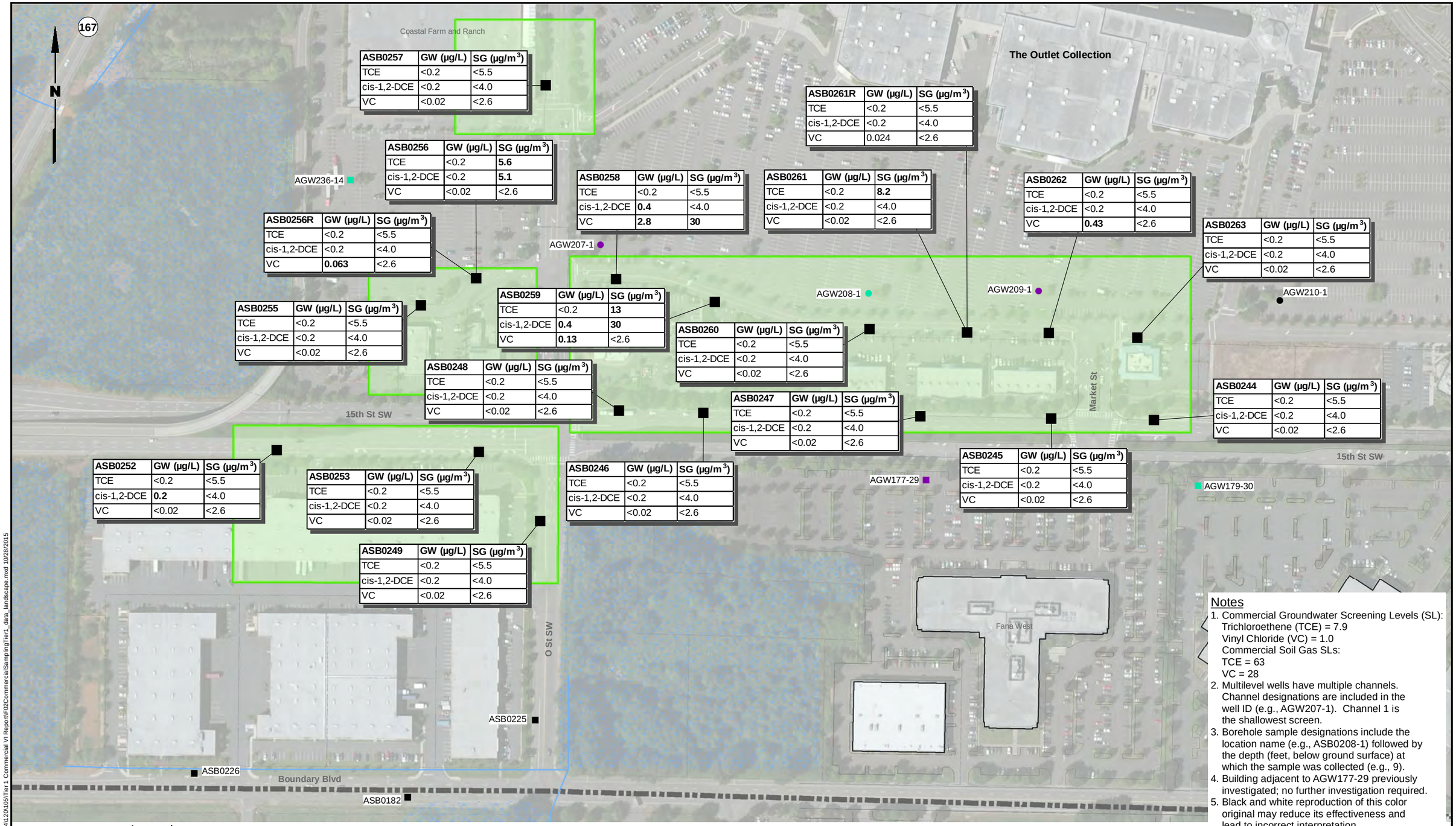
Boeing Auburn Auburn, Washington	**Vicinity Map**	Figure 1



ASB0257	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0256	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	**5.6**
cis-1,2-DCE	<0.2	**5.1**
VC	<0.02	<2.6

ASB0256R	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	**0.063**	<2.6

ASB0255	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0258	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	**0.4**	<4.0
VC	**2.8**	**30**

ASB0259	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	**13**
cis-1,2-DCE	**0.4**	**30**
VC	**0.13**	<2.6

ASB0260	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0261	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	**8.2**
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0261R	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	0.024	<2.6

ASB0262	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	**0.43**	<2.6

ASB0263	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0244	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0248	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0247	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0245	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0252	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	**0.2**	<4.0
VC	<0.02	<2.6

ASB0253	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0246	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

ASB0249	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	<0.02	<2.6

Notes

1. Commercial Groundwater Screening Levels (SL):
   Trichloroethene (TCE) = 7.9
   Vinyl Chloride (VC) = 1.0
   Commercial Soil Gas SLs:
   TCE = 63
   VC = 28
2. Multilevel wells have multiple channels. Channel designations are included in the well ID (e.g., AGW207-1). Channel 1 is the shallowest screen.
3. Borehole sample designations include the location name (e.g., ASB0208-1) followed by the depth (feet, below ground surface) at which the sample was collected (e.g., 9).
4. Building adjacent to AGW177-29 previously investigated; no further investigation required.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- MasterDirectPushGDB
- Shallow Well
- Borehole Grab Sample
- TCE and/or VC Exceed SL
- TCE and/or VC Detected (Neither Constituent Exceed SL)
- TCE and VC Not Detected
- Additional Tier 1 Assessment Area
- Wetland Areas
- City Limits

0 200 400
Scale in Feet

Base map source: Geometrix 2003; Aerial Photo Source: Esri World Imagery; Parcel Data Source: King County GIS 2013

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Auburn, Washington

Commercial Auburn Tier I Assessment Direct-Push Locations

Figure 2

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N

Fana West

Fana

Boundary Rd SW

ASB0234-25

11th Ave N

ASB0233-9

Milwaukee Ave N

10th Ave N

AGW193

AGW194

Industry Dr N

ASB0243-14

ASB0232-7

ASB0242-12

ASB0254	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	**11**
VC	<0.02	<2.6

9th Ave

ASB0251R	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	**1.7**	<4.0
VC	**0.72**	<2.6

ASB0251R2	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	**1.6**	<4.0
VC	**1.5**	<2.6

ASB251	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	**1.4**	<4.0
VC	**0.4**	<2.6

AGW251-1

ASB0250	GW (µg/L)	SG (µg/m^3)
TCE	<0.2	<5.5
cis-1,2-DCE	<0.2	<4.0
VC	**0.22**	<2.6

ASB0240-10

Interurban Trail

Perimeter Rd

ASB0239-9

8th Ave N

ASB0231-6

17-70

ASB0230-7

th Ave N

ASB0238-8

Broadway

ASB0237-8

17-15

17-32

6th Ave N

Notes

1. Commercial Groundwater Screening Levels (SL):
   Trichloroethene (TCE) = 7.9
   Vinyl Chloride (VC) = 1.0
   Commercial Soil Gas SLs:
   TCE = 63
   VC = 28
2. Multilevel wells have multiple channels. Channel designations are included in the well ID (e.g., AGW207-1). Channel 1 is the shallowest screen.
3. Borehole sample designations include the location name (e.g., ASB0208-1) followed by the depth (feet, below ground surface) at which the sample was collected (e.g., 9).
4. Building adjacent to AGW177-29 previously investigated; no further investigation required.
5. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- Tier I Direct-Push Location
- Monitoring Well
- Borehole Grab Sample
- TCE and/or VC Exceed SL
- TCE and/or VC are Detected (Neither Constituent Exceed SL)
- TCE and VC are Not Detected
- Additional Tier 1 Assessment Area
- Waterways
- Wetland Areas
- Boeing Property
- City Limits

Base map source: Geometrix 2003; Aerial Photo Source: Esri World Imagery; Parcel Data Source: King County GIS 2013

0 250 500

Scale in Feet

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

**Commercial Algona
Tier I Assessment
Direct-Push Locations**

Figure
3

Table 1
Auburn Soil Gas and Groundwater Analytical Data
Tier I Commercial Vapor Intrusion Assessment
Boeing Auburn

	Screening Level	ASG0244 MC032415-11 E503128-05 3/16/2015	ASG0245 MC032415-11 E503128-07 3/16/2015	ASG0246 MC032415-11 E503128-06 3/16/2015	ASG0247 MC032415-11 E503128-01 3/17/2015	ASG0248 MC032415-11 E503128-02 3/17/2015	ASG0249 MC032415-11 E503128-03 3/17/2015	ASG0252 MC032415-11 E503128-11 3/18/2015	ASG0253 MC032415-11 E503128-09 3/18/2015	ASG0255 MC050415-12 E505009-05 4/26/2015	ASG0256 MC050415-12 E505009-02 4/27/2015	ASG0256R MC070115-14 E507007-01 6/25/2015	ASG0257 MC050415-12 E505009-09 4/27/2015	ASG0258 MC050415-12 E505009-08 4/27/2015	ASG0259 MC050415-12 E505009-03 4/28/2015	ASG0260 MC050415-12 E505009-06 4/28/2015	ASG0261 MC050415-12 E505009-10 4/28/2015	ASG0261R MC070115-14 E507007-03 6/26/2015	ASG0262 MC050415-12 E505009-07 4/29/2015	ASG0263 MC050415-12 E505009-04 4/29/2015
VOLATILES (µg/m³)																				
Method EPA TO-15																				
cis-1,2-Dichloroethene		4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	**5.1**	4.0 U	4.0 U	4.0 U	**30**	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Trichloroethene	63	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	**5.6**	5.5 U	5.5 U	5.5 U	**13**	5.5 U	**8.2**	5.5 U	5.5 U	5.5 U
Vinyl chloride	28	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	**30**	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
VOLATILES (ppbv)																				
Method EPA TO-15																				
cis-1,2-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.3**	1.0 U	1.0 U	1.0 U	**7.5**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.0**	1.0 U	1.0 U	1.0 U	**2.3**	1.0 U	**1.5**	1.0 U	1.0 U	1.0 U
Vinyl chloride		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**11**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
HELIUM (%)																				
Method ASTM D1945M		0.10 U	0.10 U	**0.29**	0.10 U	0.10 U	0.10 U	0.10 U	**0.77**	0.10 U	**32.1**	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	**25.7**	**0.57**	0.10 U	0.10 U
		ASB0244-9 1546966 7814338 3/16/2015	ASB0245-10 1546966 7814340 3/16/2015	ASB0246-10 1546966 7814341 3/16/2015	ASB0247-7 1546966 7814346 3/17/2015	ASB0248-7 1546966 7814345 3/17/2015	ASB0249-7 1546966 7814344 3/17/2015	ASB0252-8 1546966 7814348 3/18/2015	ASB0253-8 1546966 7814347 3/18/2015	ASB0255-10 1557551 7868474 4/26/2015	ASB0256-12 1557551 7868475 4/27/2015	ASB0256R-15 1572790 7947121 6/26/2015	ASB0257-15 1557551 7868476 4/27/2015	ASB0258-10 1557551 7868478 4/28/2015	ASB0259-10 1557551 7868479 4/28/2015	ASB0260-8 1557551 7868480 4/28/2015	ASB0261-10 1557551 7868481 4/28/2015	ASB0261R-12 1572790 7947120 6/26/2015	ASB0262-10 1557551 7868482 4/29/2015	ASB0263-10 1557551 7868483 4/29/2015
VOLATILES (µg/L)																				
Method SW8260C																				
Acetone		5.0 U	5.0 U	5.0 U	5.0 U	**8.7**	5.0 U	5.0 U	**10**	**28**	**15**	5.0 U	**5.1**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene		0.2 U	0.2 U	0.2 U	0.2 U	**0.3**	0.2 U	**0.2**	**0.3**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**6.8**	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	**0.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone (MIBK)		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene		**0.2**	**0.2**	0.2 U	0.2 U	**0.5**	**0.3**	**0.3**	**0.4**	**0.4**	**0.3**	**0.3**	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	**1.7**	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	7.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Acetate		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	1.0	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.4**	0.2 U	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U
m,p-Xylene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VOLATILES (µg/L)																				
Method 8260C SIM																				
Vinyl Chloride	1.0	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	**0.063**	0.020 U	**2.8**	**0.13**	0.020 U	**0.024**	0.020 U	**0.43**	0.020 U

Bold = Detected compound.
Green = Exceedance of Screening Level
U = Indicates the compound was not detected at the reported concentration.

Table 2
Algona Soil Gas and Groundwater Analytical Data
Tier I Commercial Vapor Intrusion Assessment
Boeing Auburn

	Screening Level	ASG0250 MC032415-11 E503128-04 3/17/2015	ASG0251 MC032415-11 E503128-08 3/18/2015	ASG0251R MC050415-12 E505009-01 4/26/2015	ASG0251R2 MC070115-14 E507007-02 6/25/2015	ASG0254 MC032415-11 E503128-10 3/18/2015
VOLATILES (µg/m³) **Method EPA TO-15**						
cis-1,2-Dichloroethene		4.0 U	4.0 U	4.0 U	4.0 U	**11**
Trichloroethene	63	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
Vinyl chloride	28	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U
VOLATILES (ppbv) **Method EPA TO-15**						
cis-1,2-Dichloroethene		1.0 U	1.0 U	1.0 U	1.0 U	**2.8**
Trichloroethene		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
HELIUM (%)						
Method ASTM D1945M		0.10 U	**24.2**	**15.1**	0.10 U	0.10 U
		ASB0250-7 1546966 7814343 3/17/2015	ASB0251-7 1546966 7814349 3/18/2015	ASB0251R-8 1557551 7868473 4/26/2015	ASB0251R2-8 1572790 7947119 6/25/2015	ASB0254-8 1546966 7814342 3/18/2015
VOLATILES (µg/L) **Method SW8260C**						
Acetone		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromochloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene		0.2 U	**1.4**	**1.7**	**1.6**	0.2 U
trans-1,2-Dichloroethene		0.2 U	0.2 U	**0.3**	**0.3**	0.2 U
1,2-Dichloropropane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,3-Dichloropropene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylbenzene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone (MIBK)		5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Styrene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene		0.2 U	0.2 U	0.2 U	**0.3**	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	7.9	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Acetate		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	1.0	**0.2**	**0.4**	**0.6**	**1.5**	0.2 U
m,p-Xylene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VOLATILES (µg/L) **Method 8260C SIM**						
Vinyl Chloride	1.0	**0.22**	**0.32**	**0.72**	**1.5**	0.020 U

Bold = Detected compound.
Green = Exceedance of Screening Level
U = Indicates the compound was not detected at the reported concentration.

APPENDIX A

Boring Logs

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS [2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30% - "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15% - "with gravel," "with sand," "with silt," etc.
	≤ 5% - "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

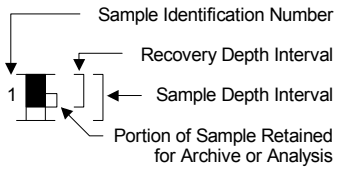
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)

▼ Approximate water level at time other than ATD

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Auburn, Washington

Soil Classification System and Key

Figure A-1

ASB0244

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™
Ground Elevation (ft): 82.276588
Drilled By: Cascade Drilling Inc.

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Soil Profile	Water Level
0							AC	Asphalt concrete pavement	
							GP-GM	Gray/brown, sandy GRAVEL with silt (medium dense, damp)	
	80		e4				SM	**(FILL)**	
								Dark grayish-brown, silty, fine to medium SAND with peat (medium dense, moist)	
5		S-1	d					**(ALLUVIUM)**	
							GP-GM	**Soil gas sample: ASG0244-20150316**	
							PT	Gray, sandy GRAVEL	▽ ATD
	75	S-2	d e4				SM	Brown PEAT (soft, moist)	
								Brownish-gray, silty, fine SAND with medium sand lenses (medium dense, wet)	
10								**Groundwater sample: ASB0244-9-20150316**	

Boring Completed 03/16/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-1

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0244

Figure
A-2

ASB0245

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 82.083038 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0245-20150316**	
5	75								▽ ATD
10								**Groundwater sample: ASB0245-10-20150316**	

Boring Completed 03/16/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-2

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0245

Figure
A-3

ASB0246

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 78.801178 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0246-20150316**	
5									▽ ATD
	70								
10								**Groundwater sample: ASB0246-10-20150316**	

Boring Completed 03/16/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-4

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0246

Figure
A-4

ASB0247

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 80.880806 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0247-20150317**	▽ ATD
5	75								
10								**Groundwater sample: ASB0247-10-2015-0317**	
15									
20									
25									
30									
35									

Boring Completed 03/17/15
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-3

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0247

Figure
A-5

ASB0248

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 78.762901 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0248-20150317**	
5								**Groundwater sample: ASB0248-7-20150317**	
	70								▽ ATD
10									

Boring Completed 03/17/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-5

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0248

Figure
A-6

ASB0249

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 76.877930 Drilled By: Cascade Drilling Inc.	Water Level
0	75							Not sampled **Soil gas sample: ASG0249-20150317**	
5	70							**Groundwater sample: ASB0249-7-20150317**	▽ ATD
10									

Boring Completed 03/17/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-15

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0249

Figure
A-7

ASB0250

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 79.363335 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0250-20150317**	▽ ATD
5									
	70							**Groundwater sample: ASB0250-7-20150317**	
10									

Boring Completed 03/17/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-20

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0250

Figure
A-8

ASB0251

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 79.154030 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0251-20150318**	▽ ATD
5									
	70							**Groundwater sample: ASB0251-7-20150318**	
10									

Boring Completed 03/18/15
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designaton P-19

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0251

Figure
A-9

ASB0251R

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 80.264915 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0251R-20150426**	▽ ATD
5	75								
10								**Groundwater sample: ASB0251R-10-20150426**	

Boring Completed 04/26/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-19

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0251R

Figure
A-10

ASB0251R2

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Geoprobe™

Ground Elevation (ft): 80.264915

Drilled By: Cascade Drilling Inc.

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0	80		e4				AC	
							GP-GM	
							SP	
5	75							▽ ATD
10								
15								
20								
25								
30								
35								

Asphalt

Grey, sandy GRAVEL with silt (medium dense, damp)

(FILL)

Dark grey, fine SAND (medium dense, damp)

(ALLUVIUM)

Soil gas sample: ASG0251R2-20150625

Not sampled

Groundwater sample: ASB0251R2-8-20150625

Boring Completed 06/25/15
Total Depth of Boring = 10.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-19

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of ASB0251R2

Figure
A-11

ASB0252

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 75.764519 Drilled By: Cascade Drilling Inc.	Water Level
0	75							Not sampled **Soil gas sample: ASG0252-20150318**	
5	70							**Groundwater sample: ASB0252-8-20150318**	▽ ATD
10									

Boring Completed 03/18/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-17

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0252

Figure
A-12

ASB0253

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 76.786560 Drilled By: Cascade Drilling Inc.	Water Level
0	75							Not sampled **Soil gas sample: ASG0253-20150318**	▽ ATD
5	70							**Groundwater sample: ASB0253-8-20150318**	
10									

Boring Completed 03/18/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-16

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0253

Figure
A-13

ASB0254

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 79.345413 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0254-20150318**	▽ ATD
5									
	70							**Groundwater sample: ASB0254-8-20150318**	
10									

Boring Completed 03/18/15
Total Depth of Boring = 10.0 ft.

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-18

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Log of Soil Boring ASB0254

Figure
A-14

ASB0255

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 80.14814 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0255-20150426**	
5	75								▽ ATD
10	70							**Groundwater sample: ASB0255-10-20150426**	
15									

Boring Completed 04/26/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-14

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Auburn, Washington

Log of Soil Boring ASB0255

Figure
A-15

ASB0256

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 80.166824 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0256-20150426**	
5	75								
10	70							**Groundwater sample: ASB0256-12-20150427**	▽ ATD
15									
20									
25									
30									
35									

Boring Completed 04/27/15
Total Depth of Boring = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-13

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Auburn, Washington

Log of Soil Boring ASB0256

Figure
A-16

ASB0256R

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level

Drilling Method: Geoprobe™

Ground Elevation (ft): 80.166824

Drilled By: Cascade Drilling Inc.

Depth (ft)	Elevation	Sampler Type	USCS Symbol	
0	80		AC	Asphalt
		e4	SP-SM	Grey, gravelly, fine SAND with silt (medium dense, damp) **(FILL)**
				Soil gas sample: ASG0256R-20150625
5	75			Not sampled
				ATD
10	70			
15				**Groundwater sample: ASB0256R-15-20150625**

Boring Completed 06/25/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-13

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of ASB0256R

Figure
A-17

ASB0257

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 78.897575 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0257-20150427**	
5									
	70								
10									▽ ATD
	65								
15								**Groundwater sample: ASB0257-15-20150427**	

Boring Completed 04/27/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-12

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0257

Figure
A-18

ASB0258

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 80.491234 Drilled By: Cascade Drilling Inc.	Water Level
0	80	S-1	d				AC	Asphalt concrete pavement	
							GP	Gray, sandy GRAVEL with silt (dense, damp)	
		S-2	e4 d				SM	**(FILL)**	
								Gray, silty, fine SAND with gravel (dense, damp)	
5	75	S-3	d				SM	**(ALLUVIUM)** **Soil gas sample: ASG0258-20150428**	
		S-4	d				GP	Gray, very silty SAND with gravel (medium dense, damp)	
			e4					Gray, sandy GRAVEL with silt (dense, wet)	ATD
		S-5	d					- grades with silty SAND with gravel and layers of peat	
10	70	S-6	d				SM	Gray, siilty, fine to medium SAND (medium dense, wet)	
		S-7	d					**Groundwater sample: ASB0258-10-20150428**	
		S-8	d				PT		
		S-9	e4 d				SP	- grades with gravel, dense	
		S-10	d				ML	Brown PEAT (soft, wet)	
15								Gray, fine SAND (medium dense, wet)	
								Gray SILT with sand (dense, wet)	

Boring Completed 04/27/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-11

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0258

Figure
A-19

ASB0259

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 78.990189 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0259-20150428**	
5									▽ ATD
	70								
10								**Groundwater sample: ASB0259-10-20150428**	
	65								
15									

Boring Completed 04/28/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-10

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0259

Figure
A-20

ASB0260

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 79.117012 Drilled By: Cascade Drilling Inc.	Water Level
0								Not sampled	
	75							**Soil gas sample: ASG0260-20150428**	▽ ATD
5									
	70							**Groundwater sample: ASB0260-8-20150428**	
10									
	65								
15									

Boring Completed 04/28/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-9

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0260

Figure
A-21

ASB0261

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 80.506592 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0261-20150428**	
5	75								▽ ATD
10	70							**Groundwater sample: ASB0261-10-20150428**	
15									
20									
25									
30									
35									

Boring Completed 04/28/15
Total Depth of Boring = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-8

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0261

Figure
A-22

ASB0261R

SAMPLE DATA | **SOIL PROFILE** | **GROUNDWATER**

Drilling Method: Geoprobe™

Ground Elevation (ft): 80.506592

Drilled By: Cascade Drilling Inc.

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0	80		e4				AC	
							SP-SM	
5	75							
10	70							
15								

AC — Asphalt

SP-SM — Grey, gravelly, fine SAND with silt (medium dense, damp)

(FILL)

Soil gas sample: ASG0261R-20150626

▽ ATD

Groundwater sample: ASB0261R-15-20150626

Boring Completed 06/26/15
Total Depth of Boring = 15.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-8

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

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Boeing Auburn
Auburn, Washington

Log of ASB0261R

Figure
A-23

ASB0262

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 81.504982 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0262-20150429**	
5	75								▽ ATD
10	70							**Groundwater sample: ASB0262-10-20150429**	
15									

Boring Completed 04/29/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-7

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0262

Figure
A-24

ASB0263

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 81.579483 Drilled By: Cascade Drilling Inc.	Water Level
0	80							Not sampled **Soil gas sample: ASG0263-20150429**	
5	75								▽ ATD
10	70							**ASB0263-10-20150429**	
15									

Boring Completed 04/29/15
Total Depth of Boring = 15.0 ft.

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Work plan designation P-6

025164. 7/10/15 N:\PROJECTS\025164 - MASTER FILE.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Boeing Auburn
Auburn, Washington

Log of Soil Boring ASB0263

Figure
A-25

APPENDIX B

Laboratory Data Packages

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5/5/2015

Ms. Anne Halvorsen
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Boeing Auburn
Project #: 0025164.120.105
Workorder #: 1504384A

Dear Ms. Anne Halvorsen

The following report includes the data for the above referenced project for sample(s) received on 4/22/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1504384A

Work Order Summary

CLIENT:	Ms. Anne Halvorsen Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Robert Large Eurofins Lancaster Laboratories Environmental, LLC 2425 New Holland Pike Lancaster, PA 17605-2425
PHONE:	425.778.0907	**P.O. #**	0025164.120.105
FAX:		**PROJECT #**	0025164.120.105 Boeing Auburn
DATE RECEIVED:	04/22/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/05/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	AA033-20150420	Modified TO-15	6.9 "Hg	5.1 psi
02A	IA075-20150420	Modified TO-15	5.9 "Hg	5 psi
03A	IA076-20150420	Modified TO-15	3.3 "Hg	4.9 psi
04A	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/05/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified TO-15 Low Level
Landau Associates, Inc.
Workorder# 1504384A

Three 6 Liter Summa Canister (SIM Certified) samples were received on April 22, 2015. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

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

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***
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

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, LOD, or MDL value. See data page for project specific U-flag definition.

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

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

eurofins | Air Toxics

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

Client Sample ID: AA033-20150420

Lab ID#: 1504384A-01A

No Detections Were Found.

Client Sample ID: IA075-20150420

Lab ID#: 1504384A-02A

No Detections Were Found.

Client Sample ID: IA076-20150420

Lab ID#: 1504384A-03A

No Detections Were Found.

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Client Sample ID: AA033-20150420

Lab ID#: 1504384A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042416**	**Date of Collection: 4/20/15 8:08:00 AM**	
Dil. Factor:	**1.75**	**Date of Analysis: 4/24/15 06:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
cis-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Trichloroethene	0.18	Not Detected	0.94	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: IA075-20150420

Lab ID#: 1504384A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042421**	**Date of Collection: 4/20/15 7:45:00 AM**	
Dil. Factor:	**1.67**	**Date of Analysis: 4/24/15 10:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.17	Not Detected	0.43	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Trichloroethene	0.17	Not Detected	0.90	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: IA076-20150420

Lab ID#: 1504384A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042418**	**Date of Collection: 4/20/15 7:54:00 AM**	
Dil. Factor:	**1.50**	**Date of Analysis: 4/24/15 07:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected
cis-1,2-Dichloroethene	0.15	Not Detected	0.59	Not Detected
Trichloroethene	0.15	Not Detected	0.81	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1504384A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 10:48 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 1504384A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 06:56 AM**	

Compound	%Recovery
Vinyl Chloride	85
cis-1,2-Dichloroethene	89
Trichloroethene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCS

Lab ID#: 1504384A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 07:38 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	94	70-130
cis-1,2-Dichloroethene	109	70-130
Trichloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCSD

Lab ID#: 1504384A-06AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**e042404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 08:27 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	94	70-130
cis-1,2-Dichloroethene	110	70-130
Trichloroethene	105	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	100	70-130

Mobile Geochemistry Inc.

13 May 2015

Ms. Jennifer Wynkoop
Landau Associates - Tacoma
950 Pacific Ave., Ste 515
Tacoma, WA 98402

H&P Project: MC050415-12
Client Project: 0025164.120.105 / Auburn, WA

Dear Ms. Jennifer Wynkoop:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 04-May-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG0251R-20150426	E505009-01	Vapor	26-Apr-15	04-May-15
ASG0256-20150426	E505009-02	Vapor	27-Apr-15	04-May-15
ASG0259-20150428	E505009-03	Vapor	28-Apr-15	04-May-15
ASG0263-20150429	E505009-04	Vapor	29-Apr-15	04-May-15
ASG0255-20150426	E505009-05	Vapor	26-Apr-15	04-May-15
ASG0260-20150428	E505009-06	Vapor	28-Apr-15	04-May-15
ASG0262-20150429	E505009-07	Vapor	29-Apr-15	04-May-15
ASG0258-20150427	E505009-08	Vapor	27-Apr-15	04-May-15
ASG0257-20150427	E505009-09	Vapor	27-Apr-15	04-May-15
ASG0261-20150428	E505009-10	Vapor	28-Apr-15	04-May-15

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

DETECTIONS SUMMARY

Sample ID: **ASG0251R-20150426** Laboratory ID: **E505009-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**15.1**	0.10	%	ASTM D1945M	

Sample ID: **ASG0256-20150426** Laboratory ID: **E505009-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**32.1**	0.10	%	ASTM D1945M	
cis-1,2-Dichloroethene	**5.1**	4.0	ug/m3	EPA TO-15	
Trichloroethene	**5.6**	5.5	ug/m3	EPA TO-15	

Sample ID: **ASG0259-20150428** Laboratory ID: **E505009-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**30**	4.0	ug/m3	EPA TO-15	
Trichloroethene	**13**	5.5	ug/m3	EPA TO-15	

Sample ID: **ASG0263-20150429** Laboratory ID: **E505009-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0255-20150426** Laboratory ID: **E505009-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0260-20150428** Laboratory ID: **E505009-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0262-20150429** Laboratory ID: **E505009-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Sample ID: **ASG0258-20150427** Laboratory ID: **E505009-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
Vinyl chloride	**30**	2.6	ug/m3	EPA TO-15	

Sample ID: **ASG0257-20150427** Laboratory ID: **E505009-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0261-20150428** Laboratory ID: **E505009-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**25.7**	0.10	%	ASTM D1945M	
Trichloroethene	**8.2**	5.5	ug/m3	EPA TO-15	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0251R-20150426 (E505009-01) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	**15.1**	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0256-20150426 (E505009-02) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	**32.1**	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0259-20150428 (E505009-03) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0263-20150429 (E505009-04) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0255-20150426 (E505009-05) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0260-20150428 (E505009-06) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0262-20150429 (E505009-07) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0258-20150427 (E505009-08) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0257-20150427 (E505009-09) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	

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760-804-9678 Phone
760-804-9159 Fax

Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0261-20150428 (E505009-10) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	**25.7**	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0251R-20150426 (E505009-01) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*117 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.1 %*	*77-127*		"	"	"	"	
ASG0256-20150426 (E505009-02) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	**5.1**	4.0	"	"	"	"	"	"	
Trichloroethene	**5.6**	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*99.0 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*	*77-127*		"	"	"	"	
ASG0259-20150428 (E505009-03) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	**30**	4.0	"	"	"	"	"	"	
Trichloroethene	**13**	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.3 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.4 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*77-127*		"	"	"	"	
ASG0263-20150429 (E505009-04) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.1 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.5 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*	*77-127*		"	"	"	"	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0255-20150426 (E505009-05) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*77-127*		"	"	"	"	
ASG0260-20150428 (E505009-06) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.1 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*77-127*		"	"	"	"	
ASG0262-20150429 (E505009-07) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.5 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.9 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*77-127*		"	"	"	"	
ASG0258-20150427 (E505009-08) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	**30**	2.6	ug/m3	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.0 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.5 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*109 %*	*77-127*		"	"	"	"	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0257-20150427 (E505009-09) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.2 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*77-127*		"	"	"	"	
ASG0261-20150428 (E505009-10) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	**8.2**	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*97.2 %*	*78-125*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*	*77-127*		"	"	"	"	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE50614 - GC										
Blank (EE50614-BLK1)				Prepared & Analyzed: 05-May-15						
Helium (LCC)	ND	0.10	%							

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE50707 - TO-15										
Blank (EE50707-BLK1)				Prepared & Analyzed: 06-May-15						
Vinyl chloride	ND	2.6	ug/m3							
cis-1,2-Dichloroethene	ND	4.0	"							
Trichloroethene	ND	5.5	"							
Surrogate: 1,2-Dichloroethane-d4	*223*		"	*214*		*104*	*76-134*			
Surrogate: Toluene-d8	*205*		"	*207*		*98.8*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*343*		"	*364*		*94.2*	*77-127*			
LCS (EE50707-BS1)				Prepared & Analyzed: 06-May-15						
Vinyl chloride	37	2.6	ug/m3	52.0		70.4	70-130			
cis-1,2-Dichloroethene	74	4.0	"	80.0		92.6	70-130			
Trichloroethene	99	5.5	"	110		90.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	*222*		"	*214*		*104*	*76-134*			
Surrogate: Toluene-d8	*207*		"	*207*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*355*		"	*364*		*97.4*	*77-127*			
LCS Dup (EE50707-BSD1)				Prepared & Analyzed: 06-May-15						
Vinyl chloride	38	2.6	ug/m3	52.0		72.6	70-130	3.00	25	
cis-1,2-Dichloroethene	75	4.0	"	80.0		94.2	70-130	1.67	25	
Trichloroethene	99	5.5	"	110		90.6	70-130	0.275	25	
Surrogate: 1,2-Dichloroethane-d4	*225*		"	*214*		*105*	*76-134*			
Surrogate: Toluene-d8	*205*		"	*207*		*99.2*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*368*		"	*364*		*101*	*77-127*			

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:12

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

H&P Mobile Geochemistry, Inc.

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& Field Office - Signal Hill, CA
W handpmg.com E info@handpmg.com
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VAPOR / AIR Chain of Custody

DATE: 4/29/15
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: Landau Associates	Project Name / #: 0025164.120.105
Lab Client Project Manager: Jenn: Per Wynkoop	Project Location: Auburn, WA
Lab Client Address: 920 Pacific Ave, Ste 515	Report E-Mail(s): see attachment
Lab Client City, State, Zip: Tacoma, WA 98402	
Phone Number: 253-926-2493	

Reporting Requirements
- [x] Standard Report [ ] Level III [ ] Level IV
- [x] Excel EDD [ ] Other EDD:
- [ ] CA Geotracker Global ID:

Turnaround Time
- [x] 5-7 day Stnd [ ] 24-Hr Rush
- [ ] 3-day Rush [ ] Mobile Lab
- [ ] 48-Hr Rush [ ] Other:

Sampler Information
Sampler(s): SMM/NTD
Signature: Sierra Mott
Date: 4/29/15

Sample Receipt (Lab Use Only)

Date Rec'd: 5/4/15	Control #: 150316-01
H&P Project # MC05415-12	
Lab Work Order #	
Sample Intact: [x] Yes [ ] No [ ] See Notes Below	
Receipt Gauge ID: 11167	Temp: 22°C
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6190485072S4	
Lab PM Initials: MA	

Additional Instructions to Laboratory:
- [x] Check if Project Analyte List is Attached
- * Preferred VOC units (please choose one):
- [ ] µg/L [x] µg/m³ [x] ppbv [ ] ppmv

SEE 5/4/15

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List [ ] 8260SV [ ] TO-15	VOCs Short List / Project List [x] 8260SV [x] TO-15	Oxygenates [ ] 8260SV [ ] TO-15	Naphthalene [ ] 8260SV [ ] TO-15 [ ] TO-17m	TPHv as Gas [ ] 8260SVm [ ] TO-15m	TPHv as Diesel (sorbent tube) [ ] TO-17m	Aromatic/Aliphatic Fractions [ ] 8260SVm [ ] TO-15m	Leak Check Compound [x] He [ ] DFA [ ] IPA	Methane by EPA 8015m	Fixed Gases by ASTM D1945 [ ] CO2 [ ] O2 [ ] N2			
ASG0251-20150426	P-19	4/26/15	1930	SV	400mL Summa	129	-.02		X						X					
ASG0256-20150427	P-13	4/27/15	001			067	.23		X						X					
ASG0259-20150428	P-10	4/28/15	127			198	-.01		X						X					
ASG0263-20150429	P-6	4/29/15	157			213	1.28		X						X					
ASG0255-20150426	P-14	4/26/15	2143			236	-12.42		X						X					
ASG0260-20150428	P-9	4/28/15	303			205	-9.30		X						X					
ASG0262-20150429	P-7	4/29/15	017			029	-9.90		X						X					
ASG0258-20150427	P-11	4/27/15	2311			037	-.58		X						X					
ASG0257-20150427	P-12	4/27/15	143			352	-3.60		X						X					
ASG0261-20150428	P-8	4/28/15	2231			310	.84		X						X					

	Company:	Date:	Time:		Company:	Date:	Time:
Approved/Relinquished by: Sierra Mott	Landau	4/29/15	1338	Received by: Jon Unsworth	H&P	5/4/15	1050
Approved/Relinquished by:				Received by:			
Approved/Relinquished by:				Received by:			

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 08/18/2014

4/29/2015

ATTACHMENT TO COC

Project Info:

Consultant: Landau Associates

Lab Client Project Manager: Jennifer Wynkoop

Project Name/#: Boeing Auburn Tier 1 025164.120.105

Project Location: Auburn and Algona, WA

Report E-Mails: → FOR FINAL REPORT ONLY

Jim Bet – James.n.bet@boeing.com

Jennifer Wynkoop – jwynkoop@landauinc.com (JW 5/4/15)

Eric Weber – eweber@landauinc.com

Sarah Fees – sfees@landauinc.com ——— DRAFT DATA ONLY

Terry McGourty - tmcgourty@landauinc.com

Anne Halvorsen – ahalvorsen@landauinc.com

Project Analyte List:

Method TO-15: Trichlorethene, cis-1,2-Dichloroethene and Vinyl Chloride

Method ASTM D1945: Helium

Comments:

Please include project number (025164.120.105) on invoice. Billing contact is Jennifer Wynkoop.

Mobile Geochemistry Inc.

13 May 2015

Ms. Jennifer Wynkoop
Landau Associates - Tacoma
950 Pacific Ave., Ste 515
Tacoma, WA 98402

H&P Project: MC050415-12
Client Project: 0025164.120.105 / Auburn, WA

Dear Ms. Jennifer Wynkoop:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 04-May-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
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Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG0251R-20150426	E505009-01	Vapor	26-Apr-15	04-May-15
ASG0256-20150426	E505009-02	Vapor	27-Apr-15	04-May-15
ASG0259-20150428	E505009-03	Vapor	28-Apr-15	04-May-15
ASG0263-20150429	E505009-04	Vapor	29-Apr-15	04-May-15
ASG0255-20150426	E505009-05	Vapor	26-Apr-15	04-May-15
ASG0260-20150428	E505009-06	Vapor	28-Apr-15	04-May-15
ASG0262-20150429	E505009-07	Vapor	29-Apr-15	04-May-15
ASG0258-20150427	E505009-08	Vapor	27-Apr-15	04-May-15
ASG0257-20150427	E505009-09	Vapor	27-Apr-15	04-May-15
ASG0261-20150428	E505009-10	Vapor	28-Apr-15	04-May-15

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Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

DETECTIONS SUMMARY

Sample ID: **ASG0251R-20150426** Laboratory ID: **E505009-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**15.1**	0.10	%	ASTM D1945M	

Sample ID: **ASG0256-20150426** Laboratory ID: **E505009-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**32.1**	0.10	%	ASTM D1945M	
cis-1,2-Dichloroethene	**1.3**	1.0	ppbv	EPA TO-15	
Trichloroethene	**1.0**	1.0	ppbv	EPA TO-15	

Sample ID: **ASG0259-20150428** Laboratory ID: **E505009-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**7.5**	1.0	ppbv	EPA TO-15	
Trichloroethene	**2.3**	1.0	ppbv	EPA TO-15	

Sample ID: **ASG0263-20150429** Laboratory ID: **E505009-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0255-20150426** Laboratory ID: **E505009-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0260-20150428** Laboratory ID: **E505009-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0262-20150429** Laboratory ID: **E505009-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

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Landau Associates - Tacoma	Project: MC050415-12	
950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Sample ID: **ASG0258-20150427** Laboratory ID: **E505009-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
Vinyl chloride	**11**	1.0	ppbv	EPA TO-15	

Sample ID: **ASG0257-20150427** Laboratory ID: **E505009-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0261-20150428** Laboratory ID: **E505009-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**25.7**	0.10	%	ASTM D1945M	
Trichloroethene	**1.5**	1.0	ppbv	EPA TO-15	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0251R-20150426 (E505009-01) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	**15.1**	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0256-20150426 (E505009-02) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	**32.1**	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0259-20150428 (E505009-03) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0263-20150429 (E505009-04) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0255-20150426 (E505009-05) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0260-20150428 (E505009-06) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0262-20150429 (E505009-07) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0258-20150427 (E505009-08) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	
ASG0257-20150427 (E505009-09) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	ND	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0261-20150428 (E505009-10) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Helium (LCC)	**25.7**	0.10	%	1	EE50614	05-May-15	05-May-15	ASTM D1945M	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0251R-20150426 (E505009-01) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*117 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*102 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.1 %*		*77-127*	"	"	"	"	
ASG0256-20150426 (E505009-02) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	**1.3**	1.0	"	"	"	"	"	"	
Trichloroethene	**1.0**	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*98.1 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*99.0 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*106 %*		*77-127*	"	"	"	"	
ASG0259-20150428 (E505009-03) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	**7.5**	1.0	"	"	"	"	"	"	
Trichloroethene	**2.3**	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*95.3 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*97.4 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*		*77-127*	"	"	"	"	
ASG0263-20150429 (E505009-04) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*92.1 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*97.5 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*107 %*		*77-127*	"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0255-20150426 (E505009-05) Vapor	**Sampled: 26-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	06-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*		*76-134*		*"*	*"*	*"*	
Surrogate: Toluene-d8		*97.2 %*		*78-125*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*109 %*		*77-127*		*"*	*"*	*"*	
ASG0260-20150428 (E505009-06) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.1 %*		*76-134*		*"*	*"*	*"*	
Surrogate: Toluene-d8		*99.5 %*		*78-125*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*109 %*		*77-127*		*"*	*"*	*"*	
ASG0262-20150429 (E505009-07) Vapor	**Sampled: 29-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.5 %*		*76-134*		*"*	*"*	*"*	
Surrogate: Toluene-d8		*97.9 %*		*78-125*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*110 %*		*77-127*		*"*	*"*	*"*	
ASG0258-20150427 (E505009-08) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	**11**	1.0	ppbv	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*90.0 %*		*76-134*		*"*	*"*	*"*	
Surrogate: Toluene-d8		*97.5 %*		*78-125*		*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*109 %*		*77-127*		*"*	*"*	*"*	

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0257-20150427 (E505009-09) Vapor	**Sampled: 27-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.2 %*		*76-134*		"	"	"	
Surrogate: Toluene-d8		*97.2 %*		*78-125*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*		*77-127*		"	"	"	
ASG0261-20150428 (E505009-10) Vapor	**Sampled: 28-Apr-15**	**Received: 04-May-15**							
Vinyl chloride	ND	1.0	ppbv	1	EE50707	06-May-15	07-May-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	**1.5**	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*89.0 %*		*76-134*		"	"	"	
Surrogate: Toluene-d8		*97.2 %*		*78-125*		"	"	"	
Surrogate: 4-Bromofluorobenzene		*108 %*		*77-127*		"	"	"	

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Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE50614 - GC										
Blank (EE50614-BLK1)				Prepared & Analyzed: 05-May-15						
Helium (LCC)	ND	0.10	%							

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950 Pacific Ave., Ste 515	Project Number: 0025164.120.105 / Auburn, WA	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EE50707 - TO-15										
Blank (EE50707-BLK1)				Prepared & Analyzed: 06-May-15						
Vinyl chloride	ND	1.0	ppbv							
cis-1,2-Dichloroethene	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*52.2*		*"*	*50.2*		*104*	*76-134*			
Surrogate: Toluene-d8	*49.2*		*"*	*49.8*		*98.8*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*47.3*		*"*	*50.2*		*94.2*	*77-127*			
LCS (EE50707-BS1)				Prepared & Analyzed: 06-May-15						
Vinyl chloride	14	1.0	ppbv	20.1		70.4	70-130			
cis-1,2-Dichloroethene	18	1.0	"	19.9		92.6	70-130			
Trichloroethene	18	1.0	"	20.1		90.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	*52.0*		*"*	*50.2*		*104*	*76-134*			
Surrogate: Toluene-d8	*49.9*		*"*	*49.8*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*48.9*		*"*	*50.2*		*97.4*	*77-127*			
LCS Dup (EE50707-BSD1)				Prepared & Analyzed: 06-May-15						
Vinyl chloride	15	1.0	ppbv	20.1		72.6	70-130	3.00	25	
cis-1,2-Dichloroethene	19	1.0	"	19.9		94.2	70-130	1.67	25	
Trichloroethene	18	1.0	"	20.1		90.6	70-130	0.275	25	
Surrogate: 1,2-Dichloroethane-d4	*52.6*		*"*	*50.2*		*105*	*76-134*			
Surrogate: Toluene-d8	*49.4*		*"*	*49.8*		*99.2*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*50.6*		*"*	*50.2*		*101*	*77-127*			

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Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	13-May-15 13:13

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

H&P Mobile Geochemistry, Inc.

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VAPOR / AIR Chain of Custody

DATE: 4/29/15
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: Landau Associates	Project Name / #: 0025164.120.105
Lab Client Project Manager: Jenn: Per Wynkoop	Project Location: Auburn, WA
Lab Client Address: 920 Pacific Ave, Ste 515	Report E-Mail(s): see attachment
Lab Client City, State, Zip: Tacoma, WA 98402	
Phone Number: 253-926-2493	

Reporting Requirements
- [x] Standard Report [ ] Level III [ ] Level IV
- [x] Excel EDD [ ] Other EDD:
- [ ] CA Geotracker Global ID:

Turnaround Time
- [x] 5-7 day Stnd [ ] 24-Hr Rush
- [ ] 3-day Rush [ ] Mobile Lab
- [ ] 48-Hr Rush [ ] Other:

Sampler Information
Sampler(s): SMM/NTD
Signature: Sierra Mott
Date: 4/29/15

Sample Receipt (Lab Use Only)

Date Rec'd: 5/4/15	Control #: 150316-01
H&P Project # MC05415-12	
Lab Work Order #	
Sample Intact: [x] Yes [ ] No [ ] See Notes Below	
Receipt Gauge ID: 11167	Temp: 22°C
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6190485072S4	
Lab PM Initials: MA	

Additional Instructions to Laboratory:
- [x] Check if Project Analyte List is Attached
- * Preferred VOC units (please choose one):
- [ ] µg/L [x] µg/m³ [x] ppbv [ ] ppmv

SEE 5/4/15

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List [ ] 8260SV [ ] TO-15	VOCs Short List / Project List [x] 8260SV [x] TO-15	Oxygenates [ ] 8260SV [ ] TO-15	Naphthalene [ ] 8260SV [ ] TO-15 [ ] TO-17m	TPHv as Gas [ ] 8260SVm [ ] TO-15m	TPHv as Diesel (sorbent tube) [ ] TO-17m	Aromatic/Aliphatic Fractions [ ] 8260SVm [ ] TO-15m	Leak Check Compound [x] He [ ] DFA [ ] IPA	Methane by EPA 8015m	Fixed Gases by ASTM D1945 [ ] CO2 [ ] O2 [ ] N2			
ASG0251-20150426	P-19	4/26/15	1930	SV	400mL Summa	129	-.02		X						X					
ASG0256-20150427	P-13	4/27/15	001			067	.23		X						X					
ASG0259-20150428	P-10	4/28/15	127			198	-.01		X						X					
ASG0263-20150429	P-6	4/29/15	157			213	1.28		X						X					
ASG0255-20150426	P-14	4/26/15	2143			236	-12.42		X						X					
ASG0260-20150428	P-9	4/28/15	303			205	-9.30		X						X					
ASG0262-20150429	P-7	4/29/15	017			029	-9.90		X						X					
ASG0258-20150427	P-11	4/27/15	2311			037	-.58		X						X					
ASG0257-20150427	P-12	4/27/15	143			352	-3.60		X						X					
ASG0261-20150428	P-8	4/28/15	2231			310	.84		X						X					

	Company:	Date:	Time:		Company:	Date:	Time:
Approved/Relinquished by: Sierra Mott	Landau	4/29/15	1338	Received by: Jon Unsworth	H&P	5/4/15	1050
Approved/Relinquished by:				Received by:			
Approved/Relinquished by:				Received by:			

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 08/18/2014

4/29/2015

ATTACHMENT TO COC

Project Info:

Consultant: Landau Associates

Lab Client Project Manager: Jennifer Wynkoop

Project Name/#: Boeing Auburn Tier 1 025164.120.105

Project Location: Auburn and Algona, WA

Report E-Mails: → FOR FINAL REPORT ONLY

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Jennifer Wynkoop – jwynkoop@landauinc.com (JW 5/4/15)

Eric Weber – eweber@landauinc.com

Sarah Fees – sfees@landauinc.com ——— DRAFT DATA ONLY

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Anne Halvorsen – ahalvorsen@landauinc.com

Project Analyte List:

Method TO-15: Trichlorethene, cis-1,2-Dichloroethene and Vinyl Chloride

Method ASTM D1945: Helium

Comments:

Please include project number (025164.120.105) on invoice. Billing contact is Jennifer Wynkoop.

Mobile
Geochemistry Inc.

01 April 2015

Ms. Jennifer Wynkoop
Landau Associates - Tacoma
950 Pacific Ave., Ste 515
Tacoma, WA 98402

H&P Project: MC032415-11
Client Project: 025164.120.105 / Boeing Auburn Tier 1

Dear Ms. Jennifer Wynkoop:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 24-Mar-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG0247-20150317	E503128-01	Vapor	17-Mar-15	24-Mar-15
ASG0248-20150317	E503128-02	Vapor	17-Mar-15	24-Mar-15
ASG0249-20150317	E503128-03	Vapor	17-Mar-15	24-Mar-15
ASG0250-20150317	E503128-04	Vapor	17-Mar-15	24-Mar-15
ASG0244-20150316	E503128-05	Vapor	16-Mar-15	24-Mar-15
ASG0246-20150316	E503128-06	Vapor	16-Mar-15	24-Mar-15
ASG0245-20150316	E503128-07	Vapor	16-Mar-15	24-Mar-15
ASG0251-20150318	E503128-08	Vapor	18-Mar-15	24-Mar-15
ASG0253-20150318	E503128-09	Vapor	18-Mar-15	24-Mar-15
ASG0254-20150318	E503128-10	Vapor	18-Mar-15	24-Mar-15
ASG0252-20150318	E503128-11	Vapor	18-Mar-15	24-Mar-15

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DETECTIONS SUMMARY

Sample ID: **ASG0247-20150317** Laboratory ID: **E503128-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0248-20150317** Laboratory ID: **E503128-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0249-20150317** Laboratory ID: **E503128-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0250-20150317** Laboratory ID: **E503128-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0244-20150316** Laboratory ID: **E503128-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0246-20150316** Laboratory ID: **E503128-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**0.29**	0.10	%	ASTM D1945M	

Sample ID: **ASG0245-20150316** Laboratory ID: **E503128-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0251-20150318** Laboratory ID: **E503128-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**24.2**	0.10	%	ASTM D1945M	

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Sample ID: **ASG0253-20150318** Laboratory ID: **E503128-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**0.77**	0.10	%	ASTM D1945M	

Sample ID: **ASG0254-20150318** Laboratory ID: **E503128-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**11**	4.0	ug/m3	EPA TO-15	

Sample ID: **ASG0252-20150318** Laboratory ID: **E503128-11**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

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Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0247-20150317 (E503128-01) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0248-20150317 (E503128-02) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0249-20150317 (E503128-03) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0250-20150317 (E503128-04) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0244-20150316 (E503128-05) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0246-20150316 (E503128-06) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	**0.29**	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0245-20150316 (E503128-07) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0251-20150318 (E503128-08) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	**24.2**	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0253-20150318 (E503128-09) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	**0.77**	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	

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Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0254-20150318 (E503128-10) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0252-20150318 (E503128-11) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0247-20150317 (E503128-01) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0248-20150317 (E503128-02) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0249-20150317 (E503128-03) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*94.6 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*107 %*	*78-125*		"	"	"	"	
ASG0250-20150317 (E503128-04) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53112	31-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*110 %*	*78-125*		"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0244-20150316 (E503128-05) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53112	31-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0246-20150316 (E503128-06) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*110 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*108 %*	*78-125*		"	"	"	"	
ASG0245-20150316 (E503128-07) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0251-20150318 (E503128-08) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.9 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*78-125*		"	"	"	"	

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Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0253-20150318 (E503128-09) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.7 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*97.9 %*		*78-125*	"	"	"	"	
ASG0254-20150318 (E503128-10) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	**11**	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*78-125*	"	"	"	"	
ASG0252-20150318 (E503128-11) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	2.6	ug/m3	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*78-125*	"	"	"	"	

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Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC53012 - GC										
Blank (EC53012-BLK1)				Prepared & Analyzed: 27-Mar-15						
Helium (LCC)	ND	0.10	%							

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Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC53014 - TO-15										
Blank (EC53014-BLK1)				Prepared & Analyzed: 30-Mar-15						
Vinyl chloride	ND	2.6	ug/m3							
cis-1,2-Dichloroethene	ND	4.0	"							
Trichloroethene	ND	5.5	"							
Surrogate: 1,2-Dichloroethane-d4	*236*		*"*	*214*		*110*	*76-134*			
Surrogate: Toluene-d8	*223*		*"*	*207*		*108*	*78-125*			
LCS (EC53014-BS1)				Prepared & Analyzed: 30-Mar-15						
Vinyl chloride	4.5	2.6	ug/m3	5.20		86.6	70-130			
cis-1,2-Dichloroethene	7.5	4.0	"	8.00		94.2	70-130			
Trichloroethene	9.4	5.5	"	11.0		85.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	*243*		*"*	*214*		*114*	*76-134*			
Surrogate: Toluene-d8	*220*		*"*	*207*		*106*	*78-125*			
LCS Dup (EC53014-BSD1)				Prepared & Analyzed: 30-Mar-15						
Vinyl chloride	4.5	2.6	ug/m3	5.20		86.8	70-130	0.230	25	
cis-1,2-Dichloroethene	7.9	4.0	"	8.00		98.6	70-130	4.54	25	
Trichloroethene	9.3	5.5	"	11.0		84.5	70-130	1.63	25	
Surrogate: 1,2-Dichloroethane-d4	*239*		*"*	*214*		*111*	*76-134*			
Surrogate: Toluene-d8	*219*		*"*	*207*		*106*	*78-125*			
Batch EC53112 - TO-15										
Blank (EC53112-BLK1)				Prepared & Analyzed: 31-Mar-15						
Vinyl chloride	ND	2.6	ug/m3							
cis-1,2-Dichloroethene	ND	4.0	"							
Trichloroethene	ND	5.5	"							
Surrogate: 1,2-Dichloroethane-d4	*220*		*"*	*214*		*103*	*76-134*			
Surrogate: Toluene-d8	*213*		*"*	*207*		*103*	*78-125*			

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Volatile Organic Compounds by EPA TO-15 - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC53112 - TO-15										
LCS (EC53112-BS1)				Prepared & Analyzed: 31-Mar-15						
Vinyl chloride	23	2.6	ug/m3	26.0		86.7	70-130			
cis-1,2-Dichloroethene	36	4.0	"	40.0		89.7	70-130			
Trichloroethene	50	5.5	"	54.8		91.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	*219*		*"*	*214*		*102*	*76-134*			
Surrogate: Toluene-d8	*213*		*"*	*207*		*103*	*78-125*			
LCS Dup (EC53112-BSD1)				Prepared & Analyzed: 31-Mar-15						
Vinyl chloride	24	2.6	ug/m3	26.0		93.5	70-130	7.50	25	
cis-1,2-Dichloroethene	41	4.0	"	40.0		102	70-130	12.5	25	
Trichloroethene	49	5.5	"	54.8		88.8	70-130	2.76	25	
Surrogate: 1,2-Dichloroethane-d4	*243*		*"*	*214*		*113*	*76-134*			
Surrogate: Toluene-d8	*218*		*"*	*207*		*106*	*78-125*			

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Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

Mobile Geochemistry, Inc.

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& Field Office - Signal Hill, CA
W handpmg.com E info@handpmg.com
P 760.804.9678 F 760.804.9159

VAPOR / AIR Chain of Custody

DATE: 3/19/15
Page 1 of ~~3~~ 2 yse 4/1/15

Lab Client and Project Information

Lab Client/Consultant: Landau Associates
Lab Client Project Manager: Jennifer Wynkoop
Lab Client Address: 950 Pacific Ave, Ste. 515
Lab Client City, State, Zip: Tacoma, WA 98402
Phone Number: 253-926-2493

Project Name / #: Boeing Auburn Tier 1 025164.120.185
Project Location: Auburn and Algona, WA
Report E-Mail(s): Jim Bet, Jen Wynkoop, Eric Weber, Sarah Fees, Terry McGourty, Anne Halvorsen (see attachment for email addresses)

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☒ Excel EDD ☐ Other EDD:_____
☐ CA Geotracker Global ID:_____

Turnaround Time

☒ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☐ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): SMM/RBM/SEF
Signature: Sierra Mott
Date: 3/19/15

Sample Receipt (Lab Use Only)

Date Rec'd: 3/24/15 Control #: 150184.01
H&P Project # MC032415-11
Lab Work Order # E503128
Sample Intact: ☒ Yes ☐ No ☐ See Notes Below
Receipt Gauge ID: 11167 Temp: 20°C
Outside Lab:
Receipt Notes/Tracking #: 1Z93TT61 9047235862
KBFor
Lab PM Initials: GN

Additional Instructions to Laboratory:

☒ Check if Project Analyte List is Attached

** Preferred VOC units (please choose one):*

☐ µg/L ☒ µg/m³ ☒ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☒ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☐ DFA ☐ IPA ☒ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
AS60247-20150317	P-3	03/17/15	0846	SV	400mL Sum	053	.57		X						X					
AS60248-20150317	P-5	03/17/15	1034			086	.53		X						X					
AS60249-20150317	P-15	03/17/15	1434			107	.26		X						X					
AS60250-20150317	P-20	03/17/15	1629			109	.49		X						X					
AS60244-20150316	P-1	03/16/15	1100			258	.17		X						X					
AS60246-20150316	P-4	03/16/15	1448			268	-.09		X						X					
AS60245-20150316	P-2	03/16/15	1248			062	-.06		X						X					
AS60251-20150318	P-19	03/18/15	0924			343	.94		X						X					
AS60253-20150318	P-16	03/18/15	1438			019	.06		X						X					
AS60254-20150318	P-18	03/18/15	1641			102	-2.10		X						X					

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Sierra Mott	Landau	3/19/15	1100	Jori Unsworth	H&P	3/24/15	1035
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 12/31/2013

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VAPOR / AIR Chain of Custody

DATE: 3/19/15
Page 2 of 3

Lab Client and Project Information

Lab Client/Consultant: Landau Associates	Project Name / #: Boeing Auburn Tier 1 025164.120.105
Lab Client Project Manager: Jennifer Wyrkoop	Project Location: Auburn and Algona, WA
Lab Client Address: 950 Pacific Ave, Ste. 515	Report E-Mail(s): See Page 1 of COC and attachment
Lab Client City, State, Zip: Tacoma, WA 98402	
Phone Number: 253-926-2493	

Reporting Requirements

- [x] Standard Report ☐ Level III ☐ Level IV
- [x] Excel EDD ☐ Other EDD:_____
- ☐ CA Geotracker Global ID:_____

Turnaround Time

- [x] 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☐ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): SMM/RRM/SEF
Signature:
Date: 3/19/15

Sample Receipt (Lab Use Only)

Date Rec'd: 3/24/15	Control #: 150184.01
H&P Project # MC032415-11	
Lab Work Order # E503128	
Sample Intact: [x] Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID: 11167	Temp: 20°C
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6190 4723 5862	
Lab PM Initials: KB FOR SN	

Additional Instructions to Laboratory:

- [x] Check if Project Analyte List is Attached
- ** Preferred VOC units (please choose one):*
- ☐ µg/L [x] µg/m³ [x] ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV [x] TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☐ DFA ☐ IPA [x] He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
AS60252-20150318	P-17	03/18/15	1251	SV	400 mL Summa	4172	.20		X						X					

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Sean Mott	Landau	3/19/15	1100	Jon Ellsworth	H&P	3/24/15	1035
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

H&P Mobile Geochemistry, Inc.
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Field Office in Signal Hill, CA (Los Angeles)
Ph: 800-834-9888 www.handpmg.com

EPA Method TO-15
Soil Vapor Compounds

Compound	*CAS #*	*400mL RL Vapor (µg/m^3)*	*400mL RL Vapor (ppbv)*
Vinyl chloride	75-01-4	2.6	1.0
cis-1,2-Dichloroethene	156-59-2	4.0	1.0
Trichloroethene	79-01-6	5.5	1.0
Leak Check Compound			
Helium by ASTM D1945	7440-59-7	0.10%	

Mobile Geochemistry Inc.

01 April 2015

Ms. Jennifer Wynkoop
Landau Associates - Tacoma
950 Pacific Ave., Ste 515
Tacoma, WA 98402

H&P Project: MC032415-11
Client Project: 025164.120.105 / Boeing Auburn Tier 1

Dear Ms. Jennifer Wynkoop:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 24-Mar-15 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis Villarreal

Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP, the National Environmental Laboratory Accreditation Conference (NELAC) and the Department of Defense Accreditation Programs.

H&P Mobile
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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG0247-20150317	E503128-01	Vapor	17-Mar-15	24-Mar-15
ASG0248-20150317	E503128-02	Vapor	17-Mar-15	24-Mar-15
ASG0249-20150317	E503128-03	Vapor	17-Mar-15	24-Mar-15
ASG0250-20150317	E503128-04	Vapor	17-Mar-15	24-Mar-15
ASG0244-20150316	E503128-05	Vapor	16-Mar-15	24-Mar-15
ASG0246-20150316	E503128-06	Vapor	16-Mar-15	24-Mar-15
ASG0245-20150316	E503128-07	Vapor	16-Mar-15	24-Mar-15
ASG0251-20150318	E503128-08	Vapor	18-Mar-15	24-Mar-15
ASG0253-20150318	E503128-09	Vapor	18-Mar-15	24-Mar-15
ASG0254-20150318	E503128-10	Vapor	18-Mar-15	24-Mar-15
ASG0252-20150318	E503128-11	Vapor	18-Mar-15	24-Mar-15

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

DETECTIONS SUMMARY

Sample ID: **ASG0247-20150317** Laboratory ID: **E503128-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0248-20150317** Laboratory ID: **E503128-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0249-20150317** Laboratory ID: **E503128-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0250-20150317** Laboratory ID: **E503128-04**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0244-20150316** Laboratory ID: **E503128-05**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0246-20150316** Laboratory ID: **E503128-06**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**0.29**	0.10	%	ASTM D1945M	

Sample ID: **ASG0245-20150316** Laboratory ID: **E503128-07**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

Sample ID: **ASG0251-20150318** Laboratory ID: **E503128-08**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**24.2**	0.10	%	ASTM D1945M	

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950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Sample ID: **ASG0253-20150318** Laboratory ID: **E503128-09**

Analyte	Result	Reporting Limit	Units	Method	Notes
Helium (LCC)	**0.77**	0.10	%	ASTM D1945M	

Sample ID: **ASG0254-20150318** Laboratory ID: **E503128-10**

Analyte	Result	Reporting Limit	Units	Method	Notes
cis-1,2-Dichloroethene	**2.8**	1.0	ppbv	EPA TO-15	

Sample ID: **ASG0252-20150318** Laboratory ID: **E503128-11**

Analyte	Result	Reporting Limit	Units	Method	Notes
No Detections Reported					

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0247-20150317 (E503128-01) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0248-20150317 (E503128-02) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0249-20150317 (E503128-03) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0250-20150317 (E503128-04) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0244-20150316 (E503128-05) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0246-20150316 (E503128-06) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	**0.29**	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0245-20150316 (E503128-07) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0251-20150318 (E503128-08) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	**24.2**	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0253-20150318 (E503128-09) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	**0.77**	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0254-20150318 (E503128-10) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	
ASG0252-20150318 (E503128-11) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Helium (LCC)	ND	0.10	%	1	EC53012	27-Mar-15	27-Mar-15	ASTM D1945M	

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950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0247-20150317 (E503128-01) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0248-20150317 (E503128-02) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0249-20150317 (E503128-03) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*94.6 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*107 %*	*78-125*		"	"	"	"	
ASG0250-20150317 (E503128-04) Vapor	**Sampled: 17-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53112	31-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*110 %*	*78-125*		"	"	"	"	

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0244-20150316 (E503128-05) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53112	31-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0246-20150316 (E503128-06) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*110 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*108 %*	*78-125*		"	"	"	"	
ASG0245-20150316 (E503128-07) Vapor	**Sampled: 16-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*109 %*	*78-125*		"	"	"	"	
ASG0251-20150318 (E503128-08) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.9 %*	*76-134*		"	"	"	"	
Surrogate: Toluene-d8		*105 %*	*78-125*		"	"	"	"	

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
ASG0253-20150318 (E503128-09) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.7 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*97.9 %*		*78-125*	"	"	"	"	
ASG0254-20150318 (E503128-10) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	**2.8**	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*105 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*104 %*		*78-125*	"	"	"	"	
ASG0252-20150318 (E503128-11) Vapor	**Sampled: 18-Mar-15**	**Received: 24-Mar-15**							
Vinyl chloride	ND	1.0	ppbv	1	EC53014	30-Mar-15	31-Mar-15	EPA TO-15	
cis-1,2-Dichloroethene	ND	1.0	"	"	"	"	"	"	
Trichloroethene	ND	1.0	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*78-125*	"	"	"	"	

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC53012 - GC										
Blank (EC53012-BLK1)				Prepared & Analyzed: 27-Mar-15						
Helium (LCC)	ND	0.10	%							

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC53014 - TO-15										
Blank (EC53014-BLK1)				Prepared & Analyzed: 30-Mar-15						
Vinyl chloride	ND	1.0	ppbv							
cis-1,2-Dichloroethene	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*55.2*		*"*	*50.2*		*110*	*76-134*			
Surrogate: Toluene-d8	*53.6*		*"*	*49.8*		*108*	*78-125*			
LCS (EC53014-BS1)				Prepared & Analyzed: 30-Mar-15						
Vinyl chloride	1.7	1.0	ppbv	2.01		86.6	70-130			
cis-1,2-Dichloroethene	1.9	1.0	"	1.99		94.2	70-130			
Trichloroethene	1.7	1.0	"	2.01		85.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	*57.0*		*"*	*50.2*		*114*	*76-134*			
Surrogate: Toluene-d8	*53.0*		*"*	*49.8*		*106*	*78-125*			
LCS Dup (EC53014-BSD1)				Prepared & Analyzed: 30-Mar-15						
Vinyl chloride	1.7	1.0	ppbv	2.01		86.8	70-130	0.230	25	
cis-1,2-Dichloroethene	2.0	1.0	"	1.99		98.6	70-130	4.54	25	
Trichloroethene	1.7	1.0	"	2.01		84.5	70-130	1.63	25	
Surrogate: 1,2-Dichloroethane-d4	*55.9*		*"*	*50.2*		*111*	*76-134*			
Surrogate: Toluene-d8	*52.8*		*"*	*49.8*		*106*	*78-125*			
Batch EC53112 - TO-15										
Blank (EC53112-BLK1)				Prepared & Analyzed: 31-Mar-15						
Vinyl chloride	ND	1.0	ppbv							
cis-1,2-Dichloroethene	ND	1.0	"							
Trichloroethene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	*51.5*		*"*	*50.2*		*103*	*76-134*			
Surrogate: Toluene-d8	*51.2*		*"*	*49.8*		*103*	*78-125*			

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EC53112 - TO-15										
LCS (EC53112-BS1)				Prepared & Analyzed: 31-Mar-15						
Vinyl chloride	8.7	1.0	ppbv	10.0		86.7	70-130			
cis-1,2-Dichloroethene	8.9	1.0	"	9.94		89.7	70-130			
Trichloroethene	9.2	1.0	"	10.1		91.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	*51.2*		*"*	*50.2*		*102*	*76-134*			
Surrogate: Toluene-d8	*51.2*		*"*	*49.8*		*103*	*78-125*			
LCS Dup (EC53112-BSD1)				Prepared & Analyzed: 31-Mar-15						
Vinyl chloride	9.4	1.0	ppbv	10.0		93.5	70-130	7.50	25	
cis-1,2-Dichloroethene	10	1.0	"	9.94		102	70-130	12.5	25	
Trichloroethene	8.9	1.0	"	10.1		88.8	70-130	2.76	25	
Surrogate: 1,2-Dichloroethane-d4	*56.9*		*"*	*50.2*		*113*	*76-134*			
Surrogate: Toluene-d8	*52.6*		*"*	*49.8*		*106*	*78-125*			

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Landau Associates - Tacoma	Project: MC032415-11	
950 Pacific Ave., Ste 515	Project Number: 025164.120.105 / Boeing Auburn Tier 1	Reported:
Tacoma, WA 98402	Project Manager: Ms. Jennifer Wynkoop	01-Apr-15 14:07

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP and the ISO 17025 programs, certification number L11-175.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

Mobile Geochemistry, Inc.

2470 Impala Drive, Carlsbad, CA 92010
& Field Office - Signal Hill, CA
W handpmg.com E info@handpmg.com
P 760.804.9678 F 760.804.9159

VAPOR / AIR Chain of Custody

DATE: 3/19/15
Page 1 of ~~3~~ 2 yse 4/1/15

Lab Client and Project Information

Lab Client/Consultant: Landau Associates
Lab Client Project Manager: Jennifer Wynkoop
Lab Client Address: 950 Pacific Ave, Ste. 515
Lab Client City, State, Zip: Tacoma, WA 98402
Phone Number: 253-926-2493

Project Name / #: Boeing Auburn Tier 1 025164.120.185
Project Location: Auburn and Algona, WA
Report E-Mail(s): Jim Bet, Jen Wynkoop, Eric Weber, Sarah Fees, Terry McGourty, Anne Halvorsen (see attachment for email addresses)

Reporting Requirements

☒ Standard Report ☐ Level III ☐ Level IV
☒ Excel EDD ☐ Other EDD:_____
☐ CA Geotracker Global ID:_____

Turnaround Time

☒ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☐ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): SMM/RBM/SEF
Signature: Sierra Mott
Date: 3/19/15

Sample Receipt (Lab Use Only)

Date Rec'd: 3/24/15 Control #: 150184.01
H&P Project # MC032415-11
Lab Work Order # E503128
Sample Intact: ☒ Yes ☐ No ☐ See Notes Below
Receipt Gauge ID: 11167 Temp: 20°C
Outside Lab:
Receipt Notes/Tracking #: 1Z93TT61 9047235862
KBFor
Lab PM Initials: GN

Additional Instructions to Laboratory:

☒ Check if Project Analyte List is Attached

** Preferred VOC units (please choose one):*

☐ µg/L ☒ µg/m³ ☒ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV ☒ TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☐ DFA ☐ IPA ☒ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
AS60247-20150317	P-3	03/17/15	0846	SV	400mL Sum	053	.57		X						X					
AS60248-20150317	P-5	03/17/15	1034			086	.53		X						X					
AS60249-20150317	P-15	03/17/15	1434			107	.26		X						X					
AS60250-20150317	P-20	03/17/15	1629			109	.49		X						X					
AS60244-20150316	P-1	03/16/15	1100			258	.17		X						X					
AS60246-20150316	P-4	03/16/15	1448			268	-.09		X						X					
AS60245-20150316	P-2	03/16/15	1248			062	-.06		X						X					
AS60251-20150318	P-19	03/18/15	0924			343	.94		X						X					
AS60253-20150318	P-16	03/18/15	1438			019	.06		X						X					
AS60254-20150318	P-18	03/18/15	1641			102	-2.10		X						X					

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Sierra Mott	Landau	3/19/15	1100	Jori Unsworth	H&P	3/24/15	1035
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

Rev 12/31/2013

Mobile Geochemistry, Inc.
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VAPOR / AIR Chain of Custody

DATE: 3/19/15
Page 2 of 3

Lab Client and Project Information

Lab Client/Consultant: Landau Associates	Project Name / #: Boeing Auburn Tier 1 025164.120.105
Lab Client Project Manager: Jennifer Wyrkoop	Project Location: Auburn and Algona, WA
Lab Client Address: 950 Pacific Ave, Ste. 515	Report E-Mail(s): See Page 1 of COC and attachment
Lab Client City, State, Zip: Tacoma, WA 98402	
Phone Number: 253-926-2493	

Reporting Requirements

- [x] Standard Report ☐ Level III ☐ Level IV
- [x] Excel EDD ☐ Other EDD:_____
- ☐ CA Geotracker Global ID:_____

Turnaround Time

- [x] 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☐ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): SMM/RRM/SEF
Signature:
Date: 3/19/15

Sample Receipt (Lab Use Only)

Date Rec'd: 3/24/15	Control #: 150184.01
H&P Project # MC032415-11	
Lab Work Order # E503128	
Sample Intact: [x] Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID: 11167	Temp: 20°C
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6190 4723 5862	
Lab PM Initials: KB FOR SN	

Additional Instructions to Laboratory:

- [x] Check if Project Analyte List is Attached
- ** Preferred VOC units (please choose one):*
- ☐ µg/L [x] µg/m³ [x] ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa or Tedlar or Tube	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☐ TO-15	VOCs Short List / Project List ☐ 8260SV [x] TO-15	Oxygenates ☐ 8260SV ☐ TO-15	Naphthalene ☐ 8260SV ☐ TO-15 ☐ TO-17m	TPHv as Gas ☐ 8260SVm ☐ TO-15m	TPHv as Diesel (sorbent tube) ☐ TO-17m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☐ DFA ☐ IPA [x] He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☐ CO2 ☐ O2 ☐ N2			
AS60252-20150318	P-17	03/18/15	1251	SV	400 mL Summa	4172	.20		X						X					

Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Sean Mott	Landau	3/19/15	1100	Jon Ellsworth	H&P	3/24/15	1035
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

H&P Mobile Geochemistry, Inc.
2470 Impala Drive, Carlsbad, CA 92010
Field Office in Signal Hill, CA (Los Angeles)
Ph: 800-834-9888 www.handpmg.com

EPA Method TO-15
Soil Vapor Compounds

Compound	*CAS #*	*400mL RL Vapor (µg/m^3)*	*400mL RL Vapor (ppbv)*
Vinyl chloride	75-01-4	2.6	1.0
cis-1,2-Dichloroethene	156-59-2	4.0	1.0
Trichloroethene	79-01-6	5.5	1.0
Leak Check Compound			
Helium by ASTM D1945	7440-59-7	0.10%	

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

May 11, 2015

Project: Boeing Auburn/0025164.120.105

Submittal Date: 04/30/2015
Group Number: 1557551
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
ASB0251R-8-20150426 Water	7868473
ASB0255-10-20150426 Water	7868474
ASB0256-12-20150427 Water	7868475
ASB0257-15-20150427 Water	7868476
ASB9258-10-20150428 Water	7868477
ASB0258-10-20150428 Water	7868478
ASB0259-10-20150428 Water	7868479
ASB0260-8-20150428 Water	7868480
ASB0261-10-20150428 Water	7868481
ASB0262-10-20150429 Water	7868482
ASB0263-10-20150429 Water	7868483
Trip Blanks Water	7868484

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Landau Associates	Attn: Sarah Fees
ELECTRONIC COPY TO	Landau	Attn: Eric Weber
ELECTRONIC COPY TO	Landau Associates	Attn: Jennifer Wynkoop
ELECTRONIC COPY TO	The Boeing Company	Attn: Jim Bet
ELECTRONIC COPY TO	Landau Associates	Attn: Anne Halvorsen

Respectfully Submitted,

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing Auburn/0025164.120.105
LL Group #: 1557551

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: ASB0251R-8-20150426 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868473
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/26/2015 20:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

50426

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.7**		0.2	1
11996	**trans-1,2-Dichloroethene**	156-60-5	**0.3**		0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.6**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**0.72**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0251R-8-20150426 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868473
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/26/2015 20:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

50426

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 14:39	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 11:22	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 11:22	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 14:39	Kerri E Legerlotz	1

Sample Description: ASB0255-10-20150426 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868474
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/26/2015 22:52 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25510

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**28**		5.0	1
11996	**Benzene**	71-43-2	**0.3**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	**2-Butanone**	78-93-3	**6.8**		5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.4**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0255-10-20150426 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868474
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/26/2015 22:52 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25510

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 15:00	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 11:42	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 11:42	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 15:00	Kerri E Legerlotz	1

Sample Description: ASB0256-12-20150427 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868475
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/27/2015 00:53 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25612

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**15**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0256-12-20150427 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868475
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/27/2015 00:53 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25612

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 15:22	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 12:01	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 12:01	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 15:22	Kerri E Legerlotz	1

Sample Description: ASB0257-15-20150427 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868476
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/27/2015 02:52 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25-12

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**5.1**		5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0257-15-20150427 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868476
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/27/2015 02:52 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 14:17	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 12:21	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 12:21	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 14:17	Kerri E Legerlotz	1

Sample Description: ASB9258-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868477
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 00:21 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25810

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.5**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**2.5**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**2.7**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB9258-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868477
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 00:21 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25810

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 15:43	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 12:41	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 12:41	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 15:43	Kerri E Legerlotz	1

Sample Description: ASB0258-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868478
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 00:18 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

-2510

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**2.4**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**2.8**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0258-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868478
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 00:18 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

-2510

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 16:05	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 13:01	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 13:01	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 16:05	Kerri E Legerlotz	1

Sample Description: ASB0259-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868479
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 02:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25910

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**0.13**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0259-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868479
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 02:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

25910

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 12:31	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 13:21	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H151281AA	05/08/2015 12:31	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E151281AA	05/08/2015 13:21	Jason M Long	1

Sample Description: ASB0260-8-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868480
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 04:04 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

260-8

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0260-8-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868480
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 04:04 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

260-8

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 16:26	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 14:21	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 14:21	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 16:26	Kerri E Legerlotz	1

Sample Description: ASB0261-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868481
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 23:34 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

26110

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.4**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**0.024**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0261-10-20150428 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868481
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/28/2015 23:34 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

26110

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 16:48	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 14:41	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 14:41	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 16:48	Kerri E Legerlotz	1

Sample Description: ASB0262-10-20150429 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868482
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/29/2015 01:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

26210

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.4**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**0.43**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0262-10-20150429 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868482
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/29/2015 01:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

26210

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 17:09	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 15:02	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 15:02	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 17:09	Kerri E Legerlotz	1

Sample Description: ASB0263-10-20150429 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868483
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/29/2015 02:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

26310

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0263-10-20150429 Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868483
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/29/2015 02:25 by SMM

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

26310

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 17:30	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 15:22	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 15:22	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 17:30	Kerri E Legerlotz	1

Sample Description: Trip Blanks Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868484
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/01/2015

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

BOENT

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: Trip Blanks Water
Boeing Auburn/0025164.120.105

LL Sample # WW 7868484
LL Group # 1557551
Account # 13419

Project Name: Boeing Auburn/0025164.120.105

Collected: 04/01/2015

Submitted: 04/30/2015 09:20
Reported: 05/11/2015 19:41

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

BOENT

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H151281AA	05/08/2015 11:22	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E151281AA	05/08/2015 09:41	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	E151281AA	05/08/2015 09:41	Jason M Long	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	H151281AA	05/08/2015 11:22	Kerri E Legerlotz	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 1557551
Reported: 05/11/2015 19:41

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: E151281AA	Sample number(s): 7868473-7868484								
Vinyl chloride	0.020	U	0.020	ug/l	113		80-120		
Batch number: H151281AA	Sample number(s): 7868473-7868484								
Acetone	5.0	U	5.0	ug/l	89		66-132		
Benzene	0.2	U	0.2	ug/l	98		80-120		
Bromodichloromethane	0.5	U	0.5	ug/l	95		80-120		
Bromoform	0.5	U	0.5	ug/l	93		64-134		
Bromomethane	0.5	U	0.5	ug/l	99		62-126		
2-Butanone	5.0	U	5.0	ug/l	98		75-128		
Carbon Disulfide	0.5	U	0.5	ug/l	94		70-128		
Carbon Tetrachloride	0.2	U	0.2	ug/l	99		80-135		
Chlorobenzene	0.5	U	0.5	ug/l	98		80-120		
Chloroethane	0.5	U	0.5	ug/l	96		68-120		
Chloroform	0.2	U	0.2	ug/l	98		80-120		
Chloromethane	0.5	U	0.5	ug/l	88		55-125		
Dibromochloromethane	0.5	U	0.5	ug/l	96		80-126		
1,1-Dichloroethane	0.5	U	0.5	ug/l	96		80-120		
1,2-Dichloroethane	0.2	U	0.2	ug/l	93		80-125		
1,1-Dichloroethene	0.2	U	0.2	ug/l	97		80-120		
cis-1,2-Dichloroethene	0.2	U	0.2	ug/l	98		80-120		
trans-1,2-Dichloroethene	0.2	U	0.2	ug/l	100		80-120		
1,2-Dichloropropane	0.5	U	0.5	ug/l	98		80-120		
cis-1,3-Dichloropropene	0.2	U	0.2	ug/l	95		80-120		
trans-1,3-Dichloropropene	0.2	U	0.2	ug/l	98		77-126		
Ethylbenzene	0.5	U	0.5	ug/l	97		80-120		
2-Hexanone	5.0	U	5.0	ug/l	100		72-124		
4-Methyl-2-pentanone	5.0	U	5.0	ug/l	98		71-123		
Methylene Chloride	0.5	U	0.5	ug/l	98		80-120		
Styrene	0.5	U	0.5	ug/l	100		80-120		
1,1,2,2-Tetrachloroethane	0.2	U	0.2	ug/l	104		80-120		
Tetrachloroethene	0.2	U	0.2	ug/l	98		80-120		
Toluene	0.2	U	0.2	ug/l	99		80-120		
112Trichloro122Trifluoroethane	0.5	U	0.5	ug/l	98		75-120		
1,1,1-Trichloroethane	0.5	U	0.5	ug/l	98		80-120		
1,1,2-Trichloroethane	0.2	U	0.2	ug/l	101		80-120		
Trichloroethene	0.2	U	0.2	ug/l	100		80-120		
Trichlorofluoromethane	0.5	U	0.5	ug/l	103		64-141		
Vinyl Acetate	0.5	U	0.5	ug/l	96		18-200		
Vinyl Chloride	0.2	U	0.2	ug/l	97		59-124		
m+p-Xylene	0.5	U	0.5	ug/l	98		80-120		
o-Xylene	0.5	U	0.5	ug/l	96		80-120		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company Group Number: 1557551
Reported: 05/11/2015 19:41

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: E151281AA	Sample number(s): 7868473-7868484 UNSPK: 7868479								
Vinyl chloride	121	123	56-146	2	30				
Batch number: H151281AA	Sample number(s): 7868473-7868484 UNSPK: 7868479								
Acetone	99	101	57-163	2	30				
Benzene	99	99	87-126	0	30				
Bromodichloromethane	95	97	82-133	1	30				
Bromoform	91	95	60-138	5	30				
Bromomethane	99	102	66-130	2	30				
2-Butanone	106	112	56-160	5	30				
Carbon Disulfide	98	98	84-141	0	30				
Carbon Tetrachloride	102	101	81-148	1	30				
Chlorobenzene	99	102	78-133	3	30				
Chloroethane	104	105	70-139	0	30				
Chloroform	97	99	86-136	2	30				
Chloromethane	93	94	49-135	1	30				
Dibromochloromethane	97	101	79-125	4	30				
1,1-Dichloroethane	97	98	81-126	1	30				
1,2-Dichloroethane	93	97	82-135	4	30				
1,1-Dichloroethene	100	101	86-132	1	30				
cis-1,2-Dichloroethene	99	101	82-129	1	30				
trans-1,2-Dichloroethene	101	103	88-127	2	30				
1,2-Dichloropropane	98	99	91-126	0	30				
cis-1,3-Dichloropropene	95	98	74-132	3	30				
trans-1,3-Dichloropropene	96	99	71-128	4	30				
Ethylbenzene	99	101	80-140	3	30				
2-Hexanone	108	117	51-149	8	30				
4-Methyl-2-pentanone	106	115	69-149	8	30				
Methylene Chloride	98	98	77-135	0	30				
Styrene	100	104	71-138	4	30				
1,1,2,2-Tetrachloroethane	102	106	75-131	4	30				
Tetrachloroethene	98	100	75-129	2	30				
Toluene	102	103	83-127	1	30				
112Trichloro122Trifluoroethane	101	102	84-136	1	30				
1,1,1-Trichloroethane	100	99	85-140	0	30				
1,1,2-Trichloroethane	100	105	85-129	5	30				
Trichloroethene	102	101	85-131	1	30				
Trichlorofluoromethane	111	113	73-139	2	30				
Vinyl Acetate	96	93	27-162	4	30				
Vinyl Chloride	103	105	62-135	2	30				
m+p-Xylene	100	103	81-137	3	30				
o-Xylene	98	101	81-137	3	30				

Surrogate Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company Group Number: 1557551
Reported: 05/11/2015 19:41

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C SIM VC Only
Batch number: E151281AA

	Toluene-d8	1,4-Difluorobenzene
7868473	103	96
7868474	103	96
7868475	103	96
7868476	103	95
7868477	103	96
7868478	103	96
7868479	102	95
7868480	103	96
7868481	103	97
7868482	103	96
7868483	103	97
7868484	103	97
Blank	103	97
LCS	104	97
MS	103	95
MSD	103	96
Limits:	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: H151281AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7868473	100	102	99	96
7868474	100	104	99	99
7868475	99	103	98	97
7868476	101	107	99	97
7868477	101	105	99	96
7868478	99	104	99	96
7868479	101	105	99	95
7868480	101	106	98	97
7868481	101	105	99	97
7868482	100	103	99	97
7868483	101	105	99	97
7868484	99	104	99	95
Blank	100	105	99	95
LCS	98	99	101	99
MS	99	102	100	99
MSD	99	103	100	100
Limits:	77-114	74-113	77-110	78-110

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

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Acct. # 13419 For Lancaster Laboratories use only Group # 155551 Sample # 78C5473-484

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Auburn, WA
Site Project: Boeing Auburn
Site Program/#: 0025164.120.105
Boeing PM: Jim Bet
Consultant Contact: Jennifer Wynkoop
Report To: Anne Halvorsen etc. (see CMS list)
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: SMM, NTD # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Boeing 38 VOCs	VC and PCE	MSIMS-D	(5) Remarks/Comments
ASB0251-8-20150426	4/26/15	2025	H2O	5	X	X		
ASB0255-10-20150426	4/26/15	2252		4	X	X		
ASB0256-12-20150427	4/27/15	053		4	X	X		
ASB0257-15-20150427	4/27/15	252		5	X	X		
ASB9258-10-20150428	4/28/15	021		5	X	X		
ASB0258-10-20150428	4/28/15	018		5	X	X		
ASB0259-10-20150428	4/28/15	225		15	X	X	X	
ASB0260-9-20150428	4/28/15	404		5	X	X		
ASB0261-10-20150428	4/28/15	2334		4	X	X		
ASB0262-10-20150429	4/29/15	125		5	X	X		
ASB0263-10-20150429	4/29/15	255		5	X	X		
Trip Blanks	4/1/15	—		4	X	X		

(6) Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

	Date/Time		Date/Time
Relinquished by: Steve Mott	4/29/15 1258	Received by:	(7)
Relinquished by:		Received by:	
Relinquished by:		Received by:	4/30/15 920

Relinquished by commercial carrier (circle): (UPS) FedEx Other: _____
Temperature upon Receipt: 1.0 °C
Custody Seals Intact?: (Yes) No

Lancaster Laboratories Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management
7063.02

Rachel Kreamer A# 13419 Gr# 1557551

From: Kay Hower
Sent: Thursday, April 30, 2015 10:44 PM
To: Rachel Kreamer
Subject: FW: Acknowledgement(1557551, Boeing Auburn/0025164.120.105, 04/30/2015 09:20:00)
Attachments: Scanned from a Xerox Multifunction Device.pdf

Rachel, will you please make these changes and attach the revised COC? Thanks!

From: Sarah Fees [mailto:SFees@landauinc.com]
Sent: Thursday, April 30, 2015 6:10 PM
To: Kay Hower
Cc: Sierra Mott; Jennifer Wynkoop
Subject: RE: Acknowledgement(1557551, Boeing Auburn/0025164.120.105, 04/30/2015 09:20:00)

Hello Kay,

We would like these samples analyzed by SIM for VC only. Also, the sample ID for the first sample should be ASB0251R-8-20150426. Updated COC is attached. Please let me know if you need any additional information to make these changes.

Thanks,

Sarah Fees ♦ Project Hydrogeologist

Landau Associates, Inc.
950 Pacific Avenue, Suite 515, Tacoma, WA 98402
direct (253) 284-4887 ♦ main (253) 926-2493 ♦ fax (253) 926-2531
sfees@landauinc.com ♦ www.landauinc.com

From: Kay Hower [mailto:KayHower@eurofinsus.com]
Sent: Thursday, April 30, 2015 1:50 PM
To: Jennifer Wynkoop; Sarah Fees
Subject: Acknowledgement(1557551, Boeing Auburn/0025164.120.105, 04/30/2015 09:20:00)

Boeing Chain of Custody

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Acct. # 13419 Group # 1557551 Sample # 785473-484

For Lancaster Laboratories use only

Please print. Instructions on reverse side correspond.

(1) Client Information

Site Location: Auburn, WA
Site Project: Boeing Auburn
Site Program/#: 0025164.120.105
Boeing PM: Jim Bet
Consultant Contact: Jennifer Wynkoop
Report To: Anne Halvorsen etc. (see CMS list)
Invoice To: [X] Boeing EHS [ ] Other (specify):
Sampler: SMM, NTO # of Coolers: 1

(2) Sample Identification	Collected Date	Collected Time	(3) Matrix	No. of Containers	(4) Analyses Requested: Boeing 38 VOCs	VOC SIM - REE	MSMS20	(5) Remarks/Comments
ASB0251R8-20150426	4/26/15	2025	H2O	5	X	X		Still analysis for SEE 4/30/15 RE only
ASB0255-10-20150426	4/26/15	2252		4	X	X		
ASB0256-12-20150427	4/27/15	053		4	X	X		
ASB0257-15-20150427	4/27/15	252		5	X	X		
ASB9258-10-20150428	4/28/15	021		5	X	X		
ASB0258-10-20150428	4/28/15	018		5	X	X		
ASB0259-10-20150428	4/28/15	225		15	X	X	X	
ASB0260-9-20150428	4/28/15	404		5	X	X		
ASB0261-10-20150428	4/28/15	2334		4	X	X		
ASB0262-10-20150429	4/29/15	125		5	X	X		
ASB0263-10-20150429	4/29/15	255		5	X	X		
Trip Blanks	4/1/15	—		4	X	X		

(6) Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time (7)
[signature]	4/29/15 1258		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time 4/30/15 920

Relinquished by commercial carrier (circle): (UPS) FedEx Other: _____
Temperature upon Receipt: 10 °C
Custody Seals Intact?: (Yes) No

Lancaster Laboratories Inc., 2425 New Holland Pike, Lancaster, PA 17601 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.
Issued by Dept. 40 Management
7063.02

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Sample Administration Receipt Documentation Log

Doc Log ID: 67698

Group Number(s):

Client: Boeing

1557551

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	04/30/2015 9:20
Number of Packages:	1	Number of Projects:	1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 10:42 on 04/30/2015

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	1.0	DT	Wet	Y	Bagged	N

(8) KMH 4/30/15

Sample AS89258-10-20150428-rcvd 4 vials, not 5

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Gr. 1557551

VINCE YU
EUROFINS LANCASTER LABORATORIE
11720 NORTH CREEK PARKWAY N
BOTHELL WA 98011-8244

40 LBS

RS DWT: 25,14,14

SHIP TO:
SAMPLE ADMINISTRATION
(717) 656-2300
EUROFINS LANCASTER LABORATORIES.
2425 NEW HOLLAND PIKE
LANCASTER PA 17601-5946

PA 175 9-37

UPS NEXT DAY AIR

TRACKING #: 1Z RV3 069 Y0 4432 0629

1 S

BILLING: P/P
DESC: SAMPLING
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REF 1:DEPT 40

WS 16.0.31 45.0A 10.2013

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

March 30, 2015

Project: Boeing Auburn

Submittal Date: 03/20/2015
Group Number: 1546966
State of Sample Origin: WA

Client Sample Description	Lancaster Labs (LL) #
Trip Blank Water	7814337
ASB0244-9-20150316 Water	7814338
ASB9245-10-20150316 Water	7814339
ASB0245-10-20150316 Water	7814340
ASB0246-10-20150316 Water	7814341
ASB0254-8-20150318 Water	7814342
ASB0250-7-20150317 Water	7814343
ASB0249-7-20150317 Water	7814344
ASB0248-7-20150317 Water	7814345
ASB0247-7-20150317 Water	7814346
ASB0253-8-20150318 Water	7814347
ASB0252-8-20150318 Water	7814348
ASB0251-7-20150318 Water	7814349

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

ELECTRONIC COPY TO	Landau Associates	Attn: Anne Halvorsen
ELECTRONIC COPY TO	The Boeing Company	Attn: Jim Bet
ELECTRONIC COPY TO	Landau Associates	Attn: Jennifer Wynkoop
ELECTRONIC COPY TO	Landau	Attn: Eric Weber
ELECTRONIC	Landau Associates	Attn: Sarah Fees

COPY TO

Respectfully Submitted,

Kay Hower
Manager

(510) 672-3979

Project Name: Boeing Auburn
LL Group #: 1546966

General Comments:

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are included in this data set

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:

No additional comments are necessary.

Sample Description: Trip Blank Water
Boeing Auburn

LL Sample # WW 7814337
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/04/2015

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

AS-TB

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: Trip Blank Water
Boeing Auburn

LL Sample # WW 7814337
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/04/2015

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

AS-TB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 12:01	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/24/2015 23:02	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 12:01	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/24/2015 23:02	Sara E Johnson	1

Sample Description: ASB0244-9-20150316 Water
Boeing Auburn

LL Sample # WW 7814338
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 11:53 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

244-9

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.2**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0244-9-20150316 Water
Boeing Auburn

LL Sample # WW 7814338
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 11:53 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

244-9

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 14:29	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 00:22	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 14:29	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 00:22	Sara E Johnson	1

Sample Description: ASB9245-10-20150316 Water
Boeing Auburn

LL Sample # WW 7814339
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 13:45 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

92451

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.2**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB9245-10-20150316 Water
Boeing Auburn

LL Sample # WW 7814339
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 13:45 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

92451

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 14:50	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 00:43	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 14:50	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 00:43	Sara E Johnson	1

Sample Description: ASB0245-10-20150316 Water
Boeing Auburn

LL Sample # WW 7814340
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 13:41 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

24510

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.2**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0245-10-20150316 Water
Boeing Auburn

LL Sample # WW 7814340
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 13:41 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

24510

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 15:11	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 01:03	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 15:11	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 01:03	Sara E Johnson	1

Sample Description: ASB0246-10-20150316 Water
Boeing Auburn

LL Sample # WW 7814341
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 15:47 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

24610

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0246-10-20150316 Water
Boeing Auburn

LL Sample # WW 7814341
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/16/2015 15:47 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

24610

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 15:33	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 01:23	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 15:33	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 01:23	Sara E Johnson	1

Sample Description: ASB0254-8-20150318 Water
Boeing Auburn

LL Sample # WW 7814342
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 16:39 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

254-8

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0254-8-20150318 Water
Boeing Auburn

LL Sample # WW 7814342
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 16:39 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

254-8

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 15:54	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 01:43	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 15:54	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 01:43	Sara E Johnson	1

Sample Description: ASB0250-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814343
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 17:21 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

250-7

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.2**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**0.22**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0250-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814343
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 17:21 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

250-7

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 16:15	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 02:04	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 16:15	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 02:04	Sara E Johnson	1

Sample Description: ASB0249-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814344
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 15:31 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

249-7

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0249-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814344
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 15:31 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

249-7

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 16:37	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 02:24	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 16:37	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 02:24	Sara E Johnson	1

Sample Description: ASB0248-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814345
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 11:35 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

248-7

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		ug/l		ug/l	
11996	**Acetone**	67-64-1	**8.7**		5.0	1
11996	**Benzene**	71-43-2	**0.3**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.5**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		ug/l		ug/l	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0248-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814345
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 11:35 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

248-7

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 16:58	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 02:44	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 16:58	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 02:44	Sara E Johnson	1

Sample Description: ASB0247-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814346
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 09:35 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

247-7

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0247-7-20150317 Water
Boeing Auburn

LL Sample # WW 7814346
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/17/2015 09:35 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

247-7

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 17:19	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 03:04	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 17:19	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 03:04	Sara E Johnson	1

Sample Description: ASB0253-8-20150318 Water
Boeing Auburn

LL Sample # WW 7814347
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 15:41 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

253-8

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	**Acetone**	67-64-1	**10**		5.0	1
11996	**Benzene**	71-43-2	**0.3**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	cis-1,2-Dichloroethene	156-59-2	0.2	U	0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.4**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0253-8-20150318 Water
Boeing Auburn

LL Sample # WW 7814347
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 15:41 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

253-8

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 17:40	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 03:24	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 17:40	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 03:24	Sara E Johnson	1

Sample Description: ASB0252-8-20150318 Water
Boeing Auburn

LL Sample # WW 7814348
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 13:51 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

252-8

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	**Benzene**	71-43-2	**0.2**		0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**0.2**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	**Toluene**	108-88-3	**0.3**		0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	Vinyl Chloride	75-01-4	0.2	U	0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	Vinyl chloride	75-01-4	0.020	U	0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0252-8-20150318 Water
Boeing Auburn

LL Sample # WW 7814348
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 13:51 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

252-8

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 18:01	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/25/2015 03:44	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 18:01	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/25/2015 03:44	Sara E Johnson	1

Sample Description: ASB0251-7-20150318 Water
Boeing Auburn

LL Sample # WW 7814349
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 10:15 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

251-7

CAT No.	Analysis Name	CAS Number	Result		Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**		**ug/l**	
11996	Acetone	67-64-1	5.0	U	5.0	1
11996	Benzene	71-43-2	0.2	U	0.2	1
11996	Bromodichloromethane	75-27-4	0.5	U	0.5	1
11996	Bromoform	75-25-2	0.5	U	0.5	1
11996	Bromomethane	74-83-9	0.5	U	0.5	1
11996	2-Butanone	78-93-3	5.0	U	5.0	1
11996	Carbon Disulfide	75-15-0	0.5	U	0.5	1
11996	Carbon Tetrachloride	56-23-5	0.2	U	0.2	1
11996	Chlorobenzene	108-90-7	0.5	U	0.5	1
11996	Chloroethane	75-00-3	0.5	U	0.5	1
11996	Chloroform	67-66-3	0.2	U	0.2	1
11996	Chloromethane	74-87-3	0.5	U	0.5	1
11996	Dibromochloromethane	124-48-1	0.5	U	0.5	1
11996	1,1-Dichloroethane	75-34-3	0.5	U	0.5	1
11996	1,2-Dichloroethane	107-06-2	0.2	U	0.2	1
11996	1,1-Dichloroethene	75-35-4	0.2	U	0.2	1
11996	**cis-1,2-Dichloroethene**	156-59-2	**1.4**		0.2	1
11996	trans-1,2-Dichloroethene	156-60-5	0.2	U	0.2	1
11996	1,2-Dichloropropane	78-87-5	0.5	U	0.5	1
11996	cis-1,3-Dichloropropene	10061-01-5	0.2	U	0.2	1
11996	trans-1,3-Dichloropropene	10061-02-6	0.2	U	0.2	1
11996	Ethylbenzene	100-41-4	0.5	U	0.5	1
11996	2-Hexanone	591-78-6	5.0	U	5.0	1
11996	4-Methyl-2-pentanone	108-10-1	5.0	U	5.0	1
11996	Methylene Chloride	75-09-2	0.5	U	0.5	1
11996	Styrene	100-42-5	0.5	U	0.5	1
11996	1,1,2,2-Tetrachloroethane	79-34-5	0.2	U	0.2	1
11996	Tetrachloroethene	127-18-4	0.2	U	0.2	1
11996	Toluene	108-88-3	0.2	U	0.2	1
11996	112Trichloro122Trifluoroethane	76-13-1	0.5	U	0.5	1
11996	1,1,1-Trichloroethane	71-55-6	0.5	U	0.5	1
11996	1,1,2-Trichloroethane	79-00-5	0.2	U	0.2	1
11996	Trichloroethene	79-01-6	0.2	U	0.2	1
11996	Trichlorofluoromethane	75-69-4	0.5	U	0.5	1
11996	Vinyl Acetate	108-05-4	0.5	U	0.5	1
11996	**Vinyl Chloride**	75-01-4	**0.4**		0.2	1
11996	m+p-Xylene	179601-23-1	0.5	U	0.5	1
11996	o-Xylene	95-47-6	0.5	U	0.5	1
GC/MS Volatiles	**SW-846 8260C SIM**		**ug/l**		**ug/l**	
12030	**Vinyl chloride**	75-01-4	**0.32**		0.020	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: ASB0251-7-20150318 Water
Boeing Auburn

LL Sample # WW 7814349
LL Group # 1546966
Account # 13419

Project Name: Boeing Auburn

Collected: 03/18/2015 10:15 by SMM

Submitted: 03/20/2015 09:30
Reported: 03/30/2015 08:45

The Boeing Company
PO Box 3707 MC 9U4-26
Seattle WA 98124

251-7

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11996	8260C Boeing 38	SW-846 8260C	1	H150831AA	03/24/2015 12:22	Kerri E Legerlotz	1
12030	8260C SIM VC Only	SW-846 8260C SIM	1	E150835AA	03/24/2015 23:22	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	H150831AA	03/24/2015 12:22	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	E150835AA	03/24/2015 23:22	Sara E Johnson	1

Quality Control Summary

Client Name: The Boeing Company Group Number: 1546966
Reported: 03/30/2015 08:45

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result		Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: E150835AA	Sample number(s): 7814337-7814349								
Vinyl chloride	0.020	U	0.020	ug/l	93		80-120		
Batch number: H150831AA	Sample number(s): 7814337-7814349								
Acetone	5.0	U	5.0	ug/l	93		66-132		
Benzene	0.2	U	0.2	ug/l	100		80-120		
Bromodichloromethane	0.5	U	0.5	ug/l	104		80-120		
Bromoform	0.5	U	0.5	ug/l	101		64-134		
Bromomethane	0.5	U	0.5	ug/l	98		62-126		
2-Butanone	5.0	U	5.0	ug/l	98		75-128		
Carbon Disulfide	0.5	U	0.5	ug/l	92		70-128		
Carbon Tetrachloride	0.2	U	0.2	ug/l	104		80-135		
Chlorobenzene	0.5	U	0.5	ug/l	98		80-120		
Chloroethane	0.5	U	0.5	ug/l	98		68-120		
Chloroform	0.2	U	0.2	ug/l	105		80-120		
Chloromethane	0.5	U	0.5	ug/l	96		55-125		
Dibromochloromethane	0.5	U	0.5	ug/l	103		80-126		
1,1-Dichloroethane	0.5	U	0.5	ug/l	100		80-120		
1,2-Dichloroethane	0.2	U	0.2	ug/l	106		80-125		
1,1-Dichloroethene	0.2	U	0.2	ug/l	97		80-120		
cis-1,2-Dichloroethene	0.2	U	0.2	ug/l	102		80-120		
trans-1,2-Dichloroethene	0.2	U	0.2	ug/l	102		80-120		
1,2-Dichloropropane	0.5	U	0.5	ug/l	104		80-120		
cis-1,3-Dichloropropene	0.2	U	0.2	ug/l	106		80-120		
trans-1,3-Dichloropropene	0.2	U	0.2	ug/l	107		77-126		
Ethylbenzene	0.5	U	0.5	ug/l	99		80-120		
2-Hexanone	5.0	U	5.0	ug/l	100		72-124		
4-Methyl-2-pentanone	5.0	U	5.0	ug/l	99		71-123		
Methylene Chloride	0.5	U	0.5	ug/l	100		80-120		
Styrene	0.5	U	0.5	ug/l	101		80-120		
1,1,2,2-Tetrachloroethane	0.2	U	0.2	ug/l	105		80-120		
Tetrachloroethene	0.2	U	0.2	ug/l	94		80-120		
Toluene	0.2	U	0.2	ug/l	99		80-120		
112Trichloro122Trifluoroethane	0.5	U	0.5	ug/l	90		75-120		
1,1,1-Trichloroethane	0.5	U	0.5	ug/l	102		80-120		
1,1,2-Trichloroethane	0.2	U	0.2	ug/l	103		80-120		
Trichloroethene	0.2	U	0.2	ug/l	103		80-120		
Trichlorofluoromethane	0.5	U	0.5	ug/l	99		64-141		
Vinyl Acetate	0.5	U	0.5	ug/l	96		18-200		
Vinyl Chloride	0.2	U	0.2	ug/l	99		59-124		
m+p-Xylene	0.5	U	0.5	ug/l	99		80-120		
o-Xylene	0.5	U	0.5	ug/l	98		80-120		

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company Group Number: 1546966
Reported: 03/30/2015 08:45

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: E150835AA	Sample number(s): 7814337-7814349 UNSPK: 7814349								
Vinyl chloride	94	98	56-146	4	30				
Batch number: H150831AA	Sample number(s): 7814337-7814349 UNSPK: 7814349								
Acetone	93	99	57-163	6	30				
Benzene	96	99	87-126	4	30				
Bromodichloromethane	100	108	82-133	7	30				
Bromoform	97	108	60-138	11	30				
Bromomethane	92	96	66-130	5	30				
2-Butanone	106	113	56-160	7	30				
Carbon Disulfide	89	90	84-141	1	30				
Carbon Tetrachloride	105	106	81-148	2	30				
Chlorobenzene	98	107	78-133	9	30				
Chloroethane	94	100	70-139	6	30				
Chloroform	99	105	86-136	6	30				
Chloromethane	91	95	49-135	5	30				
Dibromochloromethane	101	111	79-125	9	30				
1,1-Dichloroethane	98	101	81-126	3	30				
1,2-Dichloroethane	99	104	82-135	5	30				
1,1-Dichloroethene	94	98	86-132	3	30				
cis-1,2-Dichloroethene	97	101	82-129	3	30				
trans-1,2-Dichloroethene	99	102	88-127	3	30				
1,2-Dichloropropane	99	106	91-126	6	30				
cis-1,3-Dichloropropene	101	109	74-132	8	30				
trans-1,3-Dichloropropene	104	114	71-128	9	30				
Ethylbenzene	100	108	80-140	8	30				
2-Hexanone	118	132	51-149	11	30				
4-Methyl-2-pentanone	112	126	69-149	11	30				
Methylene Chloride	93	97	77-135	4	30				
Styrene	101	111	71-138	9	30				
1,1,2,2-Tetrachloroethane	102	114	75-131	10	30				
Tetrachloroethene	97	102	75-129	5	30				
Toluene	98	106	83-127	8	30				
112Trichloro122Trifluoroethane	92	93	84-136	1	30				
1,1,1-Trichloroethane	101	104	85-140	3	30				
1,1,2-Trichloroethane	100	110	85-129	9	30				
Trichloroethene	101	107	85-131	5	30				
Trichlorofluoromethane	99	107	73-139	8	30				
Vinyl Acetate	95	92	27-162	3	30				
Vinyl Chloride	95	101	62-135	6	30				
m+p-Xylene	100	108	81-137	8	30				
o-Xylene	100	109	81-137	9	30				

Surrogate Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: The Boeing Company Group Number: 1546966
Reported: 03/30/2015 08:45

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260C SIM VC Only
Batch number: E150835AA

	Toluene-d8	1,4-Difluorobenzene
7814337	105	97
7814338	105	97
7814339	105	98
7814340	105	97
7814341	105	98
7814342	105	97
7814343	105	97
7814344	105	97
7814345	105	97
7814346	105	97
7814347	105	97
7814348	105	98
7814349	105	98
Blank	106	98
LCS	106	97
MS	106	98
MSD	105	98
Limits:	80-120	80-120

Analysis Name: 8260C Boeing 38
Batch number: H150831AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7814337	102	100	100	99
7814338	101	98	99	99
7814339	101	100	99	98
7814340	101	99	100	99
7814341	101	100	100	100
7814342	101	99	99	99
7814343	102	100	99	100
7814344	102	99	99	100
7814345	102	100	98	99
7814346	102	101	99	99
7814347	101	100	100	99
7814348	100	98	99	100
7814349	101	99	100	99
Blank	101	98	100	99
LCS	102	101	100	100
MS	101	99	100	101
MSD	101	100	100	99
Limits:	77-114	74-113	77-110	78-110

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Boeing Chain of Custody

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Acct. # 13419 Group # 1546962 Sample # 7914337-49

For Lancaster Laboratories use only

Please print. Instructions on reverse side correspond.

1 Client Information

Site Location: Auburn, WA
Site Project: Boeing Auburn
Site Program/#: 025164.120.105
Boeing PM: Jim Bet
Consultant Contact: Jennifer Wynkoop
Report To: Anne Halvorsen etc. (See JMS list)
Invoice To: [X] Boeing EHS [ ] Other (specify): _____
Sampler: SMM/ERM/SEF # of Coolers: 1

2 Sample Identification	Collected Date	Collected Time	3 Matrix	No. of Containers	4 Analyses Requested: Boeing 38 VOCs	VOC SIM - Vinyl Chloride	MS/MSD	5 Remarks/Comments
Trip Blanks	3/4/15	-	H2O	4	X	X		Allow water samples to settle, collect aliquot from clear portion.
ASB0244-9-20150316	3/16/15	1153		5	X	X		
ASB9245-10-20150316	3/16/15	1345		5	X	X		
ASB0245-10-20150316	3/16/15	1341		5	X	X		
ASB0246-10-20150316	3/16/15	1547		5	X	X		
ASB0254-8-20150318	3/18/15	1639		5	X	X		
ASB0250-7-20150317	3/17/15	1721		5	X	X		
ASB0249-7-20150317	3/17/15	1531		5	X	X		
ASB0248-7-20150317	3/17/15	1135		4	X	X		
ASB0247-7-20150317	3/17/15	935		5	X	X		
ASB0253-8-20150318	3/18/15	1541		4	X	X		
ASB0252-8-20150318	3/18/15	1351		6	X	X		
ASB0251-7-20150318	3/18/15	1015		15	X	X	X	

6 Turnaround Time Requested (please circle)

(Standard) 5 day 4 day
72 hour 48 hour 24 hour
Date needed: _____

Relinquished by:	Date/Time	Received by:	Date/Time 7
[signature]	3/19/15 1045		
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by: [signature]	Date/Time 3.20.15 9:20

Relinquished by commercial carrier (circle): (UPS) FedEx Other: _____
Temperature upon Receipt: 1.9 °C
Custody Seals Intact?: (Yes) No

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Sample Administration Receipt Documentation Log

Doc Log ID: 61733

Group Number(s): 1546966

Client: Boeing

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	03/20/2015 9:30
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	WA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Brandy Barclay (2299) at 13:10 on 03/20/2015

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.9	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

G# 1546966

VINCE YU
EUROFINS LANCASTER LABORATORIE
11720 NORTH CREEK PARKWAY N
BOTHELL WA 98011-8244

40 LBS

RS DWT: 25,14,14

SHIP TO:
SAMPLE ADMINASTRATION
(717) 656-2300
EUROFINS LANCASTER LABORATORIES.
2425 NEW HOLLAND PIKE
LANCASTER PA 17601-5946

PA 175 9-37

UPS NEXT DAY AIR
TRACKING #: 1Z RV3 069 Y0 4470 0281

1 S

BILLING: P/P
DESC: SAMPLING
RETURN SERVICE

REF 1: DEPT 40

WS 17 0 31 LD6200 57 0A 10/2014

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ISD RF 9714

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

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5/8/2015

Ms. Anne Halvorsen
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Boeing Auburn - Outlet Collection
Project #: 0025164.120.105
Workorder #: 1504515C

Dear Ms. Anne Halvorsen

The following report includes the data for the above referenced project for sample(s) received on 4/29/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1504515C

Work Order Summary

CLIENT:	Ms. Anne Halvorsen Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Robert Large Eurofins Lancaster Laboratories Environmental, LLC 2425 New Holland Pike Lancaster, PA 17605-2425
PHONE:	425.778.0907	**P.O. #**	
FAX:		**PROJECT #**	0025164.120.105 Boeing Auburn - Outlet Collection
DATE RECEIVED:	04/29/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/08/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
07A	SSV071-20150428	Modified ASTM D-1946	0.2 psi	15 psi
08A	SSV072-20150428	Modified ASTM D-1946	0.5 psi	15 psi
09A	SSV073-20150428	Modified ASTM D-1946	0.5 psi	15 psi
10A	Lab Blank	Modified ASTM D-1946	NA	NA
11A	LCS	Modified ASTM D-1946	NA	NA
11AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY:  DATE: 05/08/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified ASTM D-1946
Landau Associates, Inc.
Workorder# 1504515C

Three 1 Liter Summa Canister samples were received on April 29, 2015. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

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

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A signature and date were not provided by the field

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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

Client Sample ID: SSV071-20150428

Lab ID#: 1504515C-07A

No Detections Were Found.

Client Sample ID: SSV072-20150428

Lab ID#: 1504515C-08A

No Detections Were Found.

Client Sample ID: SSV073-20150428

Lab ID#: 1504515C-09A

No Detections Were Found.

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Client Sample ID: SSV071-20150428

Lab ID#: 1504515C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9043004b**	**Date of Collection: 4/28/15 11:43:00 AM**	
Dil. Factor:	**1.99**	**Date of Analysis: 4/30/15 11:41 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.10	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SSV072-20150428

Lab ID#: 1504515C-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9043005b**	**Date of Collection: 4/28/15 12:19:00 PM**	
Dil. Factor:	**1.95**	**Date of Analysis: 4/30/15 12:11 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.098	Not Detected

Container Type: 1 Liter Summa Canister

eurofins | Air Toxics

Client Sample ID: SSV073-20150428

Lab ID#: 1504515C-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9043006b**	**Date of Collection: 4/28/15 1:25:00 PM**	
Dil. Factor:	**1.95**	**Date of Analysis: 4/30/15 12:33 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.098	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1504515C-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9043003b**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:44 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1504515C-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9043002b**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:12 AM**	

Compound	%Recovery	Method Limits
Helium	100	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1504515C-11AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**9043012b**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 06:02 PM**	

Compound	%Recovery	Method Limits
Helium	100	85-115

Container Type: NA - Not Applicable

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5/12/2015

Ms. Anne Halvorsen
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Boeing Auburn - Outlet Collection
Project #: 0025164.120.105
Workorder #: 1504515B

Dear Ms. Anne Halvorsen

The following report includes the data for the above referenced project for sample(s) received on 4/29/2015 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1504515B

Work Order Summary

CLIENT:	Ms. Anne Halvorsen Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Robert Large Eurofins Lancaster Laboratories Environmental, LLC 2425 New Holland Pike Lancaster, PA 17605-2425
PHONE:	425.778.0907	**P.O. #**	
FAX:		**PROJECT #**	0025164.120.105 Boeing Auburn - Outlet Collection
DATE RECEIVED:	04/29/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/12/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
07A	SSV071-20150428	TO-15	0.2 psi	15 psi
08A	SSV072-20150428	TO-15	0.5 psi	15 psi
09A	SSV073-20150428	TO-15	0.5 psi	15 psi
10A	Lab Blank	TO-15	NA	NA
11A	CCV	TO-15	NA	NA
12A	LCS	TO-15	NA	NA
12AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo

Technical Director

DATE: 05/12/15

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
EPA Method TO-15
Landau Associates, Inc.
Workorder# 1504515B

Three 1 Liter Summa Canister samples were received on April 29, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A signature and date were not provided by the field

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, LOD, or MDL value. See data page for project specific U-flag definition.

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

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: SSV071-20150428

Lab ID#: 1504515B-07A

No Detections Were Found.

Client Sample ID: SSV072-20150428

Lab ID#: 1504515B-08A

No Detections Were Found.

Client Sample ID: SSV073-20150428

Lab ID#: 1504515B-09A

No Detections Were Found.

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Client Sample ID: SSV071-20150428

Lab ID#: 1504515B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043010**	**Date of Collection:**	**4/28/15 11:43:00 AM**
Dil. Factor:	**1.99**	**Date of Analysis:**	**4/30/15 04:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	3.9	Not Detected
Trichloroethene	1.0	Not Detected	5.3	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: SSV072-20150428

Lab ID#: 1504515B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043011**	**Date of Collection: 4/28/15 12:19:00 PM**	
Dil. Factor:	**1.95**	**Date of Analysis: 4/30/15 04:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.98	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.98	Not Detected	3.9	Not Detected
Trichloroethene	0.98	Not Detected	5.2	Not Detected

Container Type: 1 Liter Summa Canister

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

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Client Sample ID: SSV073-20150428

Lab ID#: 1504515B-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043012**	**Date of Collection: 4/28/15 1:25:00 PM**	
Dil. Factor:	**1.95**	**Date of Analysis: 4/30/15 05:04 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.98	Not Detected	2.5	Not Detected
cis-1,2-Dichloroethene	0.98	Not Detected	3.9	Not Detected
Trichloroethene	0.98	Not Detected	5.2	Not Detected

Container Type: 1 Liter Summa Canister

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

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Client Sample ID: Lab Blank

Lab ID#: 1504515B-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043007**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 01:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected

Container Type: NA - Not Applicable

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

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Client Sample ID: CCV

Lab ID#: 1504515B-11A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043002**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:04 AM**	

Compound	%Recovery
Vinyl Chloride	81
cis-1,2-Dichloroethene	96
Trichloroethene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCS

Lab ID#: 1504515B-12A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043003**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:31 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	89	70-130
cis-1,2-Dichloroethene	111	70-130
Trichloroethene	91	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCSD

Lab ID#: 1504515B-12AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3043004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:57 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	89	70-130
cis-1,2-Dichloroethene	112	70-130
Trichloroethene	95	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130

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5/12/2015

Ms. Anne Halvorsen
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Boeing Auburn - Outlet Collection
Project #: 0025164.120.105
Workorder #: 1504515A

Dear Ms. Anne Halvorsen

The following report includes the data for the above referenced project for sample(s) received on 4/29/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1504515A

Work Order Summary

CLIENT:	Ms. Anne Halvorsen Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Robert Large Eurofins Lancaster Laboratories Environmental, LLC 2425 New Holland Pike Lancaster, PA 17605-2425
PHONE:	425.778.0907	**P.O. #**	
FAX:		**PROJECT #**	0025164.120.105 Boeing Auburn - Outlet Collection
DATE RECEIVED:	04/29/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/12/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IA078-20150427	Modified TO-15	5.1 "Hg	4.9 psi
02A	IA080-20150427	Modified TO-15	5.9 "Hg	4.9 psi
03A	IA081-20150427	Modified TO-15	5.9 "Hg	4.9 psi
04A	AA034-20150427	Modified TO-15	7.1 "Hg	4.9 psi
05A	IA077-20150427	Modified TO-15	5.7 "Hg	5 psi
06A	IA079-20150427	Modified TO-15	5.1 "Hg	4.7 psi
07A	Lab Blank	Modified TO-15	NA	NA
08A	CCV	Modified TO-15	NA	NA
09A	LCS	Modified TO-15	NA	NA
09AA	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/12/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified TO-15
Landau Associates, Inc.
Workorder# 1504515A

Six 6 Liter Summa Canister (SIM Certified) samples were received on April 29, 2015. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

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

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***
Initial Calibration	</=30% RSD with 2 compounds allowed out to < 40% RSD	</=30% RSD with 4 compounds allowed out to < 40% RSD
Blank and standards	Zero Air	UHP Nitrogen provides a higher purity gas matrix than zero air

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A signature and date were not provided by the field

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, LOD, or MDL value. See data page for project specific U-flag definition.

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

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: IA078-20150427

Lab ID#: 1504515A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.16	2.0	0.86	11

Client Sample ID: IA080-20150427

Lab ID#: 1504515A-02A

No Detections Were Found.

Client Sample ID: IA081-20150427

Lab ID#: 1504515A-03A

No Detections Were Found.

Client Sample ID: AA034-20150427

Lab ID#: 1504515A-04A

No Detections Were Found.

Client Sample ID: IA077-20150427

Lab ID#: 1504515A-05A

No Detections Were Found.

Client Sample ID: IA079-20150427

Lab ID#: 1504515A-06A

No Detections Were Found.

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Client Sample ID: IA078-20150427

Lab ID#: 1504515A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043016**	**Date of Collection: 4/27/15 6:46:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 4/30/15 07:13 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.64	Not Detected
Trichloroethene	0.16	2.0	0.86	11

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	80	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: IA080-20150427

Lab ID#: 1504515A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043017**	**Date of Collection: 4/27/15 7:08:00 PM**	
Dil. Factor:	**1.66**	**Date of Analysis: 4/30/15 08:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.17	Not Detected	0.42	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Trichloroethene	0.17	Not Detected	0.89	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	81	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	100	70-130

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Client Sample ID: IA081-20150427

Lab ID#: 1504515A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043018**	**Date of Collection: 4/27/15 7:18:00 PM**	
Dil. Factor:	**1.66**	**Date of Analysis: 4/30/15 09:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.17	Not Detected	0.42	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Trichloroethene	0.17	Not Detected	0.89	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	81	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: AA034-20150427

Lab ID#: 1504515A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043019**	**Date of Collection: 4/27/15 8:52:00 PM**	
Dil. Factor:	**1.75**	**Date of Analysis: 4/30/15 09:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.18	Not Detected	0.45	Not Detected
cis-1,2-Dichloroethene	0.18	Not Detected	0.69	Not Detected
Trichloroethene	0.18	Not Detected	0.94	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	82	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	97	70-130

eurofins | Air Toxics

Client Sample ID: IA077-20150427

Lab ID#: 1504515A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043020**	**Date of Collection: 4/27/15 6:19:00 PM**	
Dil. Factor:	**1.66**	**Date of Analysis: 4/30/15 10:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.17	Not Detected	0.42	Not Detected
cis-1,2-Dichloroethene	0.17	Not Detected	0.66	Not Detected
Trichloroethene	0.17	Not Detected	0.89	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	81	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: IA079-20150427

Lab ID#: 1504515A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043021**	**Date of Collection: 4/27/15 7:00:00 PM**	
Dil. Factor:	**1.59**	**Date of Analysis: 4/30/15 11:01 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.16	Not Detected	0.41	Not Detected
cis-1,2-Dichloroethene	0.16	Not Detected	0.63	Not Detected
Trichloroethene	0.16	Not Detected	0.85	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	80	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	96	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1504515A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043007**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 12:32 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected
cis-1,2-Dichloroethene	0.10	Not Detected	0.40	Not Detected
Trichloroethene	0.10	Not Detected	0.54	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	83	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: CCV

Lab ID#: 1504515A-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043003**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 09:26 AM**	

Compound	%Recovery
Vinyl Chloride	97
cis-1,2-Dichloroethene	103
Trichloroethene	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1504515A-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043004**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:10 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	105	70-130
cis-1,2-Dichloroethene	117	70-130
Trichloroethene	98	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCSD

Lab ID#: 1504515A-09AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20043005**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/30/15 10:54 AM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	102	70-130
cis-1,2-Dichloroethene	115	70-130
Trichloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130

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5/5/2015

Ms. Anne Halvorsen
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Boeing Auburn
Project #: 0025164.120.105
Workorder #: 1504384C

Dear Ms. Anne Halvorsen

The following report includes the data for the above referenced project for sample(s) received on 4/22/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1504384C

Work Order Summary

CLIENT:	Ms. Anne Halvorsen Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Robert Large Eurofins Lancaster Laboratories Environmental, LLC 2425 New Holland Pike Lancaster, PA 17605-2425
PHONE:	425.778.0907	**P.O. #**	0025164.120.105
FAX:		**PROJECT #**	0025164.120.105 Boeing Auburn
DATE RECEIVED:	04/22/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/05/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
04A	SSV069-20150421	Modified ASTM D-1946	0.8 "Hg	14.7 psi
05A	SSV070-20150421	Modified ASTM D-1946	0.8 "Hg	15.2 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
07A	LCS	Modified ASTM D-1946	NA	NA
07AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/05/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified ASTM D-1946
Landau Associates, Inc.
Workorder# 1504384C

Two 1 Liter Summa Canister samples were received on April 22, 2015. The laboratory performed analysis via Modified ASTM Method D-1946 for Helium in air using GC/TCD. The method involves direct injection of 1.0 mL of sample.

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

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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

Client Sample ID: SSV069-20150421

Lab ID#: 1504384C-04A

No Detections Were Found.

Client Sample ID: SSV070-20150421

Lab ID#: 1504384C-05A

No Detections Were Found.

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Client Sample ID: SSV069-20150421

Lab ID#: 1504384C-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10042414c**	**Date of Collection: 4/21/15 11:32:00 AM**	
Dil. Factor:	**2.06**	**Date of Analysis: 4/24/15 04:06 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.10	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: SSV070-20150421

Lab ID#: 1504384C-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10042415c**	**Date of Collection: 4/21/15 10:55:00 AM**	
Dil. Factor:	**2.09**	**Date of Analysis: 4/24/15 04:34 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.10	Not Detected

Container Type: 1 Liter Summa Canister

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Client Sample ID: Lab Blank

Lab ID#: 1504384C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10042404c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 10:01 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1504384C-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10042402c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 08:50 AM**	

Compound	%Recovery	Method Limits
Helium	103	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1504384C-07AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10042418c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/24/15 06:29 PM**	

Compound	%Recovery	Method Limits
Helium	102	85-115

Container Type: NA - Not Applicable

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5/5/2015

Ms. Anne Halvorsen
Landau Associates, Inc.
130 2nd Avenue South

Edmonds WA 98020

Project Name: Boeing Auburn
Project #: 0025164.120.105
Workorder #: 1504384B

Dear Ms. Anne Halvorsen

The following report includes the data for the above referenced project for sample(s) received on 4/22/2015 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1504384B

Work Order Summary

CLIENT:	Ms. Anne Halvorsen Landau Associates, Inc. 130 2nd Avenue South Edmonds, WA 98020	**BILL TO:**	Robert Large Eurofins Lancaster Laboratories Environmental, LLC 2425 New Holland Pike Lancaster, PA 17605-2425
PHONE:	425.778.0907	**P.O. #**	0025164.120.105
FAX:		**PROJECT #**	0025164.120.105 Boeing Auburn
DATE RECEIVED:	04/22/2015	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/05/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
04A	SSV069-20150421	TO-15	0.8 "Hg	14.7 psi
05A	SSV070-20150421	TO-15	0.8 "Hg	15.2 psi
06A	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 05/05/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
EPA Method TO-15
Landau Associates, Inc.
Workorder# 1504384B

Two 1 Liter Summa Canister samples were received on April 22, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

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

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

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, LOD, or MDL value. See data page for project specific U-flag definition.

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

N - The identification is based on presumptive evidence.

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

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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

Client Sample ID: SSV069-20150421

Lab ID#: 1504384B-04A

No Detections Were Found.

Client Sample ID: SSV070-20150421

Lab ID#: 1504384B-05A

No Detections Were Found.

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Client Sample ID: SSV069-20150421

Lab ID#: 1504384B-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20042316**	**Date of Collection:**	**4/21/15 11:32:00 AM**
Dil. Factor:	**2.06**	**Date of Analysis:**	**4/24/15 05:30 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	83	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: SSV070-20150421

Lab ID#: 1504384B-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20042317**	**Date of Collection:**	**4/21/15 10:55:00 AM**
Dil. Factor:	**2.09**	**Date of Analysis:**	**4/24/15 06:21 AM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Trichloroethene	1.0	Not Detected	5.6	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	78	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1504384B-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20042314**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/23/15 10:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	82	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: CCV

Lab ID#: 1504384B-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20042310**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/23/15 05:36 PM**	

Compound	%Recovery
Vinyl Chloride	98
cis-1,2-Dichloroethene	103
Trichloroethene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	102	70-130

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Client Sample ID: LCS

Lab ID#: 1504384B-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20042311**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/23/15 06:53 PM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	106	70-130
cis-1,2-Dichloroethene	118	70-130
Trichloroethene	102	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: LCSD

Lab ID#: 1504384B-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**20042312**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 4/23/15 07:49 PM**	

Compound	%Recovery	Method Limits
Vinyl Chloride	106	70-130
cis-1,2-Dichloroethene	118	70-130
Trichloroethene	103	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130