Technical Memorandum

TO: Andrew Rigel, Hillis Clark Martin & Peterson P.S.

FROM: Timothy L. Syverson, LG

DATE: June 29, 2016

RE: **Air, Sub-Slab Soil Vapor, Soil, and Groundwater Sampling and Analysis Results**
Ultra Custom Cleaners Tenant Space – Bucklin Place
Silverdale, Washington
Project No. 1595001.010.013

Introduction

This technical memorandum summarizes the findings, and associated next steps, of the environmental investigation conducted by Landau Associates, Inc. (LAI) from March to May 2016 at the Ultra Custom Cleaners (UCC) tenant space at Bucklin Place (site) located at 2222 NW Bucklin Hill Road, Suite 105, Silverdale, Washington. A January 2016 investigation by Adapt Engineering (Adapt 2016) identified the presence of volatile organic compounds (VOCs), including the chlorinated solvents tetrachloroethene (PCE) and trichloroethene (TCE), in sub-slab soil vapor below the UCC tenant space. PCE and TCE have historically been used in dry cleaning as a cleaning fluid and spot remover, respectively (Doherty 2000a, b).

Based on the available information regarding operations at the site, the VOCs detected in sub-slab soil vapor are interpreted to be due to dry cleaning operations conducted at the UCC tenant space. The purpose of the environmental investigation discussed in this report was to evaluate the nature and extent of the VOC contamination at the site that was first identified by Adapt, and to develop a strategy to address the contamination consistent with the applicable Washington State Department of Ecology (Ecology) cleanup regulations.

Sampling and Analysis

The LAI investigation included a vapor intrusion building survey and the collection and laboratory analysis of indoor air, sub-slab soil vapor, soil, and groundwater samples as described below.

- **Vapor Intrusion Building Survey:** A vapor intrusion building survey was conducted on March 30, 2016 to assess the potential for vapor intrusion, to identify potential sources of indoor air contamination, and to identify indoor air and soil vapor sampling locations.
- **Indoor Air Sampling:** Three indoor air samples were collected using Summa canisters from two locations (IA-1 and IA-2) inside the UCC tenant space. Each canister was set to collect a sample over an 8-hour time period. One sample was collected at each of the two locations on the night of April 19, 2016, when building doors were closed and the HVAC system was turned off. The third sample was collected at sample location IA-1 (Figure 1) during the day of May 11, 2016, when doors were open and the HVAC system was on. One ambient air sample was also collected from the roof of the building (AA-1) on the night of April 19, 2016 for use in assessing any potential contributions from ambient air. All of the air samples were submitted

for analysis for selected VOCs, including PCE and TCE, by US Environmental Protection Agency (EPA) Method TO-15 to ALS Laboratory in Simi Valley, California.

- **Sub-Slab Soil Vapor Sampling:** Sub-slab soil vapor samples (SV-5, SV-6, and SV-7) were collected on May 11, 2016 using temporary vapor pins installed at three locations through the concrete floor of the UCC tenant space. The soil vapor samples were collected in 1-liter Summa canisters. The sample collection included the use of a helium shroud to check for leaks in the sampling apparatus. All of the sub-slab soil vapor samples were submitted for analysis for VOCs (EPA Method TO-15) and helium (EPA Method 3C Modified) to ALS Laboratory in Simi Valley, California.
- **Soil Sampling:** Soil samples were collected from five locations (SB-1 through SB-5) in and around the UCC tenant space on May 11, 2016. The soil samples were collected using direct-push drilling methods (outdoor locations SB-1, SB-2, SB-3, and SB-5) or a rotary hammer and hand tools (indoor location SB-4). The soil borings were advanced until refusal, which was encountered at 2.5 feet (ft) below ground surface (bgs) at SB-4, the indoor sample location, and ranged from 7 to 15 ft bgs at the outdoor sample locations. Two intervals of soil were selected for sampling at each drilling location, except at SB-4 which was sampled at only one depth. All of the soil samples were submitted for analysis for VOCs (EPA Method 8260) to ALS Laboratory in Everett, Washington. Soil boring logs of for each boring are provided in Attachment 1.
- **Groundwater Sampling:** Groundwater samples were collected on May 11, 2016 from the three soil boring locations where groundwater was observed (SB-2, SB-3, and SB-5). The samples were collected using a peristaltic pump from temporary well screens placed in the soil borings. All of the groundwater samples were submitted for analysis for VOCs (EPA Method 8260) to ALS Laboratory in Everett, Washington. The details for the temporary wells are included on the soil boring logs (Attachment 1).

The LAI sampling locations are shown on Figure 1.

Data Summary and Discussion

The laboratory analytical results indicate the presence of VOCs in indoor air, sub-slab soil vapor, and groundwater at concentrations greater than the identified screening levels, which are based on regulatory cleanup levels and response levels developed and published by Ecology or the EPA as guidelines for contaminant concentrations in indoor air, soil vapor, soil, and/or water for the protection of human health and/or the environment. The specific screening levels used for each medium are as follows:

- Indoor air analytical results were compared to Washington State Model Toxics Control Act (MTCA) Method B cleanup levels and EPA Accelerated and Urgent Response Action Levels (URALs).
- Soil vapor analytical results were compared to MTCA Method B cleanup levels.
- Soil and groundwater analytical results were compared to MTCA Method A cleanup levels.

The laboratory analytical results are provided on Figures 2 and 3, and in Tables 1 through 4. The laboratory analytical reports are also provided in Attachment 2. Significant analytical results from each media are summarized as follows:

- **Indoor Air:** PCE (10 micrograms per cubic meter [$\mu g/m^3$]) and TCE (67 to 68 $\mu g/m^3$) were detected at concentrations greater than the screening levels (9.6 and 0.37 $\mu g/m^3$, respectively) in both indoor air samples collected on the night of April 19, 2016 when the building doors were closed and the HVAC system was turned off. TCE (4.8 $\mu g/m^3$) was also detected at a concentration greater than the screening level in the sample collected on the day of May 11, 2016 (Table 1, Figure 2) during routine operation in the UCC tenant space when the doors were open and the HVAC system was on. Contaminant concentrations in indoor air greater than the screening levels are considered to be a risk to human health.

  Additionally, the TCE concentrations in samples collected the night of April 19, 2016 when the building doors were closed and the HVAC system was turned off were greater than the EPA URAL 10-hour workday action level (21 $\mu g/m^3$) for female workers of childbearing age.

- **Soil Vapor:** All of the soil vapor samples (SV-5, SV-6, and SV-7) indicated concentrations of PCE (1,400 to 3,200 $\mu g/m^3$) and TCE (43 to 830 $\mu g/m^3$) greater than the screening levels, which are 321 and 12.3 $\mu g/m^3$, respectively (Table 2, Figure 2). Contaminant concentrations in soil vapor above the screening levels are considered to be a potential risk to human health based on the potential for indoor air contamination via vapor intrusion.

- **Soil:** PCE was detected at concentrations greater than the laboratory reporting limit in soil samples collected from two borings, SB-3 (8 to 9 ft bgs) and SB-5 (3 to 4 ft bgs and 8 to 9 ft bgs), but at concentrations below screening levels (Table 3, Figure 3). TCE was not detected at concentrations greater than the laboratory reporting limit in soil.

- **Groundwater:** PCE was detected in groundwater at SB-3 and SB-5 (210 and 170 $\mu g/L$, respectively) at concentrations greater than the screening level of 5 $\mu g/L$ (Table 4, Figure 3). TCE was not detected in groundwater at concentrations greater than the screening level. Contaminant concentrations in groundwater above the screening levels are considered to be a potential risk to human health and the environment.

Conceptual Site Model

The analytical results for the samples of various media collected at the UCC tenant space indicate that the following VOC exposure pathways are complete and pose a risk to human health (Figure 4):

- Workers or customers of Ultra Custom Cleaners may be exposed to VOCs in indoor air.
- Construction workers may be exposed to VOCs in perched groundwater or soil vapor.

Additionally, as the full extent of the contamination is unknown, the following additional exposure pathways may also pose risks to human health (Figure 4):

- Workers or customers of adjacent businesses may be exposed to VOCs in indoor air.
- Construction workers may be exposed to VOCs in soil.

- Members of the general public may be exposed to VOCS if groundwater from the aquifer beneath the site is used as a drinking water source.
- Members of the general public or animals may be exposed to VOCS if surface water (Dyes Inlet) is affected due to migration in area groundwater.

Data Gaps

The data from the LAI investigation are insufficient to document the complete extent of the contamination and fully assess the previously discussed potential exposure pathways for workers, the general public, and the environment. Accordingly, additional work is necessary to fill these data gaps. The existing data gaps and the corresponding investigative activities to address them are summarized below.

- **Location and Extent of the Contamination:** Additional sampling of soil and groundwater beneath the site is necessary to identify the location and extent of the VOC contamination associated with dry cleaning operations at the UCC tenant space. The additional soil and groundwater data will be used to guide the planning and implementation of potential mitigation and remediation measures, allowing potential future actions to focus on the area(s) with the greatest contamination.
- **Vapor Intrusion/Indoor Air Investigation at Adjacent Building Units:** Results of sub-slab soil vapor sampling from locations adjacent to the western wall of UCC indicate that there is the potential for vapor intrusion and contamination of indoor air in adjacent tenant spaces on site. A sub-slab soil vapor/indoor air quality investigation in the adjacent occupied tenant spaces on site is necessary to evaluate and document the extent of indoor air contamination.
- **Vertical Extent of Soil and Groundwater Contamination:** Because PCE and TCE are denser than water, they typically migrate downward through soil and aquifer media. Therefore, deeper drilling is necessary to delineate the vertical extent of contamination, and determine if deeper soil and area/regional groundwater have been impacted.
- **Downgradient Extent of Groundwater Contamination:** Data from this investigation indicate that VOCs are present at concentrations greater than the screening levels in groundwater immediately south of the UCC tenant space. However, additional investigation is necessary to evaluate how far downgradient the contamination extends and if it extends off of the property toward Dyes Inlet.

Next Steps

Based on the available analytical data and the corresponding data gaps, the following actions are recommended:

- **Notify Ecology of the contamination.** Washington State law (Chapter 173.340-300 of the Washington Administrative Code) requires that Ecology be notified within 90 days of the discovery of a spill, even if the source of the spill is unknown. As the groundwater analytical report was received from the laboratory on May 20, 2016, Ecology should be notified of the VOC contamination by August 18, 2016.

- **Evaluate the chemical inventory.** The ratio of TCE to PCE in UCC indoor air compared to the ratio in soil vapor suggests that there may be a secondary indoor air source of TCE at the UCC tenant space. It is possible that products stored in the UCC tenant space contain VOCs that are contributing to indoor air VOC concentrations. Accordingly, products listed on the site chemical inventory, which was compiled during the vapor intrusion building survey, should be evaluated to identify if any of the VOCs detected in indoor air may be from products stored and used on site rather than solely from soil vapor.
- **Complete additional investigation.** The purpose of an additional investigation will be to determine the location and extent of the VOC contamination associated with the dry cleaning operations, the extent of indoor air contamination, and the downgradient extent of contamination, as explained in the Data Gaps section.
- **Complete an indoor air mitigation interim action.** Given that the April 19, 2016 indoor air sample analytical results indicated VOCs exceeding the EPA URAL for TCE and that analytical results from both April 19 and May 11, 2016 indicated VOC concentrations greater than the MTCA Method B cleanup levels, an interim action to mitigate indoor air contamination may be necessary. The interim action may include near-term measures for worker health and safety such as adjustments to the HVAC system for positive pressure and operating practices such as keeping the doors open, and longer-term measures such as the installation of a sub-slab depressurization system and/or other type of air cleaning system to mitigate identified indoor air quality impacts.
- **Conduct remedial action.** Given that contamination exists at concentrations greater than the MTCA Method A and B cleanup levels in groundwater, soil vapor, and indoor air, remedial action will be needed to address the contamination. However, the scope of a remedial action and the specific technologies suitable for cleanup of the site cannot be identified until the extent of the contamination is further delineated and documented by additional investigation.

Conclusions

The presence of VOCs has been confirmed in indoor air, soil vapor, and groundwater at the UCC tenant space. The detected concentrations have been documented to be greater than the Ecology cleanup levels and indicate a potential threat to human health. Additional investigative activities are necessary to adequately delineate the contamination and evaluate potential exposure pathways.

Use of This Document

This technical memorandum has been prepared for the exclusive use of Bucklin Place LLC, its legal counsel, and appropriate regulatory agencies for specific application to the Ultra Custom Cleaners tenant space. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. 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 LAI, shall be at the user's sole risk. LAI 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 staff.

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BRD/DHF/TLS/ccy
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References

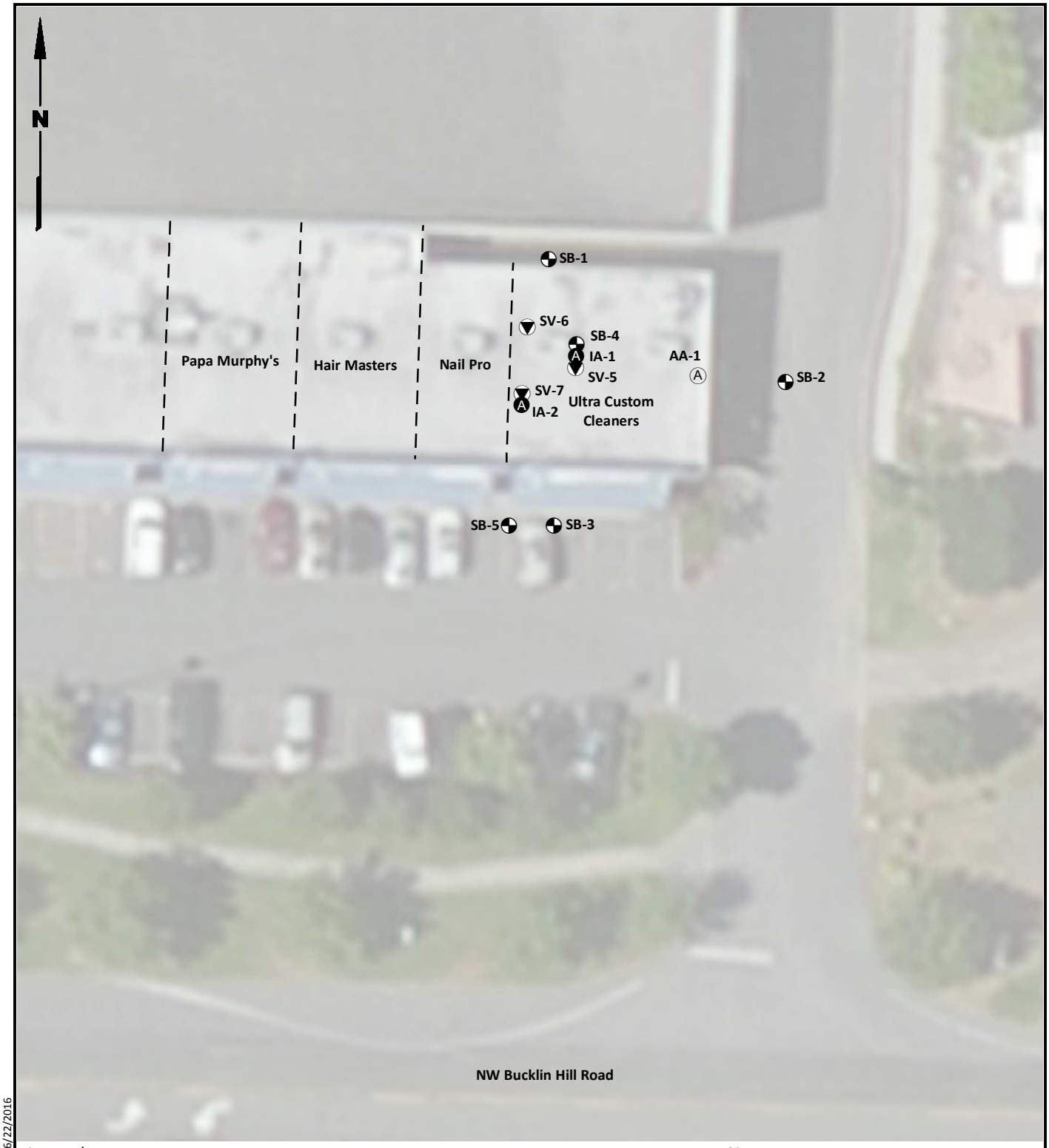
Adapt. 2016. Limited Sub-Slab Soil Gas Screen, Ultra Custom Cleaners Site, 2222 Northwest Bucklin Hill Road, Suite 105, Silverdale, Kitsap County, Washington 98383. Adapt Engineering. February 2.

Doherty, Richard E. 2000a. "A History of the Production and Use of Carbon Tetrachloride, Tetrachloroethylene, Trichloroethylene and 1,1,1-Trichloroethane in the United States: Part 1 - Historical Background; Carbon Tetrachloride and Tetrachloroethylene." *Journal of Environmental Forensics* 1 (2):69-81. doi: 10.1006/enfo.2000.0010.

Doherty, Richard E. 2000b. "A History of the Production and Use of Carbon Tetrachloride, Tetrachloroethylene, Trichloroethylene and 1,1,1-Trichloroethane in the United States: Part 2 - Trichloroethylene and 1,1,1-Trichloroethane." *Journal of Environmental Forensics* 1 (2):83-93. doi: 10.1006/enfo.2000.0011.

Attachments

Figure 1: Facility Plan
Figure 2: April/May 2016 Sub-Slab Soil Vapor and Indoor Air Sampling Results
Figure 3: May 2016 Soil and Groundwater Sampling Results
Figure 4: Conceptual Site Model
Table 1: Air Analytical Results
Table 2: Soil Vapor Analytical Results
Table 3: Soil Analytical Results
Table 4: Groundwater Analytical Results
Attachment 1: Soil Boring Logs
Attachment 2: Laboratory Analytical Reports



Legend

- Indoor Air Sampling Location
- Ambient Air Sampling Location
- Sub-slab Vapor Sampling Location
- Soil Boring Location

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 30 60

Scale in Feet

Data Source: Esri World Imagery.

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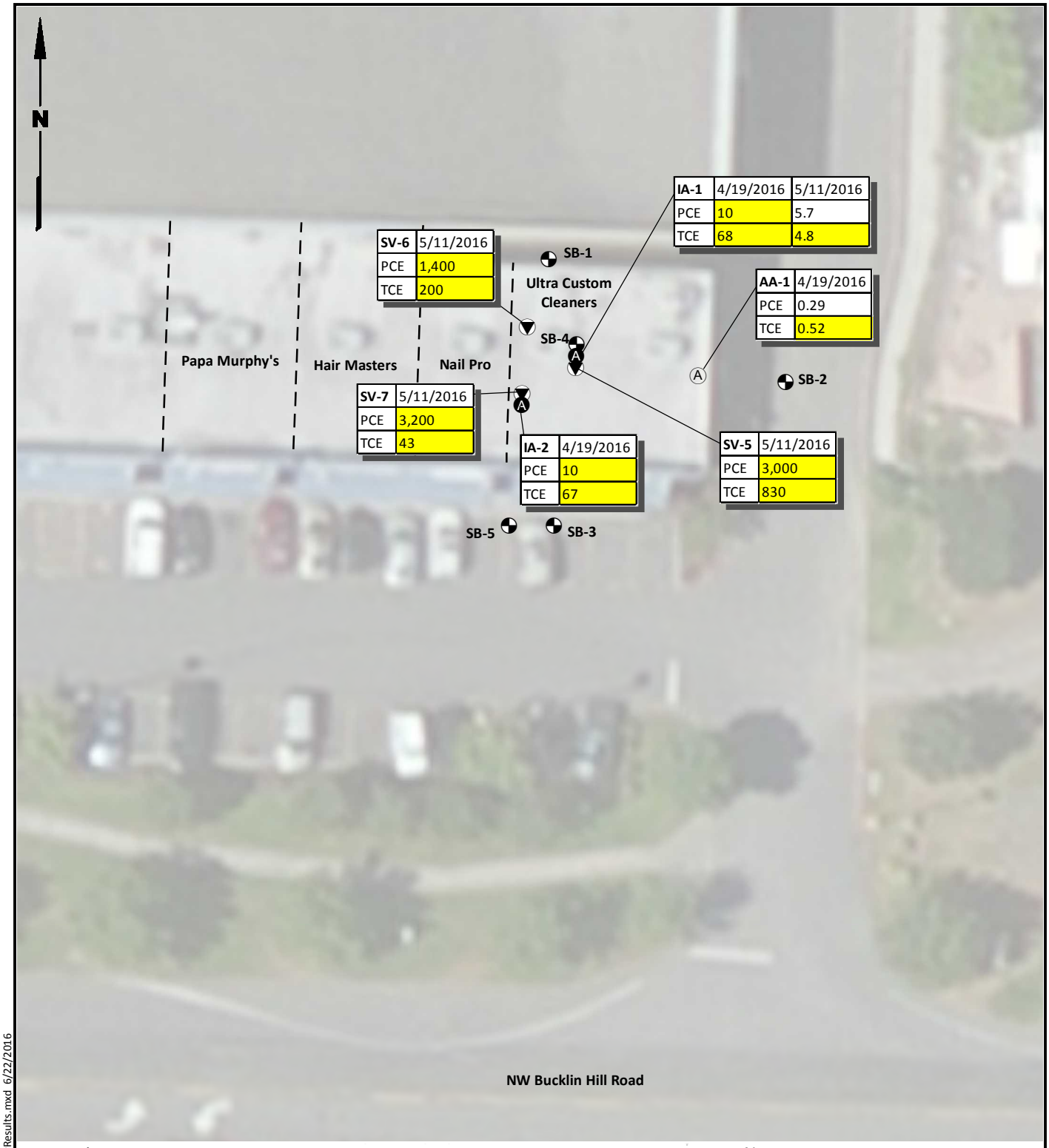
Ultra Custom Cleaners 2222 NW Bucklin Hill Road Silverdale, Washington	**Facility Plan**	Figure 1



Legend

- A — Indoor Air Sampling Location
- (A) — Ambient Air Sampling Location
- Sub-slab Vapor Sampling Location
- Soil Boring Location

PCE = tetrachloroethene
TCE = trichloroethene
µg/m3 = micrograms per cubic meter
MTCA = Model Toxics Control Act

0 30 60
Scale in Feet

Notes

1. All results shown in µg/m³.
2. Highlighted results exceed MTCA Method B Screening Levels.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery.

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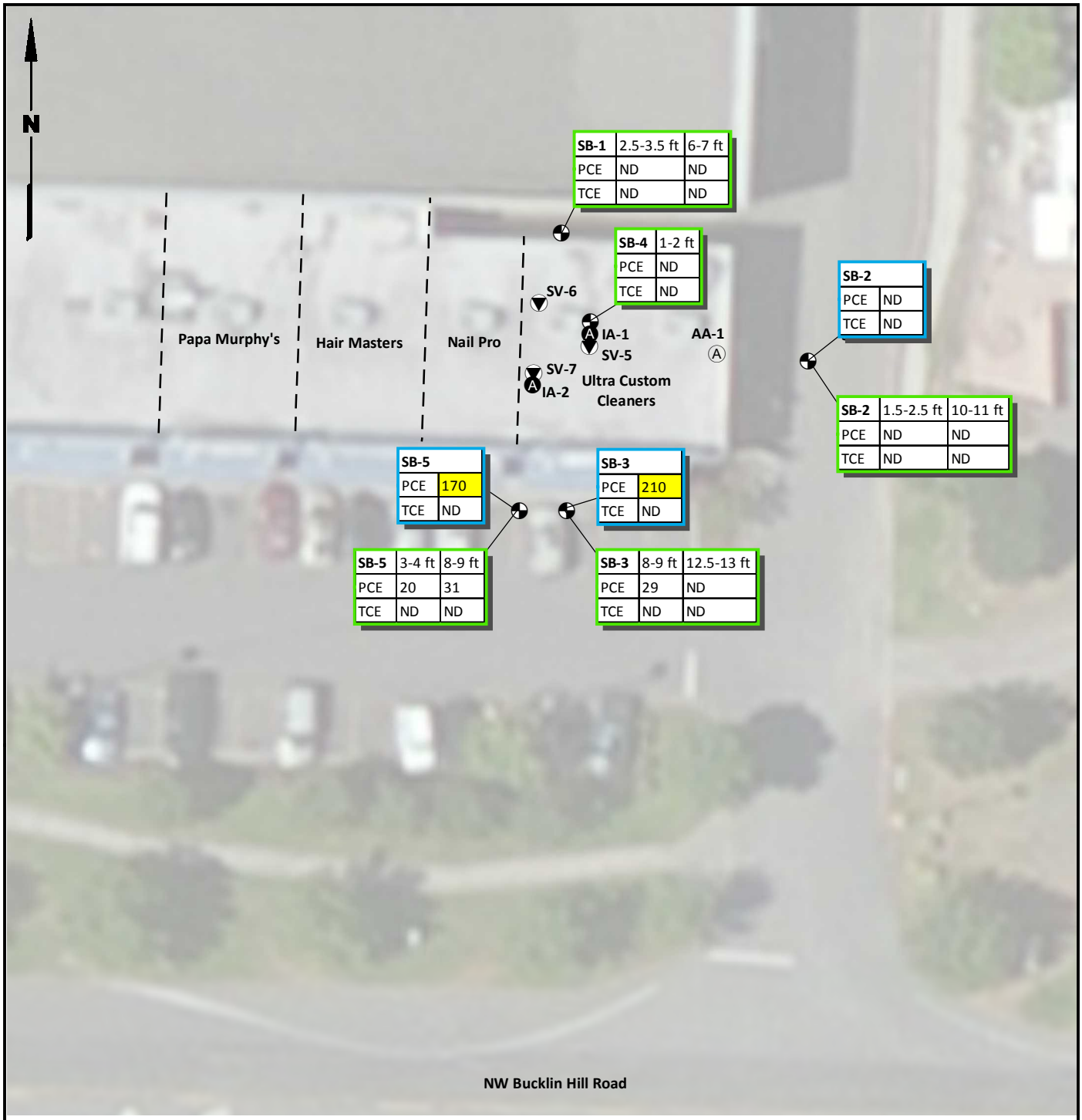
Ultra Custom Cleaners
2222 NW Bucklin Hill Road
Silverdale, Washington

April/May 2016 Sub-Slab Soil Vapor and Indoor Air Sampling Results

Figure 2



Legend

- Indoor Air Sampling Location
- Ambient Air Sampling Location
- Sub-slab Vapor Sampling Location
- Soil Boring Location

Soil Results

Groundwater Results

PCE = tetrachloroethene
TCE = trichloroethene
µg/kg = micrograms per kilogram
µg/L = micrograms per liter
MTCA = Model Toxics Control Act
ND = not detected

0 30 60

Scale in Feet

Data Source: Esri World Imagery.

Notes

1. Soil results shown in µg/kg. Groundwater results shown in µg/L.
2. Highlighted results exceed MTCA Method A Screening Levels.
3. All soil and groundwater samples were collected on May 11, 2016.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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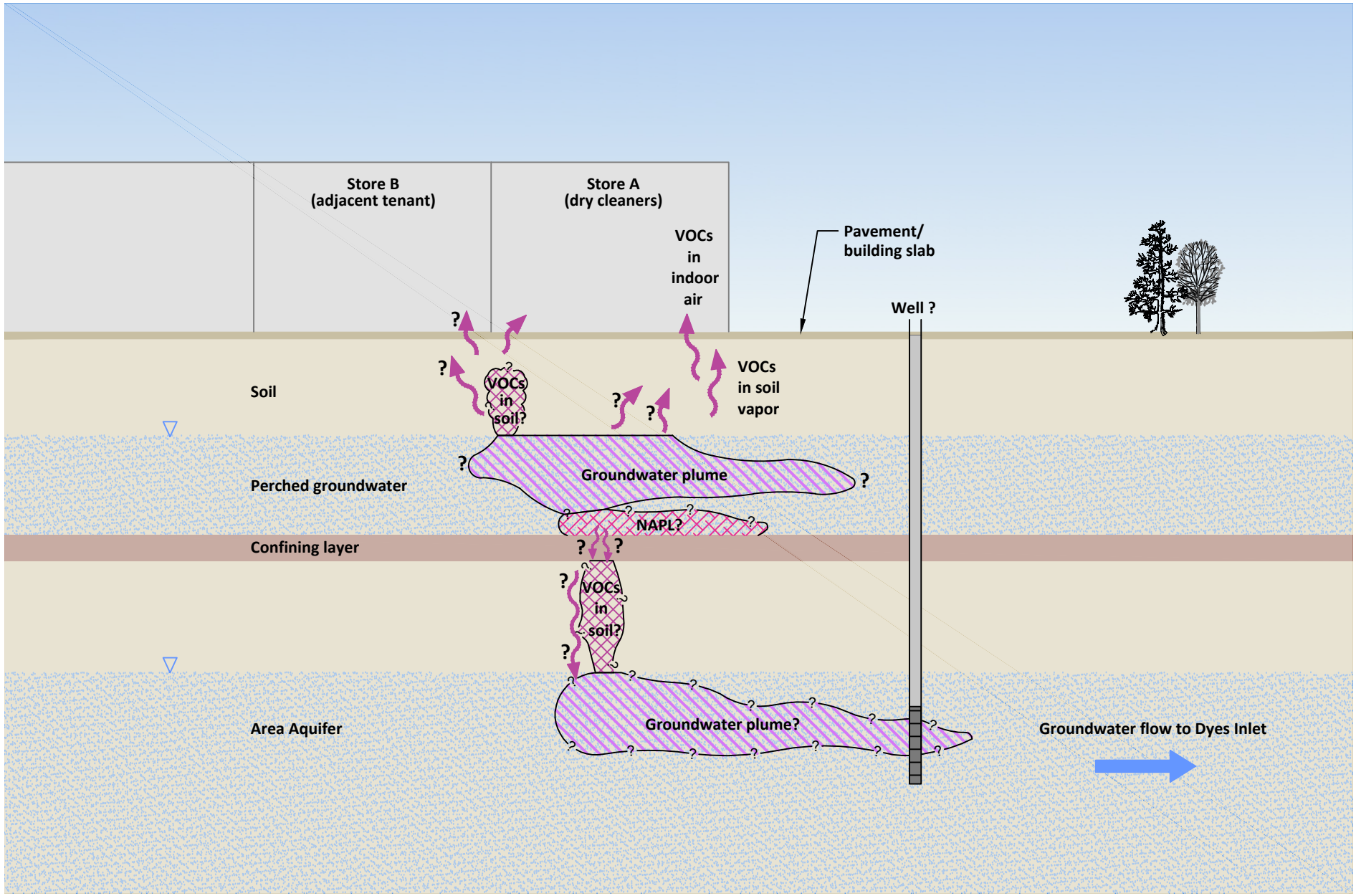
Ultra Custom Cleaners
2222 NW Bucklin Hill Road
Silverdale, Washington

May 2016 Soil and Groundwater Sampling Results

Figure 3



VOCs = volatile organic compounds
NAPL = non-aqueous phase liquid

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Ultra Custom Cleaners
2222 NW Bucklin Hill Road
Silverdale, Washington

Conceptual Site Model

Figure
4

Table 1
Air Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method B Indoor Air Screening Levels	EPA Interim Action Level Accelerated Response Action Level Commercial/Industrial 10-hour work day	EPA Interim Action Level Urgent Response Action Level Commercial/Industrial 10-hour work day	IA-1 P1602080-001 4/19/2016	IA-1 P1602491-004 5/11/2016
Volatiles (µg/m³)					
Method EPA TO-15					
Propene	--			**42**	
Dichlorodifluoromethane (CFC 12)	46			**1.8**	
Chloromethane	41			**0.28** J	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	--			0.90 U	
Vinyl Chloride	46			0.18 U	0.23 U
1,3-Butadiene	0.083			0.36 U	
Bromomethane	2.3			0.36 U	
Chloroethane	--			0.36 U	
Ethanol	--			**66**	
Acetonitrile	27			0.90 U	
Acrolein	0.009			**0.84** J	
Acetone	14,171			**200**	
Trichlorofluoromethane	320			**0.93**	
2-Propanol (Isopropyl Alcohol)	--			**43**	
Acrylonitrile	0.037			0.90 U	
1,1-Dichloroethene	91			0.18 U	
Methylene Chloride	250			**7.6** U	
3-Chloro-1-propene (Allyl Chloride)	0.42			0.18 U	
Trichlorotrifluoroethane	13,714			**0.44**	
Carbon Disulfide	320			9.0 U	
trans-1,2-Dichloroethene	27			0.18 U	
1,1-Dichloroethane	1.6			0.18 U	
Methyl tert-Butyl Ether	9.6			0.18 U	
Vinyl Acetate	91			9.0 U	
2-Butanone (MEK)	2,286			**5.9** J	
cis-1,2-Dichloroethene	--			0.18 U	0.23 U
Ethyl Acetate	32			**17**	
n-Hexane	320			**0.72** J	
Chloroform	0.11			**0.25**	
Tetrahydrofuran (THF)	--			0.90 U	
1,2-Dichloroethane	0.096			0.18 U	
1,1,1-Trichloroethane	2,286			0.18 U	
Benzene	0.32			**0.61**	**0.58**
Carbon Tetrachloride	0.42			**0.41**	**0.43**
Cyclohexane	2,743			**0.73** J	
1,2-Dichloropropane	0.25			0.18 U	
Bromodichloromethane	0.068			0.18 U	
Trichloroethene	0.37	7	21	**68**	**4.8**
1,4-Dioxane	0.50			0.90 U	
Methyl Methacrylate	320			**22**	
n-Heptane	--			**0.50** J	
cis-1,3-Dichloropropene	--			0.90 U	
4-Methyl-2-pentanone	1,371			**0.50** J	
trans-1,3-Dichloropropene	--			0.90 U	
1,1,2-Trichloroethane	2,286			0.18 U	
Toluene	2,286			**6.3**	
2-Hexanone	--			0.90 U	
Dibromochloromethane	0.093			0.18 U	
1,2-Dibromoethane	0.004			0.18 U	
n-Butyl Acetate	--			**6.8**	
n-Octane	--			**0.48** J	
Tetrachloroethene	9.6			**10**	**5.7**
Chlorobenzene	23			0.18 U	

Table 1
Air Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method B Indoor Air Screening Levels	EPA Interim Action Level Accelerated Response Action Level Commercial/Industrial 10-hour work day	EPA Interim Action Level Urgent Response Action Level Commercial/Industrial 10-hour work day	IA-1 P1602080-001 4/19/2016	IA-1 P1602491-004 5/11/2016
Ethylbenzene	457			**0.36** J	
m,p-Xylenes	46			**1.3**	
Bromoform	2.3			0.90 U	
Styrene	457			0.90 U	
o-Xylene	46			**0.65** J	
n-Nonane	--			**0.69** J	
1,1,2,2-Tetrachloroethane	0.043			0.18 U	
Cumene	183			0.90 U	
alpha-Pinene	--			**2.1**	
n-Propylbenzene	457			0.90 U	
4-Ethyltoluene	--			0.90 U	
1,3,5-Trimethylbenzene	--			**0.32** J	
1,2,4-Trimethylbenzene	3.2			**1.1**	
Benzyl Chloride	0.051			0.90 U	
1,3-Dichlorobenzene	--			0.18 U	
1,4-Dichlorobenzene	0.23			0.18 U	
1,2-Dichlorobenzene	91			0.18 U	
d-Limonene	--			**100**	
1,2-Dibromo-3-chloropropane	0.0004			0.90 U	
1,2,4-Trichlorobenzene	0.91			0.90 U	
Naphthalene	0.074			**0.80** J	
Hexachlorobutadiene	0.11			0.90 U	

U = The compound was not detected at the reported concentration.
J - Analyte was positively identified. Reported result is an estimate below the associated reporting limit but above the MDL.
Bold = Detected compound.
Box = Exceedance of screening critieria.

EPA = US Environmental Protection Agency
$\mu g/m^3$ = Micrograms per cubic meter
MTCA = Model Toxics Control Act

Table 1
Air Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method B Indoor Air Screening Levels	EPA Interim Action Level Accelerated Response Action Level Commercial/Industrial 10-hour work day	EPA Interim Action Level Urgent Response Action Level Commercial/Industrial 10-hour work day	IA-2 P1602080-002 4/19/2016	AA-1 P1602080-003 4/19/2016
Volatiles (µg/m³)					
Method EPA TO-15					
Propene	--			**38**	**0.68** J
Dichlorodifluoromethane (CFC 12)	46			**1.8**	**1.8**
Chloromethane	41			**0.28**	**0.24** J
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	--			0.68 U	0.83 U
Vinyl Chloride	46			0.14 U	0.17 U
1,3-Butadiene	0.083			0.27 U	0.33 U
Bromomethane	2.3			0.27 U	0.33 U
Chloroethane	--			0.27 U	0.33 U
Ethanol	--			**39**	**18**
Acetonitrile	27			**0.29** J	0.83 U
Acrolein	0.009			**1.0** J	**0.48** J
Acetone	14,171			**210**	**15**
Trichlorofluoromethane	320			**0.97**	**0.95**
2-Propanol (Isopropyl Alcohol)	--			**38**	**1.8** J
Acrylonitrile	0.037			0.68 U	0.83 U
1,1-Dichloroethene	91			0.14 U	0.17 U
Methylene Chloride	250			**7.5** U	**0.58** J,U
3-Chloro-1-propene (Allyl Chloride)	0.42			0.14 U	0.17 U
Trichlorotrifluoroethane	13,714			**0.46**	**0.45**
Carbon Disulfide	320			6.8 U	8.3 U
trans-1,2-Dichloroethene	27			0.14 U	0.17 U
1,1-Dichloroethane	1.6			0.14 U	0.17 U
Methyl tert-Butyl Ether	9.6			0.14 U	0.17 U
Vinyl Acetate	91			6.8 U	8.3 U
2-Butanone (MEK)	2,286			**6.2** J	**1.2** J
cis-1,2-Dichloroethene	--			0.14 U	0.17 U
Ethyl Acetate	32			**21**	**4.8**
n-Hexane	320			**0.81**	**0.57** J
Chloroform	0.11			**0.27**	0.17 U
Tetrahydrofuran (THF)	--			0.68 U	0.83 U
1,2-Dichloroethane	0.096			0.14 U	0.17 U
1,1,1-Trichloroethane	2,286			0.14 U	0.17 U
Benzene	0.32			**0.66**	**0.59**
Carbon Tetrachloride	0.42			**0.44**	**0.39**
Cyclohexane	2,743			**0.75** J	1.7 U
1,2-Dichloropropane	0.25			0.14 U	0.17 U
Bromodichloromethane	0.068			0.14 U	0.17 U
Trichloroethene	0.37	7	21	**67**	**0.52**
1,4-Dioxane	0.50			0.68 U	0.83 U
Methyl Methacrylate	320			**23**	**0.87** J
n-Heptane	--			**0.55** J	**0.43** J
cis-1,3-Dichloropropene	--			0.68 U	0.83 U
4-Methyl-2-pentanone	1,371			**0.50** J	0.83 U
trans-1,3-Dichloropropene	--			0.68 U	0.83 U
1,1,2-Trichloroethane	2,286			0.14 U	0.17 U
Toluene	2,286			**9.2**	**2.2**
2-Hexanone	--			0.68 U	0.83 U
Dibromochloromethane	0.093			0.14 U	0.17 U
1,2-Dibromoethane	0.004			0.14 U	0.17 U
n-Butyl Acetate	--			**7.3**	**0.34** J
n-Octane	--			**0.60** J	**0.36** J
Tetrachloroethene	9.6			**10**	**0.29**
Chlorobenzene	23			0.14 U	0.17 U

Table 1
Air Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method B Indoor Air Screening Levels	EPA Interim Action Level Accelerated Response Action Level Commercial/Industrial 10-hour work day	EPA Interim Action Level Urgent Response Action Level Commercial/Industrial 10-hour work day	IA-2 P1602080-002 4/19/2016	AA-1 P1602080-003 4/19/2016
Ethylbenzene	457			**0.41** J	**0.31** J
m,p-Xylenes	46			**1.5**	**1.1**
Bromoform	2.3			0.68 U	0.83 U
Styrene	457			0.68 U	0.83 U
o-Xylene	46			**0.72**	**0.41** J
n-Nonane	--			**0.75**	**0.44** J
1,1,2,2-Tetrachloroethane	0.043			0.14 U	0.17 U
Cumene	183			0.68 U	0.83 U
alpha-Pinene	--			**1.8**	**1.8**
n-Propylbenzene	457			0.68 U	0.83 U
4-Ethyltoluene	--			**0.28** J	0.83 U
1,3,5-Trimethylbenzene	--			**0.31** J	0.83 U
1,2,4-Trimethylbenzene	3.2			**0.93**	**0.55** J
Benzyl Chloride	0.051			0.68 U	0.83 U
1,3-Dichlorobenzene	--			0.14 U	0.17 U
1,4-Dichlorobenzene	0.23			0.14 U	0.17 U
1,2-Dichlorobenzene	91			0.14 U	0.17 U
d-Limonene	--			**40**	**0.75** J
1,2-Dibromo-3-chloropropane	0.0004			0.68 U	0.83 U
1,2,4-Trichlorobenzene	0.91			0.68 U	0.83 U
Naphthalene	0.074			**0.87**	0.83 U
Hexachlorobutadiene	0.11			0.68 U	0.83 U

U = The compound was not detected at the reported concentration.
J - Analyte was positively identified. Reported result is an estimate below the associated reporting limit but above the MDL.
Bold = Detected compound.
Box = Exceedance of screening critieria.

EPA = US Environmental Protection Agency
$\mu g/m^3$ = Micrograms per cubic meter
MTCA = Model Toxics Control Act

Table 2
Soil Vapor Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method B Sub-Slab Soil Vapor Screening Levels	SV-5 P1602547-001 5/11/2016	SV-6 P1602547-002 5/11/2016	SV-7 P1602547-003 5/11/2016
Volatiles (µg/m³)				
Method EPA TO-15 SIM				
Vinyl Chloride	9.3	37 U	11 U	35 U
cis-1,2-Dichloroethene		37 U	**1.9** J	35 U
Benzene	10.7	**3.0** J	**1.0** J	**3.8** J
Carbon Tetrachloride	13.9	37 U	**0.62** J	35 U
Trichloroethene	12.3	**830**	**200**	**43**
Tetrachloroethene	321	**3,000**	**1,400**	**3,200**
Helium (EPA 3C Modified; ppmV)		**290**	**150**	**96**

U = The compound was not detected at the reported concentration.
J - Analyte was positively identified. Reported result is an estimate below the associated reporting limit but above the method detection limit.
Bold = Detected compound.
Box = Exceedance of screening critieria.

EPA = US Environmental Protection Agency
µg/m^3 = Micrograms per cubic meter
MTCA = Model Toxics Control Act

Table 3
Soil Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method A Soil Screening Levels	SB-3-(8-9) EV16050067-04 05/11/2016	SB-3-(12.5-13) EV16050067-06 05/11/2016	SB-4-(1-2) EV16050067-07 05/11/2016	SB-5-(3-4) EV16050067-08 05/11/2016	SB-5-(8-9) EV16050067-09 05/11/2016	SB-1-(2.5-3.5) EV16050067-10 05/11/2016	SB-1-(6-7) EV16050067-11 05/11/2016	SB-2-(1.5-2.5) EV16050067-12 05/11/2016	SB-2-(10-11) EV16050067-13 05/11/2016
Volatiles (µg/kg)										
Method EPA 8260										
Dichlorodifluoromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichlorofluoromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride		20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Trans-1,2-Dichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis-1,2-Dichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2-Dichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromochloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromomethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trans-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cis-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	50	**29**	10 U	10 U	**20**	**31**	10 U	10 U	10 U	10 U
Dibromochloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane		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
Chlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1,2-Tetrachloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,3-Trichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorotoluene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorotoluene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromo 3-Chloropropane		50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
1,2,4-Trichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,3-Trichlorobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Table 3
Soil Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

U = The compound was not detected at the reported concentration.
J - Analyte was positively identified. Reported result is an estimate below the associated reporting limit but above the MDL.
Bold = Detected compound.

EPA = US Environmental Protection Agency
µg/kg = Micrograms per kilogram
MTCA = Model Toxics Control Act

Table 4
Groundwater Analytical Results
Bucklin Hill Road Property
Silverdale, Washington

	MTCA Method A Groundwater Screening Levels	SB-2 EV16050067-01 05/11/2016	SB-3 EV16050067-02 05/11/2016	SB-5 EV16050067-03 05/11/2016
VOCs (µg/L)				
Method EPA 8260				
Dichlorodifluoromethane		2.0 U	2.0 U	2.0 U
Chloromethane		2.0 U	2.0 U	2.0 U
Vinyl Chloride		0.20 U	0.20 U	0.20 U
Bromomethane		2.0 U	2.0 U	2.0 U
Chloroethane		2.0 U	2.0 U	2.0 U
Carbon Tetrachloride		2.0 U	2.0 U	2.0 U
Trichlorofluoromethane		2.0 U	2.0 U	2.0 U
1,1-Dichloroethene		2.0 U	2.0 U	2.0 U
Methylene Chloride		5.0 U	5.0 U	5.0 U
Trans-1,2-Dichloroethene		2.0 U	2.0 U	2.0 U
1,1-Dichloroethane		2.0 U	2.0 U	2.0 U
Cis-1,2-Dichloroethene		2.0 U	2.0 U	2.0 U
2,2-Dichloropropane		2.0 U	2.0 U	2.0 U
Bromochloromethane		2.0 U	2.0 U	2.0 U
Chloroform		2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane		2.0 U	2.0 U	2.0 U
1,1-Dichloropropene		2.0 U	2.0 U	2.0 U
1,2-Dichloroethane		2.0 U	2.0 U	2.0 U
Trichloroethene		2.0 U	2.0 U	2.0 U
1,2-Dichloropropane		2.0 U	2.0 U	2.0 U
Dibromomethane		2.0 U	2.0 U	2.0 U
Bromodichloromethane		2.0 U	2.0 U	2.0 U
Trans-1,3-Dichloropropene		2.0 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene		2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane		2.0 U	2.0 U	2.0 U
1,3-Dichloropropane		2.0 U	2.0 U	2.0 U
Tetrachloroethene	5	2.0 U	**210**	**170**
Dibromochloromethane		2.0 U	2.0 U	2.0 U
1,2-Dibromoethane		0.010 U	0.010 U	0.010 U
Chlorobenzene		2.0 U	2.0 U	2.0 U
1,1,1,2-Tetrachloroethane		2.0 U	2.0 U	2.0 U
Bromoform		2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane		2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane		2.0 U	2.0 U	2.0 U
Bromobenzene		2.0 U	2.0 U	2.0 U
2-Chlorotoluene		2.0 U	2.0 U	2.0 U
4-Chlorotoluene		2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene		2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene		2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene		2.0 U	2.0 U	2.0 U
1,2-Dibromo 3-Chloropropane		10 U	10 U	10 U
1,2,4-Trichlorobenzene		2.0 U	2.0 U	2.0 U
Hexachlorobutadiene		2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene		2.0 U	2.0 U	2.0 U

U = The compound was not detected at the reported concentration.
Bold = Detected compound.
Box = Exceedance of screening critieria.

EPA = US Environmental Protection Agency
µg/L = Micrograms per liter
MTCA = Model Toxics Control Act

ATTACHMENT 1

Soil 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.

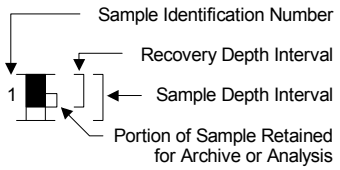
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

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

LANDAU ASSOCIATES

Bucklin Hill Road Property
Silverdale, Washington

Soil Classification System and Key

Figure A-1

SB-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	**Test Data**/ PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft):
0		i3				PC	Concrete
				2.6		SP	Gray-brown, fine to medium SAND with trace gravel and silt (no odor, no sheen) (dense, moist)
2				2.0			
		d3		**CA** 3.6			
4							
				0.6			
6		d3		0.5			
				CA 1.0			Wet
							Refusal at 7 feet below ground surface
8							
10							
12							
14							
16							
18							
20							

Groundwater not encountered.

Boring Completed 05/11/16
Total Depth of Boring = 7.0 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.

1595001.01 6/29/16 N:\PROJECTS\1595001.010.GPJ SOIL BORING LOG

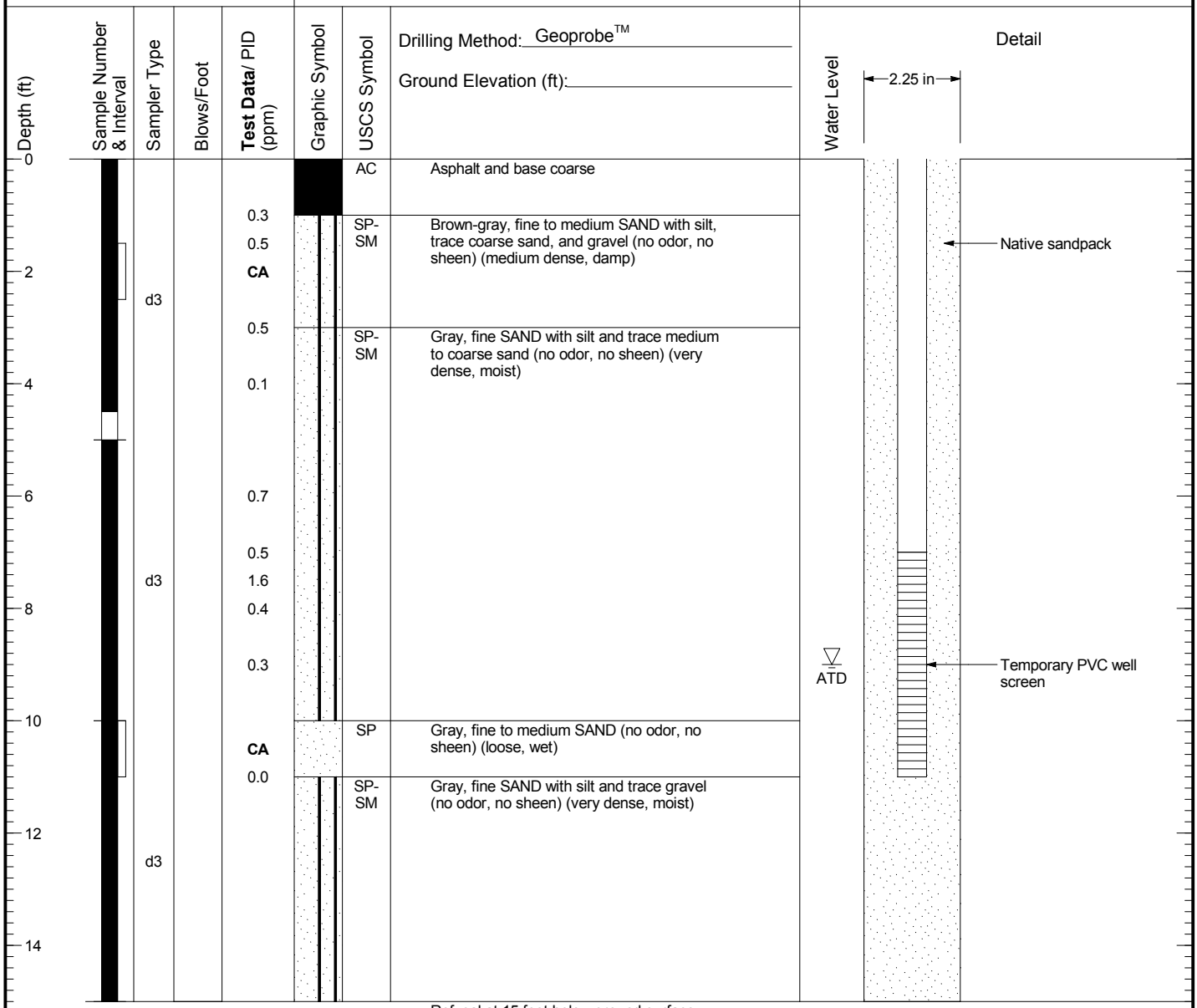
LANDAU ASSOCIATES

Bucklin Hill Road Property
Silverdale, Washington

Log of Boring SB-1

Figure
A-2

SB-2



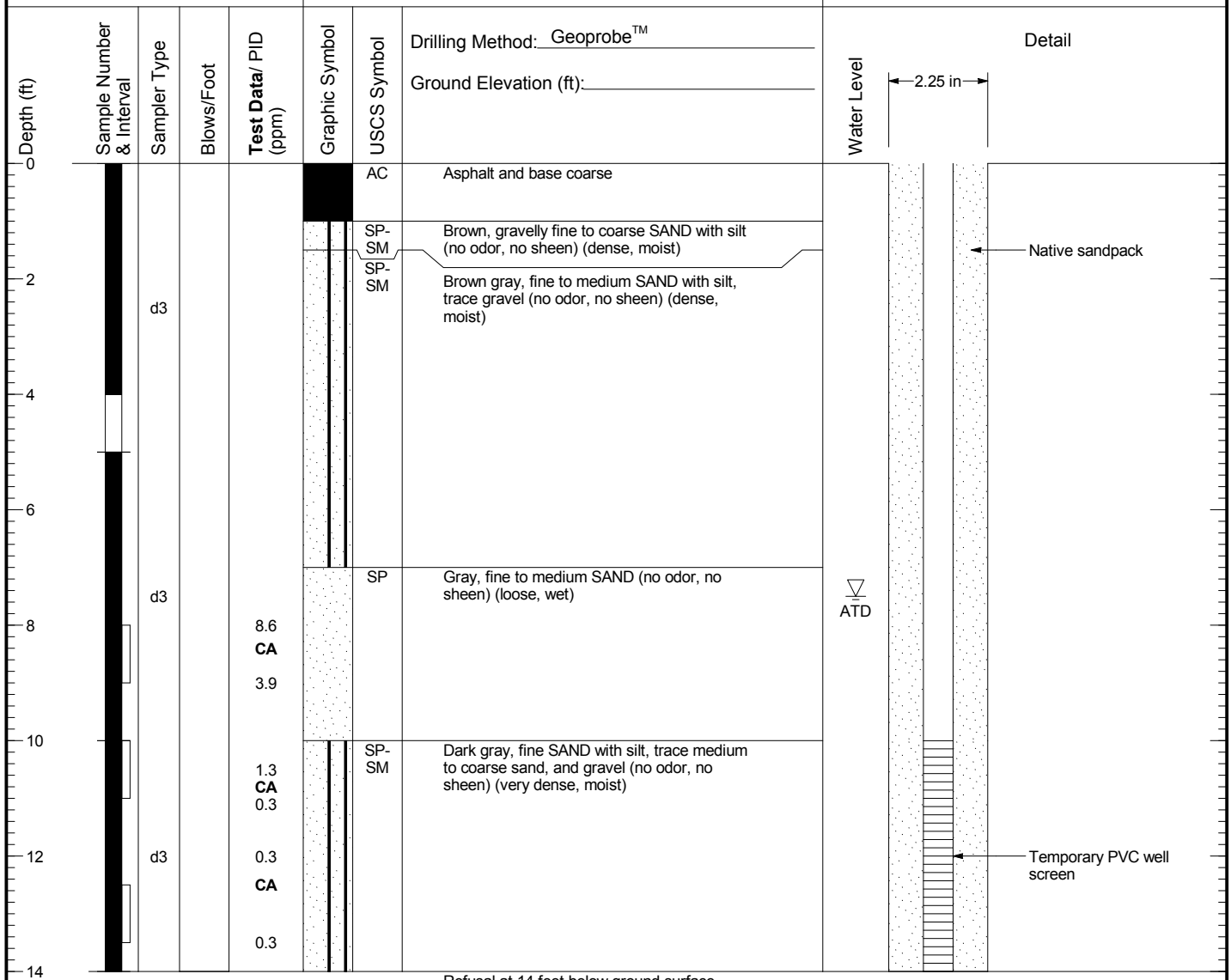
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1595001.01 6/29/16 N:\PROJECTS\1595001.010.GPJ WELL LOG

LANDAU ASSOCIATES

Bucklin Hill Road Property Silverdale, Washington	Log of SB-2	Figure A-3

SB-3



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.

1595001.01 6/29/16 N:\PROJECTS\1595001.010.GPJ WELL LOG

LANDAU ASSOCIATES

Bucklin Hill Road Property Silverdale, Washington	Log of SB-3	Figure A-4

SB-4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	**Test Data**/ PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Implements Ground Elevation (ft):
0						PC	Concrete and base coarse
		d3		4.4 **CA**		SP-SM	Brown to gray, fine to medium SAND with silt, trace gravel (no odor, no sheen) (medium dense, damp)
2				0.5 1.2			Refusal at 2.5 feet below ground surface

Groundwater not encountered.

Boring Completed 05/11/16
Total Depth of Boring = 2.5 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.

1595001.01 6/29/16 N:\PROJECTS\1595001.010.GPJ SOIL BORING LOG

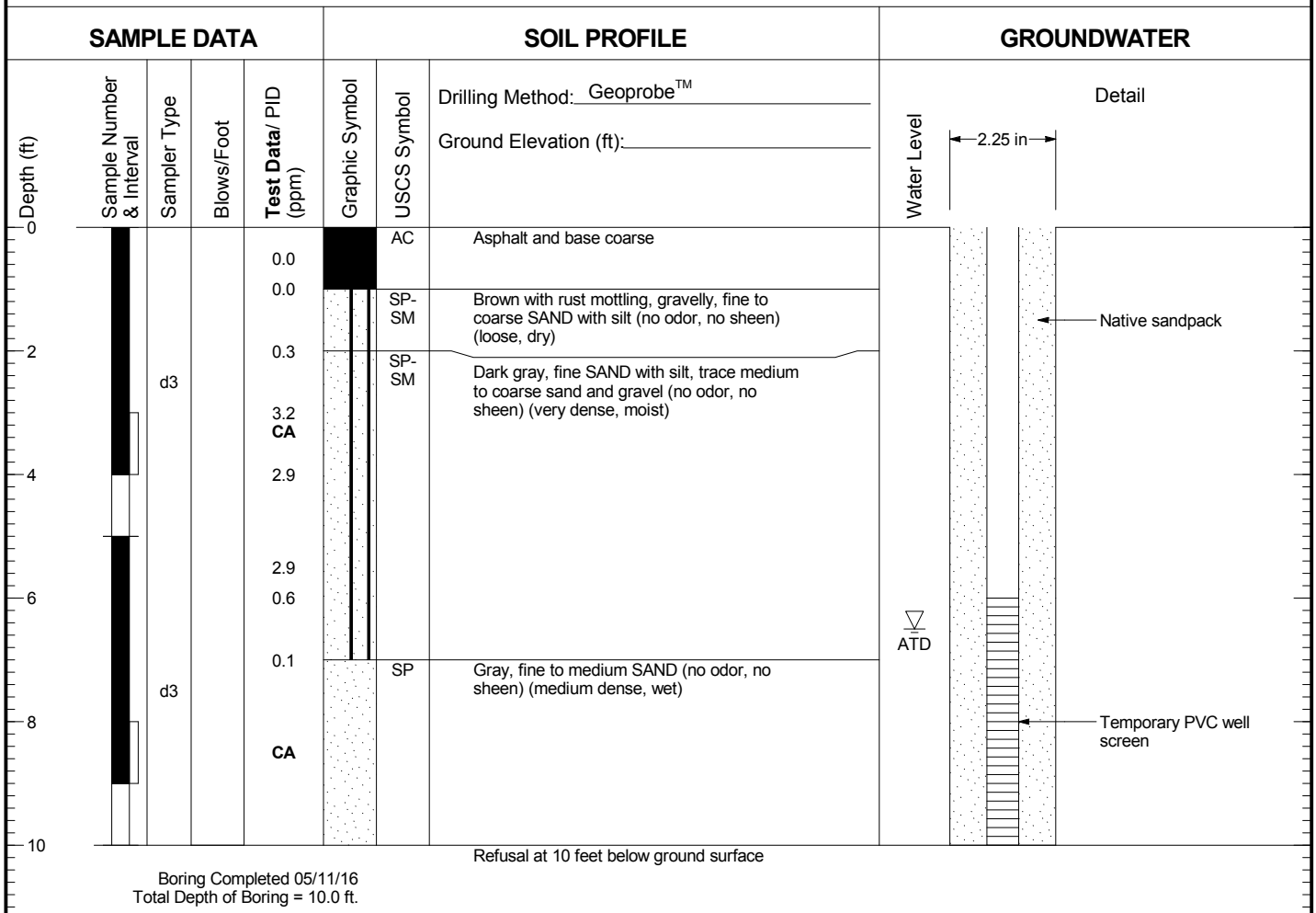
LANDAU ASSOCIATES

Bucklin Hill Road Property
Silverdale, Washington

Log of Boring SB-4

Figure
A-5

SB-5



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.

1595001.01 6/29/16 N:\PROJECTS\1595001.010.GPJ WELL LOG

LANDAU ASSOCIATES

Bucklin Hill Road Property Silverdale, Washington	Log of SB-5	Figure A-6

ATTACHMENT 2

Laboratory Analytical Reports

May 20, 2016

Mr. Tim Syverson
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Syverson,

On May 12th, 14 samples were received by our laboratory and assigned our laboratory project number EV16050067. The project was identified as your Bucklin - 1595001.010. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-01
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 1:15:00 PM
CLIENT SAMPLE ID	SB-2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	05/12/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	05/12/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	05/12/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-01
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 1:15:00 PM
CLIENT SAMPLE ID	SB-2	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	05/12/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**99.2**	05/12/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.9**	05/12/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-02
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 2:30:00 PM
CLIENT SAMPLE ID	SB-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	05/12/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	05/12/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Tetrachloroethylene	EPA-8260	**210**	20	10	UG/L	05/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	05/12/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-02
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 2:30:00 PM
CLIENT SAMPLE ID	SB-3	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	05/12/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**101**	05/12/2016	DLC
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	**109**	05/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**103**	05/12/2016	DLC
4-Bromofluorobenzene 10X Dilution	EPA-8260	**91.3**	05/13/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-03
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 4:10:00 PM
CLIENT SAMPLE ID	SB-5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	05/12/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	05/12/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Tetrachloroethylene	EPA-8260	**170**	20	10	UG/L	05/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	05/12/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-03
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 4:10:00 PM
CLIENT SAMPLE ID	SB-5	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	05/12/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**103**	05/12/2016	DLC
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	**107**	05/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**102**	05/12/2016	DLC
4-Bromofluorobenzene 10X Dilution	EPA-8260	**97.4**	05/13/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-04
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 2:40:00 PM
CLIENT SAMPLE ID	SB-3-(8-9)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/19/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Tetrachloroethylene	EPA-8260	**29**	10	1	UG/KG	05/19/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/19/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-04
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 2:40:00 PM
CLIENT SAMPLE ID	SB-3-(8-9)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/19/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**95.7**	05/19/2016	DLC
4-Bromofluorobenzene	EPA-8260	**96.3**	05/19/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-06
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 3:00:00 PM
CLIENT SAMPLE ID	SB-3-(12.5-13)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/19/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/19/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-06
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 3:00:00 PM
CLIENT SAMPLE ID	SB-3-(12.5-13)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/19/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**104**	05/19/2016	DLC
4-Bromofluorobenzene	EPA-8260	**96.9**	05/19/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-07
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 3:15:00 PM
CLIENT SAMPLE ID	SB-4-(1-2)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-07
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 3:15:00 PM
CLIENT SAMPLE ID	SB-4-(1-2)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	05/18/2016	DLC
4-Bromofluorobenzene	EPA-8260	**98.7**	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-08
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 4:10:00 PM
CLIENT SAMPLE ID	SB-5-(3-4)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	**20**	10	1	UG/KG	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-08
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 4:10:00 PM
CLIENT SAMPLE ID	SB-5-(3-4)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**107**	05/18/2016	DLC
4-Bromofluorobenzene	EPA-8260	**96.2**	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-09
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 4:15:00 PM
CLIENT SAMPLE ID	SB-5-(8-9)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	**31**	10	1	UG/KG	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-09
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 4:15:00 PM
CLIENT SAMPLE ID	SB-5-(8-9)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**104**	05/18/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.7**	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-10
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 12:05:00 PM
CLIENT SAMPLE ID	SB-1-(2.5-3.5)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/19/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/19/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-10
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 12:05:00 PM
CLIENT SAMPLE ID	SB-1-(2.5-3.5)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/19/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/19/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	05/19/2016	DLC
4-Bromofluorobenzene	EPA-8260	**98.1**	05/19/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-11
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 12:10:00 PM
CLIENT SAMPLE ID	SB-1-(6-7)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-11
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 12:10:00 PM
CLIENT SAMPLE ID	SB-1-(6-7)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	05/18/2016	DLC
4-Bromofluorobenzene	EPA-8260	**98.3**	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-12
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 1:10:00 PM
CLIENT SAMPLE ID	SB-2-(1.5-2.5)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-12
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 1:10:00 PM
CLIENT SAMPLE ID	SB-2-(1.5-2.5)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**108**	05/18/2016	DLC
4-Bromofluorobenzene	EPA-8260	**95.7**	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-13
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 1:00:00 PM
CLIENT SAMPLE ID	SB-2-(10-11)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	20	1	UG/KG	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Chloroform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trichloroethene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromomethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	5.0	1	UG/KG	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromoform	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Bromobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-13
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016 1:00:00 PM
CLIENT SAMPLE ID	SB-2-(10-11)	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	50	1	UG/KG	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	10	1	UG/KG	05/18/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**104**	05/18/2016	DLC
4-Bromofluorobenzene	EPA-8260	**97.8**	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-14
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016
CLIENT SAMPLE ID	Trip Blanks	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	05/12/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	05/12/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	05/12/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	5/20/2016 EV16050067 EV16050067-14
CLIENT CONTACT:	Tim Syverson	DATE RECEIVED:	05/12/2016
CLIENT PROJECT:	Bucklin - 1595001.010	COLLECTION DATE:	5/11/2016
CLIENT SAMPLE ID	Trip Blanks	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	05/12/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	05/12/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	05/12/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.2**	05/12/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020
CLIENT CONTACT: Tim Syverson
CLIENT PROJECT: Bucklin - 1595001.010

DATE: 5/20/2016
ALS SDG#: EV16050067
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-051816S - Batch 104412 - Soil by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Chloromethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Vinyl Chloride	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Bromomethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Chloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Carbon Tetrachloride	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Trichlorofluoromethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1-Dichloroethene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Methylene Chloride	EPA-8260	U	UG/KG	20	05/18/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1-Dichloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
2,2-Dichloropropane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Bromochloromethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Chloroform	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1-Dichloropropene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2-Dichloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Trichloroethene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2-Dichloropropane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Dibromomethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Bromodichloromethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Toluene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,3-Dichloropropane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Tetrachloroethylene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Dibromochloromethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2-Dibromoethane	EPA-8260	U	UG/KG	5.0	05/18/2016	DLC
Chlorobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Bromoform	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Bromobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
2-Chlorotoluene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
4-Chlorotoluene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020
CLIENT CONTACT: Tim Syverson
CLIENT PROJECT: Bucklin - 1595001.010

DATE: 5/20/2016
ALS SDG#: EV16050067
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-051816S - Batch 104412 - Soil by EPA-8260

1,4-Dichlorobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/KG	50	05/18/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
Hexachlorobutadiene	EPA-8260	U	UG/KG	10	05/18/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/KG	10	05/18/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-051216W - Batch 104226 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	05/12/2016	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	05/12/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Chloroform	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Toluene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	05/12/2016	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS SDG#: WDOE ACCREDITATION:	5/20/2016 EV16050067 C601
CLIENT CONTACT:	Tim Syverson		
CLIENT PROJECT:	Bucklin - 1595001.010		

LABORATORY BLANK RESULTS

MB-051216W - Batch 104226 - Water by EPA-8260

Chlorobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Bromoform	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	05/12/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	05/12/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020
CLIENT CONTACT: Tim Syverson
CLIENT PROJECT: Bucklin - 1595001.010

DATE: 5/20/2016
ALS SDG#: EV16050067
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 104412 - Soil by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**105**			73	138	05/18/2016	DLC
1,1-Dichloroethene - BSD	EPA-8260	**104**	**1**		73	138	05/18/2016	DLC
Trichloroethene - BS	EPA-8260	**115**			75	136	05/18/2016	DLC
Trichloroethene - BSD	EPA-8260	**115**	**0**		75	136	05/18/2016	DLC
Toluene - BS	EPA-8260	**103**			76	134	05/18/2016	DLC
Toluene - BSD	EPA-8260	**104**	**1**		76	134	05/18/2016	DLC
Chlorobenzene - BS	EPA-8260	**97.3**			79	128	05/18/2016	DLC
Chlorobenzene - BSD	EPA-8260	**99.4**	**2**		79	128	05/18/2016	DLC

ALS Test Batch ID: 104226 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**110**			72.5	136	05/12/2016	DLC
1,1-Dichloroethene - BSD	EPA-8260	**106**	**4**		72.5	136	05/12/2016	DLC
Trichloroethene - BS	EPA-8260	**107**			74.4	141	05/12/2016	DLC
Trichloroethene - BSD	EPA-8260	**110**	**2**		74.4	141	05/12/2016	DLC
Toluene - BS	EPA-8260	**106**			71.7	139	05/12/2016	DLC
Toluene - BSD	EPA-8260	**109**	**3**		71.7	139	05/12/2016	DLC
Chlorobenzene - BS	EPA-8260	**105**			73	131	05/12/2016	DLC
Chlorobenzene - BSD	EPA-8260	**113**	**8**		73	131	05/12/2016	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV1605006 7

Project: Bucklin

Received Date: 5/12/16 Received Time: 2:10 By: RB

Type of shipping container: Cooler X Box ___ Other ___

Shipped via: FedEx Ground ___ UPS ___ Mail ___ Courier ALS Hand Delivered ___
FedEx Express ___

	Yes	No	N/A
Were custody seals on outside of shipping container?	X	___	___
If yes, how many? 1 Where? Top			
Custody seal date: 5/12/16 Seal name: Landau			
Was Chain of Custody properly filled out (ink, signed, dated, etc.)?	X	___	___
Did all bottles have labels?	X	___	___
Did all bottle labels and tags agree with Chain of Custody?	X	___	___
Were samples received within hold time?	X	___	___
Did all bottles arrive in good condition (unbroken, etc.)?	X	___	___
Was sufficient amount of sample sent for the tests indicated?	X	___	___
Was correct preservation added to samples?	X	___	___

If no, Sample Control added preservative to the following: Per 5035 low kit

Sample Number	Reagent	Analyte

Were VOA vials checked for absence of air bubbles?	X	___	___
Bubbles present in sample #: None			

Temperature of cooler upon receipt: 9.5°C on Ice (Cold) Cool Ambient N/A

Explain any discrepancies: ___

Was client contacted? ___ Who was called? ___ By whom? ___ Date: ___

Outcome of call: ___

EV1605 0067

LANDAU ASSOCIATES

- [x] **Seattle/Edmonds** (425) 778-0907
- [ ] **Tacoma** (253) 926-2493
- [ ] **Spokane** (509) 327-9737
- [ ] **Portland** (503) 542-1080
- [ ] _____

Chain-of-Custody Record

Date 5/11/2016

Page 1 of 1

Project Name Bucklin Project No. 1595 001.010

Project Location/Event Ultra Custom Cleaners, Silverdale, WA

Sampler's Name Evelyn Ives

Project Contact Tim Syverson

Send Results To T. Syverson, D Frazer

Turnaround Time
- [x] Standard
- [ ] Accelerated
- [ ] _____

	Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters: HVOCs by 8260C	Observations/Comments
1	SB-2	5/11/16	1315	Aq	3	X	[x] Allow water samples to settle, collect aliquot from clear portion
2	SB-3		1430	Aq	3	X	
3	SB-5		1610	Aq	3	X	[ ] NWTPH-Dx - run acid wash silica gel cleanup
4	SB-3-(8-9)		1440	Soil	4	X	
5	SB-3-(10-11)		1450		4		[ ] Analyze for EPH if no specific product identified
6	SB-3-(12.5-13)		1500		4	X	
7	SB-4-(1-2)		1515		4	X	VOC/BTEX/VPH (soil):
8	SB-5-(3-4)		1610		4	X	[ ] non-preserved
9	SB-5-(8-9)		1615		4	X	[ ] preserved w/methanol
10	SB-1-(2.5-3.5)		1205		4	X	[ ] preserved w/sodium bisulfate
11	SB-1-(6-7)		1210		4	X	[ ] Freeze upon receipt
12	SB-2-(1.5-2.5)		1310		4	X	[ ] Dissolved metal water samples field filtered
13	SB-2-(10-11)		1300		4	X	Other _____
14	Trip Blanks	—	—	Aq	2	X	

Special Shipment/Handling or Storage Requirements: on ice

Method of Shipment: P.U. by ALS

Relinquished by	Received by	Relinquished by	Received by
Signature: Evelyn Ives	Signature: Rick Bagan	Signature:	Signature:
Printed Name: Evelyn Ives	Printed Name: Rick Bagan	Printed Name:	Printed Name:
Company: LAI	Company: ALS	Company:	Company:
Date: 5/12/16 Time: 0940	Date: 5/12/16 Time: 2:10	Date: Time:	Date: Time:

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

12/2014

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

May 5, 2016

Dylan Frazer
Landau Associates,Inc.
130 2nd Ave. South
Edmonds, WA 98020

RE: BUCKLIN HILL RD / 1595001

Dear Dylan:

Enclosed are the results of the samples submitted to our laboratory on April 21, 2016. For your reference, these analyses have been assigned our service request number P1602080.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera

By Kate Aguilera at 10:18 am, May 05, 2016

Kate Aguilera
Project Manager

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Landau Associates,Inc. Service Request No: P1602080
Project: BUCKLIN HILL RD / 1595001

CASE NARRATIVE

The samples were received intact under chain of custody on April 21, 2016 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L15-398
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-15-6
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272015-5
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Landau Associates,Inc. Service Request: P1602080

Project ID: BUCKLIN HILL RD / 1595001

Date Received: 4/21/2016

Time Received: 09:35

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
IA-1	P1602080-001	Air	4/19/2016	04:45	AS00584	-4.47	3.72	X
IA-2	P1602080-002	Air	4/19/2016	04:50	AS00993	-1.17	3.50	X
AA-1	P1602080-003	Air	4/19/2016	05:00	SSC00358	-3.76	3.50	X

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No: R60 2080

Company Name & Address (Reporting Information)
LANDAU ASSOCIATES
130 2ND AVE S
EDMONDS WA 98020

Project Name: BUCKLIN HILL RD

Project Number: 159501

Project Manager: DYLAN FRAZER

P.O. # / Billing Information: 159501.010

Phone: 425-778-0907

Fax: —

Email Address for Result Reporting: DFRAZER@LANDAUINC.com

Sampler (Print & Sign): DYLAN FRAZER

ALS Contact:

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15 (0.10 µg/m³ RL)		Comments e.g. Actual Preservative or specific instructions
IA-1	①	4/19/16	0445	15449	02310	<-30	-10		X		
IA-2	②	4/19/16	0450	20464	FCA004806	<-30	-5		X		
AA-1	③	4/19/16	0500	12172	FCA002929	<-30	-11		X		

5 of 27

Report Tier Levels - please select

Tier I - Results (Default in not specified) ____ Tier III (Results + QC & Calibration Summaries) X

Tier II (Results + QC Summaries ____ Tier IV (Date Validation Package) 10% Surcharge ____

EDD required YES / No

Type: ____ Units: ____

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	4/19/16	0930			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
FEDEX				4/21/16	0935

Cooler / Blank Temperature ____ °C

ALS Environmental
Sample Acceptance Check Form

Client: Landau Associates,Inc. Work order: P1602080

Project: BUCKLIN HILL RD / 1595001

Sample(s) received on: 4/21/16 Date opened: 4/21/16 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1602080-001.01	6.0 L Silonite Can					
P1602080-002.01	6.0 L Silonite Can					
P1602080-003.01	6.0 L Silonite Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **IA-1** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-001

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00584

Initial Pressure (psig): -4.47 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.80

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**42**	0.90	0.25	**25**	0.52	0.15	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.90	0.31	**0.36**	0.18	0.062	
74-87-3	Chloromethane	**0.28**	0.36	0.25	**0.14**	0.17	0.12	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.90	0.34	ND	0.13	0.049	
75-01-4	Vinyl Chloride	ND	0.18	0.17	ND	0.070	0.067	
106-99-0	1,3-Butadiene	ND	0.36	0.25	ND	0.16	0.11	
74-83-9	Bromomethane	ND	0.36	0.17	ND	0.093	0.043	
75-00-3	Chloroethane	ND	0.36	0.16	ND	0.14	0.059	
64-17-5	Ethanol	**66**	9.0	1.4	**35**	4.8	0.76	
75-05-8	Acetonitrile	ND	0.90	0.32	ND	0.54	0.19	
107-02-8	Acrolein	**0.84**	3.6	0.31	**0.37**	1.6	0.13	**J**
67-64-1	Acetone	**200**	9.0	1.4	**84**	3.8	0.58	
75-69-4	Trichlorofluoromethane	**0.93**	0.18	0.10	**0.17**	0.032	0.018	
67-63-0	2-Propanol (Isopropyl Alcohol)	**43**	9.0	0.76	**17**	3.7	0.31	
107-13-1	Acrylonitrile	ND	0.90	0.31	ND	0.41	0.14	
75-35-4	1,1-Dichloroethene	ND	0.18	0.17	ND	0.045	0.042	
75-09-2	Methylene Chloride	**7.6**	0.90	0.31	**2.2**	0.26	0.088	**B**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.18	0.14	ND	0.058	0.044	
76-13-1	Trichlorotrifluoroethane	**0.44**	0.18	0.14	**0.057**	0.023	0.019	
75-15-0	Carbon Disulfide	ND	9.0	0.27	ND	2.9	0.087	
156-60-5	trans-1,2-Dichloroethene	ND	0.18	0.16	ND	0.045	0.041	
75-34-3	1,1-Dichloroethane	ND	0.18	0.14	ND	0.044	0.035	
1634-04-4	Methyl tert-Butyl Ether	ND	0.18	0.17	ND	0.050	0.046	
108-05-4	Vinyl Acetate	ND	9.0	1.2	ND	2.6	0.33	
78-93-3	2-Butanone (MEK)	**5.9**	9.0	0.38	**2.0**	3.1	0.13	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **IA-1** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-001

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00584

Initial Pressure (psig): -4.47 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.80

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.18	0.17	ND	0.045	0.042	
141-78-6	Ethyl Acetate	**17**	1.8	0.63	**4.7**	0.50	0.17	
110-54-3	n-Hexane	**0.72**	0.90	0.27	**0.20**	0.26	0.077	**J**
67-66-3	Chloroform	**0.25**	0.18	0.16	**0.052**	0.037	0.033	
109-99-9	Tetrahydrofuran (THF)	ND	0.90	0.36	ND	0.31	0.12	
107-06-2	1,2-Dichloroethane	ND	0.18	0.11	ND	0.044	0.028	
71-55-6	1,1,1-Trichloroethane	ND	0.18	0.13	ND	0.033	0.024	
71-43-2	Benzene	**0.61**	0.18	0.14	**0.19**	0.056	0.045	
56-23-5	Carbon Tetrachloride	**0.41**	0.18	0.15	**0.065**	0.029	0.025	
110-82-7	Cyclohexane	**0.73**	1.8	0.52	**0.21**	0.52	0.15	**J**
78-87-5	1,2-Dichloropropane	ND	0.18	0.15	ND	0.039	0.032	
75-27-4	Bromodichloromethane	ND	0.18	0.12	ND	0.027	0.018	
79-01-6	Trichloroethene	**68**	0.18	0.16	**13**	0.034	0.030	
123-91-1	1,4-Dioxane	ND	0.90	0.29	ND	0.25	0.080	
80-62-6	Methyl Methacrylate	**22**	1.8	0.56	**5.4**	0.44	0.14	
142-82-5	n-Heptane	**0.50**	0.90	0.31	**0.12**	0.22	0.075	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	0.90	0.25	ND	0.20	0.056	
108-10-1	4-Methyl-2-pentanone	**0.50**	0.90	0.29	**0.12**	0.22	0.070	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	0.90	0.29	ND	0.20	0.063	
79-00-5	1,1,2-Trichloroethane	ND	0.18	0.14	ND	0.033	0.026	
108-88-3	Toluene	**6.3**	0.90	0.31	**1.7**	0.24	0.081	
591-78-6	2-Hexanone	ND	0.90	0.29	ND	0.22	0.070	
124-48-1	Dibromochloromethane	ND	0.18	0.15	ND	0.021	0.018	
106-93-4	1,2-Dibromoethane	ND	0.18	0.15	ND	0.023	0.020	
123-86-4	n-Butyl Acetate	**6.8**	0.90	0.29	**1.4**	0.19	0.061	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Landau Associates,Inc.**
Client Sample ID: **IA-1** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-001

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00584

Initial Pressure (psig): -4.47 Final Pressure (psig): 3.72

Canister Dilution Factor: 1.80

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.48**	0.90	0.32	**0.10**	0.19	0.069	**J**
127-18-4	Tetrachloroethene	**10**	0.18	0.13	**1.5**	0.027	0.019	
108-90-7	Chlorobenzene	ND	0.18	0.15	ND	0.039	0.032	
100-41-4	Ethylbenzene	**0.36**	0.90	0.29	**0.082**	0.21	0.066	**J**
179601-23-1	m,p-Xylenes	**1.3**	0.90	0.52	**0.31**	0.21	0.12	
75-25-2	Bromoform	ND	0.90	0.27	ND	0.087	0.026	
100-42-5	Styrene	ND	0.90	0.27	ND	0.21	0.063	
95-47-6	o-Xylene	**0.65**	0.90	0.27	**0.15**	0.21	0.062	**J**
111-84-2	n-Nonane	**0.69**	0.90	0.27	**0.13**	0.17	0.051	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.18	0.15	ND	0.026	0.022	
98-82-8	Cumene	ND	0.90	0.27	ND	0.18	0.055	
80-56-8	alpha-Pinene	**2.1**	0.90	0.25	**0.37**	0.16	0.045	
103-65-1	n-Propylbenzene	ND	0.90	0.29	ND	0.18	0.059	
622-96-8	4-Ethyltoluene	ND	0.90	0.29	ND	0.18	0.059	
108-67-8	1,3,5-Trimethylbenzene	**0.32**	0.90	0.29	**0.066**	0.18	0.059	**J**
95-63-6	1,2,4-Trimethylbenzene	**1.1**	0.90	0.27	**0.23**	0.18	0.055	
100-44-7	Benzyl Chloride	ND	0.90	0.20	ND	0.17	0.038	
541-73-1	1,3-Dichlorobenzene	ND	0.18	0.13	ND	0.030	0.022	
106-46-7	1,4-Dichlorobenzene	ND	0.18	0.14	ND	0.030	0.023	
95-50-1	1,2-Dichlorobenzene	ND	0.18	0.17	ND	0.030	0.028	
5989-27-5	d-Limonene	**100**	0.90	0.25	**18**	0.16	0.045	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.90	0.18	ND	0.093	0.018	
120-82-1	1,2,4-Trichlorobenzene	ND	0.90	0.29	ND	0.12	0.039	
91-20-3	Naphthalene	**0.80**	0.90	0.32	**0.15**	0.17	0.062	**J**
87-68-3	Hexachlorobutadiene	ND	0.90	0.25	ND	0.084	0.024	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **IA-2** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-002

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00993

Initial Pressure (psig): -1.17 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**38**	0.68	0.19	**22**	0.39	0.11	
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.68	0.23	**0.37**	0.14	0.046	
74-87-3	Chloromethane	**0.28**	0.27	0.19	**0.13**	0.13	0.092	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.68	0.26	ND	0.097	0.037	
75-01-4	Vinyl Chloride	ND	0.14	0.13	ND	0.053	0.050	
106-99-0	1,3-Butadiene	ND	0.27	0.19	ND	0.12	0.085	
74-83-9	Bromomethane	ND	0.27	0.13	ND	0.070	0.032	
75-00-3	Chloroethane	ND	0.27	0.12	ND	0.10	0.045	
64-17-5	Ethanol	**39**	6.8	1.1	**21**	3.6	0.57	
75-05-8	Acetonitrile	**0.29**	0.68	0.24	**0.17**	0.40	0.14	**J**
107-02-8	Acrolein	**1.0**	2.7	0.23	**0.43**	1.2	0.10	**J**
67-64-1	Acetone	**210**	6.8	1.0	**89**	2.8	0.44	
75-69-4	Trichlorofluoromethane	**0.97**	0.14	0.077	**0.17**	0.024	0.014	
67-63-0	2-Propanol (Isopropyl Alcohol)	**38**	6.8	0.57	**16**	2.7	0.23	
107-13-1	Acrylonitrile	ND	0.68	0.23	ND	0.31	0.11	
75-35-4	1,1-Dichloroethene	ND	0.14	0.13	ND	0.034	0.032	
75-09-2	Methylene Chloride	**7.5**	0.68	0.23	**2.2**	0.19	0.066	**B**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.14	0.10	ND	0.043	0.033	
76-13-1	Trichlorotrifluoroethane	**0.46**	0.14	0.11	**0.060**	0.018	0.014	
75-15-0	Carbon Disulfide	ND	6.8	0.20	ND	2.2	0.065	
156-60-5	trans-1,2-Dichloroethene	ND	0.14	0.12	ND	0.034	0.031	
75-34-3	1,1-Dichloroethane	ND	0.14	0.11	ND	0.033	0.026	
1634-04-4	Methyl tert-Butyl Ether	ND	0.14	0.13	ND	0.037	0.035	
108-05-4	Vinyl Acetate	ND	6.8	0.88	ND	1.9	0.25	
78-93-3	2-Butanone (MEK)	**6.2**	6.8	0.28	**2.1**	2.3	0.096	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **IA-2** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-002

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00993

Initial Pressure (psig): -1.17 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.14	0.12	ND	0.034	0.031	
141-78-6	Ethyl Acetate	**21**	1.4	0.47	**5.8**	0.37	0.13	
110-54-3	n-Hexane	**0.81**	0.68	0.20	**0.23**	0.19	0.057	
67-66-3	Chloroform	**0.27**	0.14	0.12	**0.055**	0.028	0.025	
109-99-9	Tetrahydrofuran (THF)	ND	0.68	0.27	ND	0.23	0.092	
107-06-2	1,2-Dichloroethane	ND	0.14	0.084	ND	0.033	0.021	
71-55-6	1,1,1-Trichloroethane	ND	0.14	0.10	ND	0.025	0.018	
71-43-2	Benzene	**0.66**	0.14	0.11	**0.21**	0.042	0.033	
56-23-5	Carbon Tetrachloride	**0.44**	0.14	0.12	**0.070**	0.021	0.018	
110-82-7	Cyclohexane	**0.75**	1.4	0.39	**0.22**	0.39	0.11	**J**
78-87-5	1,2-Dichloropropane	ND	0.14	0.11	ND	0.029	0.024	
75-27-4	Bromodichloromethane	ND	0.14	0.092	ND	0.020	0.014	
79-01-6	Trichloroethene	**67**	0.14	0.12	**13**	0.025	0.022	
123-91-1	1,4-Dioxane	ND	0.68	0.22	ND	0.19	0.060	
80-62-6	Methyl Methacrylate	**23**	1.4	0.42	**5.7**	0.33	0.10	
142-82-5	n-Heptane	**0.55**	0.68	0.23	**0.13**	0.16	0.056	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	0.68	0.19	ND	0.15	0.042	
108-10-1	4-Methyl-2-pentanone	**0.50**	0.68	0.22	**0.12**	0.16	0.053	**J**
10061-02-6	trans-1,3-Dichloropropene	ND	0.68	0.22	ND	0.15	0.048	
79-00-5	1,1,2-Trichloroethane	ND	0.14	0.11	ND	0.025	0.020	
108-88-3	Toluene	**9.2**	0.68	0.23	**2.5**	0.18	0.061	
591-78-6	2-Hexanone	ND	0.68	0.22	ND	0.16	0.053	
124-48-1	Dibromochloromethane	ND	0.14	0.11	ND	0.016	0.013	
106-93-4	1,2-Dibromoethane	ND	0.14	0.11	ND	0.018	0.015	
123-86-4	n-Butyl Acetate	**7.3**	0.68	0.22	**1.5**	0.14	0.045	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **IA-2** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-002

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00993

Initial Pressure (psig): -1.17 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.35

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.60**	0.68	0.24	**0.13**	0.14	0.052	**J**
127-18-4	Tetrachloroethene	**10**	0.14	0.097	**1.5**	0.020	0.014	
108-90-7	Chlorobenzene	ND	0.14	0.11	ND	0.029	0.024	
100-41-4	Ethylbenzene	**0.41**	0.68	0.22	**0.095**	0.16	0.050	**J**
179601-23-1	m,p-Xylenes	**1.5**	0.68	0.39	**0.34**	0.16	0.090	
75-25-2	Bromoform	ND	0.68	0.20	ND	0.065	0.020	
100-42-5	Styrene	ND	0.68	0.20	ND	0.16	0.048	
95-47-6	o-Xylene	**0.72**	0.68	0.20	**0.17**	0.16	0.047	
111-84-2	n-Nonane	**0.75**	0.68	0.20	**0.14**	0.13	0.039	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.14	0.11	ND	0.020	0.017	
98-82-8	Cumene	ND	0.68	0.20	ND	0.14	0.041	
80-56-8	alpha-Pinene	**1.8**	0.68	0.19	**0.32**	0.12	0.034	
103-65-1	n-Propylbenzene	ND	0.68	0.22	ND	0.14	0.044	
622-96-8	4-Ethyltoluene	**0.28**	0.68	0.22	**0.056**	0.14	0.044	**J**
108-67-8	1,3,5-Trimethylbenzene	**0.31**	0.68	0.22	**0.062**	0.14	0.044	**J**
95-63-6	1,2,4-Trimethylbenzene	**0.93**	0.68	0.20	**0.19**	0.14	0.041	
100-44-7	Benzyl Chloride	ND	0.68	0.15	ND	0.13	0.029	
541-73-1	1,3-Dichlorobenzene	ND	0.14	0.10	ND	0.022	0.017	
106-46-7	1,4-Dichlorobenzene	ND	0.14	0.10	ND	0.022	0.017	
95-50-1	1,2-Dichlorobenzene	ND	0.14	0.13	ND	0.022	0.021	
5989-27-5	d-Limonene	**40**	0.68	0.19	**7.1**	0.12	0.034	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.68	0.13	ND	0.070	0.014	
120-82-1	1,2,4-Trichlorobenzene	ND	0.68	0.22	ND	0.091	0.029	
91-20-3	Naphthalene	**0.87**	0.68	0.24	**0.17**	0.13	0.046	
87-68-3	Hexachlorobutadiene	ND	0.68	0.19	ND	0.063	0.018	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **AA-1** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-003

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00358

Initial Pressure (psig): -3.76 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	**0.68**	0.83	0.23	**0.39**	0.48	0.14	**J**
75-71-8	Dichlorodifluoromethane (CFC 12)	**1.8**	0.83	0.28	**0.37**	0.17	0.057	
74-87-3	Chloromethane	**0.24**	0.33	0.23	**0.12**	0.16	0.11	**J**
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.83	0.32	ND	0.12	0.045	
75-01-4	Vinyl Chloride	ND	0.17	0.16	ND	0.065	0.062	
106-99-0	1,3-Butadiene	ND	0.33	0.23	ND	0.15	0.11	
74-83-9	Bromomethane	ND	0.33	0.15	ND	0.086	0.040	
75-00-3	Chloroethane	ND	0.33	0.14	ND	0.13	0.055	
64-17-5	Ethanol	**18**	8.3	1.3	**9.4**	4.4	0.71	
75-05-8	Acetonitrile	ND	0.83	0.30	ND	0.49	0.18	
107-02-8	Acrolein	**0.48**	3.3	0.28	**0.21**	1.4	0.12	**J**
67-64-1	Acetone	**15**	8.3	1.3	**6.2**	3.5	0.54	
75-69-4	Trichlorofluoromethane	**0.95**	0.17	0.095	**0.17**	0.030	0.017	
67-63-0	2-Propanol (Isopropyl Alcohol)	**1.8**	8.3	0.70	**0.75**	3.4	0.28	**J**
107-13-1	Acrylonitrile	ND	0.83	0.28	ND	0.38	0.13	
75-35-4	1,1-Dichloroethene	ND	0.17	0.15	ND	0.042	0.039	
75-09-2	Methylene Chloride	**0.58**	0.83	0.28	**0.17**	0.24	0.081	**J, B**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.17	0.13	ND	0.053	0.040	
76-13-1	Trichlorotrifluoroethane	**0.45**	0.17	0.13	**0.059**	0.022	0.017	
75-15-0	Carbon Disulfide	ND	8.3	0.25	ND	2.7	0.080	
156-60-5	trans-1,2-Dichloroethene	ND	0.17	0.15	ND	0.042	0.038	
75-34-3	1,1-Dichloroethane	ND	0.17	0.13	ND	0.041	0.032	
1634-04-4	Methyl tert-Butyl Ether	ND	0.17	0.15	ND	0.046	0.043	
108-05-4	Vinyl Acetate	ND	8.3	1.1	ND	2.4	0.31	
78-93-3	2-Butanone (MEK)	**1.2**	8.3	0.35	**0.40**	2.8	0.12	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
B = Analyte detected in both the sample and associated method blank.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **AA-1** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-003

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00358

Initial Pressure (psig): -3.76 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.17	0.15	ND	0.042	0.039	
141-78-6	Ethyl Acetate	**4.8**	1.7	0.58	**1.3**	0.46	0.16	
110-54-3	n-Hexane	**0.57**	0.83	0.25	**0.16**	0.24	0.071	**J**
67-66-3	Chloroform	ND	0.17	0.15	ND	0.034	0.030	
109-99-9	Tetrahydrofuran (THF)	ND	0.83	0.33	ND	0.28	0.11	
107-06-2	1,2-Dichloroethane	ND	0.17	0.10	ND	0.041	0.025	
71-55-6	1,1,1-Trichloroethane	ND	0.17	0.12	ND	0.030	0.023	
71-43-2	Benzene	**0.59**	0.17	0.13	**0.18**	0.052	0.041	
56-23-5	Carbon Tetrachloride	**0.39**	0.17	0.14	**0.062**	0.026	0.023	
110-82-7	Cyclohexane	ND	1.7	0.48	ND	0.48	0.14	
78-87-5	1,2-Dichloropropane	ND	0.17	0.14	ND	0.036	0.030	
75-27-4	Bromodichloromethane	ND	0.17	0.11	ND	0.025	0.017	
79-01-6	Trichloroethene	**0.52**	0.17	0.15	**0.096**	0.031	0.028	
123-91-1	1,4-Dioxane	ND	0.83	0.27	ND	0.23	0.074	
80-62-6	Methyl Methacrylate	**0.87**	1.7	0.51	**0.21**	0.41	0.13	**J**
142-82-5	n-Heptane	**0.43**	0.83	0.28	**0.11**	0.20	0.069	**J**
10061-01-5	cis-1,3-Dichloropropene	ND	0.83	0.23	ND	0.18	0.051	
108-10-1	4-Methyl-2-pentanone	ND	0.83	0.27	ND	0.20	0.065	
10061-02-6	trans-1,3-Dichloropropene	ND	0.83	0.27	ND	0.18	0.059	
79-00-5	1,1,2-Trichloroethane	ND	0.17	0.13	ND	0.030	0.024	
108-88-3	Toluene	**2.2**	0.83	0.28	**0.57**	0.22	0.075	
591-78-6	2-Hexanone	ND	0.83	0.27	ND	0.20	0.065	
124-48-1	Dibromochloromethane	ND	0.17	0.14	ND	0.019	0.017	
106-93-4	1,2-Dibromoethane	ND	0.17	0.14	ND	0.022	0.018	
123-86-4	n-Butyl Acetate	**0.34**	0.83	0.27	**0.071**	0.17	0.056	**J**

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates,Inc.**
Client Sample ID: **AA-1** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P1602080-003

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 4/21/16
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00358

Initial Pressure (psig): -3.76 Final Pressure (psig): 3.50

Canister Dilution Factor: 1.66

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	**0.36**	0.83	0.30	**0.077**	0.18	0.064	**J**
127-18-4	Tetrachloroethene	**0.29**	0.17	0.12	**0.043**	0.024	0.018	
108-90-7	Chlorobenzene	ND	0.17	0.14	ND	0.036	0.030	
100-41-4	Ethylbenzene	**0.31**	0.83	0.27	**0.071**	0.19	0.061	**J**
179601-23-1	m,p-Xylenes	**1.1**	0.83	0.48	**0.26**	0.19	0.11	
75-25-2	Bromoform	ND	0.83	0.25	ND	0.080	0.024	
100-42-5	Styrene	ND	0.83	0.25	ND	0.20	0.059	
95-47-6	o-Xylene	**0.41**	0.83	0.25	**0.095**	0.19	0.057	**J**
111-84-2	n-Nonane	**0.44**	0.83	0.25	**0.085**	0.16	0.047	**J**
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.17	0.14	ND	0.024	0.020	
98-82-8	Cumene	ND	0.83	0.25	ND	0.17	0.051	
80-56-8	alpha-Pinene	**1.8**	0.83	0.23	**0.33**	0.15	0.042	
103-65-1	n-Propylbenzene	ND	0.83	0.27	ND	0.17	0.054	
622-96-8	4-Ethyltoluene	ND	0.83	0.27	ND	0.17	0.054	
108-67-8	1,3,5-Trimethylbenzene	ND	0.83	0.27	ND	0.17	0.054	
95-63-6	1,2,4-Trimethylbenzene	**0.55**	0.83	0.25	**0.11**	0.17	0.051	**J**
100-44-7	Benzyl Chloride	ND	0.83	0.18	ND	0.16	0.035	
541-73-1	1,3-Dichlorobenzene	ND	0.17	0.12	ND	0.028	0.020	
106-46-7	1,4-Dichlorobenzene	ND	0.17	0.13	ND	0.028	0.021	
95-50-1	1,2-Dichlorobenzene	ND	0.17	0.15	ND	0.028	0.026	
5989-27-5	d-Limonene	**0.75**	0.83	0.23	**0.14**	0.15	0.042	**J**
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.83	0.16	ND	0.086	0.017	
120-82-1	1,2,4-Trichlorobenzene	ND	0.83	0.27	ND	0.11	0.036	
91-20-3	Naphthalene	ND	0.83	0.30	ND	0.16	0.057	
87-68-3	Hexachlorobutadiene	ND	0.83	0.23	ND	0.078	0.022	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Landau Associates,Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P160426-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	ND	0.50	0.14	ND	0.29	0.081	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.50	0.17	ND	0.10	0.034	
74-87-3	Chloromethane	ND	0.20	0.14	ND	0.097	0.068	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.50	0.19	ND	0.072	0.027	
75-01-4	Vinyl Chloride	ND	0.10	0.095	ND	0.039	0.037	
106-99-0	1,3-Butadiene	ND	0.20	0.14	ND	0.090	0.063	
74-83-9	Bromomethane	ND	0.20	0.093	ND	0.052	0.024	
75-00-3	Chloroethane	ND	0.20	0.087	ND	0.076	0.033	
64-17-5	Ethanol	ND	5.0	0.80	ND	2.7	0.42	
75-05-8	Acetonitrile	ND	0.50	0.18	ND	0.30	0.11	
107-02-8	Acrolein	ND	2.0	0.17	ND	0.87	0.074	
67-64-1	Acetone	ND	5.0	0.77	ND	2.1	0.32	
75-69-4	Trichlorofluoromethane	ND	0.10	0.057	ND	0.018	0.010	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	5.0	0.42	ND	2.0	0.17	
107-13-1	Acrylonitrile	ND	0.50	0.17	ND	0.23	0.078	
75-35-4	1,1-Dichloroethene	ND	0.10	0.093	ND	0.025	0.023	
75-09-2	Methylene Chloride	**0.18**	0.50	0.17	**0.051**	0.14	0.049	**J**
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.10	0.076	ND	0.032	0.024	
76-13-1	Trichlorotrifluoroethane	ND	0.10	0.080	ND	0.013	0.010	
75-15-0	Carbon Disulfide	ND	5.0	0.15	ND	1.6	0.048	
156-60-5	trans-1,2-Dichloroethene	ND	0.10	0.091	ND	0.025	0.023	
75-34-3	1,1-Dichloroethane	ND	0.10	0.079	ND	0.025	0.020	
1634-04-4	Methyl tert-Butyl Ether	ND	0.10	0.093	ND	0.028	0.026	
108-05-4	Vinyl Acetate	ND	5.0	0.65	ND	1.4	0.18	
78-93-3	2-Butanone (MEK)	ND	5.0	0.21	ND	1.7	0.071	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

Client: **Landau Associates,Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1602080

Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P160426-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA

Analyst: Lusine Hakobyan Date Analyzed: 4/26/16

Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.10	0.092	ND	0.025	0.023	
141-78-6	Ethyl Acetate	ND	1.0	0.35	ND	0.28	0.097	
110-54-3	n-Hexane	ND	0.50	0.15	ND	0.14	0.043	
67-66-3	Chloroform	ND	0.10	0.089	ND	0.020	0.018	
109-99-9	Tetrahydrofuran (THF)	ND	0.50	0.20	ND	0.17	0.068	
107-06-2	1,2-Dichloroethane	ND	0.10	0.062	ND	0.025	0.015	
71-55-6	1,1,1-Trichloroethane	ND	0.10	0.074	ND	0.018	0.014	
71-43-2	Benzene	ND	0.10	0.079	ND	0.031	0.025	
56-23-5	Carbon Tetrachloride	ND	0.10	0.086	ND	0.016	0.014	
110-82-7	Cyclohexane	ND	1.0	0.29	ND	0.29	0.084	
78-87-5	1,2-Dichloropropane	ND	0.10	0.083	ND	0.022	0.018	
75-27-4	Bromodichloromethane	ND	0.10	0.068	ND	0.015	0.010	
79-01-6	Trichloroethene	ND	0.10	0.089	ND	0.019	0.017	
123-91-1	1,4-Dioxane	ND	0.50	0.16	ND	0.14	0.044	
80-62-6	Methyl Methacrylate	ND	1.0	0.31	ND	0.24	0.076	
142-82-5	n-Heptane	ND	0.50	0.17	ND	0.12	0.041	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.14	ND	0.11	0.031	
108-10-1	4-Methyl-2-pentanone	ND	0.50	0.16	ND	0.12	0.039	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.16	ND	0.11	0.035	
79-00-5	1,1,2-Trichloroethane	ND	0.10	0.080	ND	0.018	0.015	
108-88-3	Toluene	ND	0.50	0.17	ND	0.13	0.045	
591-78-6	2-Hexanone	ND	0.50	0.16	ND	0.12	0.039	
124-48-1	Dibromochloromethane	ND	0.10	0.085	ND	0.012	0.010	
106-93-4	1,2-Dibromoethane	ND	0.10	0.085	ND	0.013	0.011	
123-86-4	n-Butyl Acetate	ND	0.50	0.16	ND	0.11	0.034	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Client: **Landau Associates,Inc.**

Client Sample ID: **Method Blank** ALS Project ID: P1602080

Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P160426-MB

Test Code: EPA TO-15 Date Collected: NA

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA

Analyst: Lusine Hakobyan Date Analyzed: 4/26/16

Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.50	0.18	ND	0.11	0.039	
127-18-4	Tetrachloroethene	ND	0.10	0.072	ND	0.015	0.011	
108-90-7	Chlorobenzene	ND	0.10	0.083	ND	0.022	0.018	
100-41-4	Ethylbenzene	ND	0.50	0.16	ND	0.12	0.037	
179601-23-1	m,p-Xylenes	ND	0.50	0.29	ND	0.12	0.067	
75-25-2	Bromoform	ND	0.50	0.15	ND	0.048	0.015	
100-42-5	Styrene	ND	0.50	0.15	ND	0.12	0.035	
95-47-6	o-Xylene	ND	0.50	0.15	ND	0.12	0.035	
111-84-2	n-Nonane	ND	0.50	0.15	ND	0.095	0.029	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.10	0.084	ND	0.015	0.012	
98-82-8	Cumene	ND	0.50	0.15	ND	0.10	0.031	
80-56-8	alpha-Pinene	ND	0.50	0.14	ND	0.090	0.025	
103-65-1	n-Propylbenzene	ND	0.50	0.16	ND	0.10	0.033	
622-96-8	4-Ethyltoluene	ND	0.50	0.16	ND	0.10	0.033	
108-67-8	1,3,5-Trimethylbenzene	ND	0.50	0.16	ND	0.10	0.033	
95-63-6	1,2,4-Trimethylbenzene	ND	0.50	0.15	ND	0.10	0.031	
100-44-7	Benzyl Chloride	ND	0.50	0.11	ND	0.097	0.021	
541-73-1	1,3-Dichlorobenzene	ND	0.10	0.074	ND	0.017	0.012	
106-46-7	1,4-Dichlorobenzene	ND	0.10	0.076	ND	0.017	0.013	
95-50-1	1,2-Dichlorobenzene	ND	0.10	0.093	ND	0.017	0.015	
5989-27-5	d-Limonene	ND	0.50	0.14	ND	0.090	0.025	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.50	0.099	ND	0.052	0.010	
120-82-1	1,2,4-Trichlorobenzene	ND	0.50	0.16	ND	0.067	0.022	
91-20-3	Naphthalene	ND	0.50	0.18	ND	0.095	0.034	
87-68-3	Hexachlorobutadiene	ND	0.50	0.14	ND	0.047	0.013	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Landau Associates,Inc.**
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Project ID: P1602080

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date(s) Collected: 4/19/16
Analyst: Lusine Hakobyan Date(s) Received: 4/21/16
Sample Type: 6.0 L Silonite Canister(s) Date(s) Analyzed: 4/26/16
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P160426-MB	**93**	**105**	**104**	70-130	
Lab Control Sample	P160426-LCS	**92**	**103**	**104**	70-130	
IA-1	P1602080-001	**94**	**103**	**106**	70-130	
IA-2	P1602080-002	**92**	**102**	**107**	70-130	
AA-1	P1602080-003	**92**	**103**	**107**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Landau Associates,Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P160426-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
115-07-1	Propene	196	**203**	**104**	49-131	
75-71-8	Dichlorodifluoromethane (CFC 12)	188	**146**	**78**	65-117	
74-87-3	Chloromethane	200	**131**	**66**	48-132	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	204	**159**	**78**	65-122	
75-01-4	Vinyl Chloride	200	**163**	**82**	65-128	
106-99-0	1,3-Butadiene	206	**190**	**92**	62-143	
74-83-9	Bromomethane	202	**190**	**94**	65-130	
75-00-3	Chloroethane	200	**184**	**92**	69-126	
64-17-5	Ethanol	998	**856**	**86**	57-126	
75-05-8	Acetonitrile	212	**181**	**85**	51-134	
107-02-8	Acrolein	214	**178**	**83**	55-146	
67-64-1	Acetone	1,080	**861**	**80**	57-120	
75-69-4	Trichlorofluoromethane	216	**154**	**71**	59-139	
67-63-0	2-Propanol (Isopropyl Alcohol)	418	**331**	**79**	59-129	
107-13-1	Acrylonitrile	212	**181**	**85**	64-136	
75-35-4	1,1-Dichloroethene	216	**186**	**86**	72-123	
75-09-2	Methylene Chloride	222	**179**	**81**	63-117	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	218	**171**	**78**	50-141	
76-13-1	Trichlorotrifluoroethane	220	**184**	**84**	68-118	
75-15-0	Carbon Disulfide	210	**157**	**75**	55-143	
156-60-5	trans-1,2-Dichloroethene	210	**182**	**87**	69-129	
75-34-3	1,1-Dichloroethane	212	**173**	**82**	66-122	
1634-04-4	Methyl tert-Butyl Ether	216	**172**	**80**	55-128	
108-05-4	Vinyl Acetate	1,040	**956**	**92**	66-140	
78-93-3	2-Butanone (MEK)	220	**191**	**87**	62-127	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Landau Associates,Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P160426-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	218	**185**	**85**	65-125	
141-78-6	Ethyl Acetate	428	**374**	**87**	64-132	
110-54-3	n-Hexane	212	**172**	**81**	58-126	
67-66-3	Chloroform	224	**175**	**78**	68-117	
109-99-9	Tetrahydrofuran (THF)	220	**192**	**87**	64-123	
107-06-2	1,2-Dichloroethane	214	**169**	**79**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**170**	**81**	68-120	
71-43-2	Benzene	226	**178**	**79**	61-110	
56-23-5	Carbon Tetrachloride	230	**182**	**79**	65-137	
110-82-7	Cyclohexane	424	**354**	**83**	68-122	
78-87-5	1,2-Dichloropropane	216	**186**	**86**	67-122	
75-27-4	Bromodichloromethane	218	**183**	**84**	71-124	
79-01-6	Trichloroethene	216	**174**	**81**	71-121	
123-91-1	1,4-Dioxane	210	**191**	**91**	67-122	
80-62-6	Methyl Methacrylate	422	**366**	**87**	76-130	
142-82-5	n-Heptane	216	**181**	**84**	67-125	
10061-01-5	cis-1,3-Dichloropropene	208	**184**	**88**	73-131	
108-10-1	4-Methyl-2-pentanone	220	**191**	**87**	66-132	
10061-02-6	trans-1,3-Dichloropropene	210	**190**	**90**	76-135	
79-00-5	1,1,2-Trichloroethane	216	**183**	**85**	73-121	
108-88-3	Toluene	218	**181**	**83**	67-117	
591-78-6	2-Hexanone	220	**197**	**90**	59-128	
124-48-1	Dibromochloromethane	220	**206**	**94**	73-132	
106-93-4	1,2-Dibromoethane	218	**201**	**92**	73-128	
123-86-4	n-Butyl Acetate	226	**202**	**89**	61-136	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Landau Associates,Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1602080
Client Project ID: **BUCKLIN HILL RD / 1595001** ALS Sample ID: P160426-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 4/26/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
111-65-9	n-Octane	210	**192**	**91**	67-124	
127-18-4	Tetrachloroethene	202	**182**	**90**	65-126	
108-90-7	Chlorobenzene	220	**195**	**89**	68-120	
100-41-4	Ethylbenzene	218	**187**	**86**	69-123	
179601-23-1	m,p-Xylenes	428	**363**	**85**	67-125	
75-25-2	Bromoform	228	**210**	**92**	68-153	
100-42-5	Styrene	222	**196**	**88**	68-132	
95-47-6	o-Xylene	210	**179**	**85**	67-124	
111-84-2	n-Nonane	204	**175**	**86**	60-130	
79-34-5	1,1,2,2-Tetrachloroethane	210	**194**	**92**	72-128	
98-82-8	Cumene	208	**192**	**92**	67-124	
80-56-8	alpha-Pinene	212	**187**	**88**	67-129	
103-65-1	n-Propylbenzene	204	**177**	**87**	67-125	
622-96-8	4-Ethyltoluene	214	**185**	**86**	66-128	
108-67-8	1,3,5-Trimethylbenzene	214	**180**	**84**	65-125	
95-63-6	1,2,4-Trimethylbenzene	218	**188**	**86**	62-134	
100-44-7	Benzyl Chloride	220	**226**	**103**	74-145	
541-73-1	1,3-Dichlorobenzene	228	**204**	**89**	63-133	
106-46-7	1,4-Dichlorobenzene	208	**194**	**93**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**204**	**93**	62-134	
5989-27-5	d-Limonene	210	**191**	**91**	66-137	
96-12-8	1,2-Dibromo-3-chloropropane	218	**231**	**106**	71-147	
120-82-1	1,2,4-Trichlorobenzene	230	**224**	**97**	60-145	
91-20-3	Naphthalene	218	**202**	**93**	56-158	
87-68-3	Hexachlorobutadiene	230	**206**	**90**	56-139	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Response Factor Report GCMS-16

Method Path : I:\MS16\METHODS\
Method File : R16040416.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Apr 05 08:08:42 2016
Response Via : Initial Calibration

Calibration Files
0.08=04041620.D 0.10=04041621.D 0.20=04041622.D 0.40=04041623.D 1.0 =04041624.D 5.0 =04041625.D 25 =04041626.D
50 =04041627.D 100 =04041628.D

		Compound	0.08	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------			ISTD	----------						
2)	T	Propene				1.362	1.446	1.252	1.386	1.217	1.235	1.316	7.16
3)	T	Dichlorodifluo...	3.994	3.593	3.136	2.946	3.108	2.790	2.914	2.560	2.273	3.035	17.02
4)	T	Chloromethane		2.865	2.399	1.898	2.446	1.529	1.963	1.564	1.067	1.966	29.73
5)	T	1,2-Dichloro-1...	2.197	1.959	1.724	1.615	1.674	1.476	1.583	1.470	1.362	1.673	15.63
6)	T	Vinyl Chloride	2.713	2.443	2.175	2.095	2.233	2.012	2.195	2.035	1.876	2.197	11.40
7)	T	1,3-Butadiene		1.818	1.631	0.985	1.730	0.966	1.195	1.121	1.047	1.311	27.02
8)	T	Bromomethane	1.421	1.356	1.275	1.122	1.338	1.186	1.359	1.261	1.207	1.281	7.55
9)	T	Chloroethane	1.123	1.056	0.978	0.978	1.076	1.007	1.113	1.031	0.992	1.039	5.37
10)	T	Ethanol	1.447	1.313	1.126	0.960	1.107	0.858	1.040	0.919	0.852	1.069	19.12
11)	T	Acetonitrile				3.049	2.978	2.626	2.828	2.593	2.476	2.758	8.30
12)	T	Acrolein				0.944	0.933	0.763	0.719	0.711	0.710	0.797	14.01
13)	T	Acetone			1.185	1.112	1.073	0.972	1.013	0.858	0.740	0.993	15.38
14)	T	Trichlorofluor...	3.310	2.987	2.574	2.496	2.594	2.296	2.451	2.229	2.134	2.563	14.62
15)	T	2-Propanol (Is...	4.891	4.348	3.724	3.597	3.735	3.454	3.742	3.361	2.662	3.724	16.71
16)	T	Acrylonitrile	2.418	2.081	1.888	1.814	1.902	1.810	1.949	1.803	1.738	1.934	10.73
17)	T	1,1-Dichloroet...	1.600	1.436	1.282	1.230	1.329	1.211	1.332	1.243	1.203	1.318	9.78
18)	T	2-Methyl-2-Pro...	4.554	4.077	3.489	3.352	3.491	3.228	3.501	3.202	2.901	3.533	14.08
19)	T	Methylene Chlo...				1.857	1.593	1.289	1.374	1.279	1.206	1.433	17.24
20)	T	3-Chloro-1-pro...	2.741	2.462	2.122	1.994	2.125	1.907	2.126	1.954	1.802	2.137	13.75
21)	T	Trichlorotrifl...	1.677	1.481	1.317	1.233	1.249	1.126	1.238	1.181	1.146	1.294	13.78
22)	T	Carbon Disulfide	7.224	6.801	5.673	4.945	5.657	4.680	5.475	5.068	4.833	5.595	15.80
23)	T	trans-1,2-Dich...	2.349	2.124	1.834	1.828	1.985	1.851	2.054	1.906	1.814	1.972	9.08
24)	T	1,1-Dichloroet...	3.225	3.078	2.615	2.502	2.627	2.361	2.550	2.348	2.232	2.615	12.73
25)	T	Methyl tert-Bu...	5.572	5.113	4.209	4.059	4.113	3.758	4.051	3.744	3.541	4.240	15.80
26)	T	Vinyl Acetate	0.335	0.309	0.289	0.285	0.311	0.301	0.350	0.320	0.283	0.309	7.45
27)	T	2-Butanone (MEK)				0.919	0.930	0.861	0.939	0.873	0.834	0.893	4.76
28)	T	cis-1,2-Dichlo...	2.332	2.110	1.863	1.808	1.940	1.771	1.927	1.770	1.679	1.911	10.53
29)	T	Diisopropyl Ether	1.755	1.610	1.383	1.293	1.355	1.238	1.357	1.050	0.894	1.326	19.61
30)	T	Ethyl Acetate	0.624	0.600	0.501	0.502	0.535	0.495	0.553	0.486	0.399	0.522	12.74
31)	T	n-Hexane	3.124	2.918	2.460	2.384	2.389	2.192	2.345	2.072	1.742	2.403	17.30
32)	T	Chloroform	3.172	2.901	2.453	2.328	2.409	2.173	2.340	2.137	2.002	2.435	15.42
33)	S	1,2-Dichloroet...	1.617	1.623	1.628	1.659	1.637	1.664	1.598	1.550	1.533	1.612	2.80
34)	T	Tetrahydrofura...				0.886	0.953	0.854	0.930	0.865	0.831	0.886	5.25
35)	T	Ethyl tert-But...	2.035	1.850	1.586	1.562	1.618	1.478	1.628	1.519	1.457	1.637	11.51
36)	T	1,2-Dichloroet...	2.220	2.097	1.756	1.679	1.784	1.613	1.718	1.556	1.446	1.763	14.12
37)	IR	1,4-Difluorobenzen...	----------			ISTD	----------						
38)	T	1,1,1-Trichlor...	0.539	0.474	0.414	0.381	0.408	0.363	0.404	0.372	0.350	0.412	14.53
39)	T	Isopropyl Acetate	0.207	0.186	0.163	0.159	0.168	0.158	0.178	0.162	0.144	0.169	10.99
40)	T	1-Butanol	0.340	0.296	0.259	0.239	0.264	0.248	0.283	0.258	0.222	0.268	13.02
41)	T	Benzene	1.547	1.423	1.109	1.011	1.037	0.914	1.009	0.928	0.801	1.086	22.46
42)	T	Carbon Tetrach...	0.419	0.382	0.326	0.304	0.335	0.304	0.348	0.325	0.309	0.339	11.44

LH 4/5/16

Method Path : I:\MS16\METHODS\
Method File : R16040416.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

43)	T	Cyclohexane	0.544	0.492	0.410	0.389	0.413	0.367	0.415	0.382	0.338	0.417	15.33
44)	T	tert-Amyl Meth...	1.005	0.901	0.761	0.709	0.755	0.684	0.768	0.713	0.670	0.774	14.22
45)	T	1,2-Dichloropr...	0.343	0.327	0.274	0.259	0.281	0.250	0.280	0.261	0.247	0.280	12.01
46)	T	Bromodichlorom...	0.456	0.419	0.351	0.326	0.363	0.330	0.374	0.346	0.323	0.365	12.35
47)	T	Trichloroethene	0.454	0.378	0.315	0.299	0.315	0.277	0.313	0.295	0.283	0.325	17.29
48)	T	1,4-Dioxane	0.284	0.238	0.219	0.206	0.222	0.197	0.225	0.212	0.200	0.223	11.80
49)	T	2,2,4-Trimethy...	1.513	1.404	1.183	1.121	1.190	1.061	1.179	1.072	0.958	1.187	14.57
50)	T	Methyl Methacr...	0.146	0.135	0.111	0.108	0.115	0.106	0.122	0.115	0.106	0.118	11.69
51)	T	n-Heptane	0.340	0.317	0.269	0.255	0.264	0.238	0.264	0.246	0.229	0.269	13.63
52)	T	cis-1,3-Dichlo...	0.501	0.468	0.404	0.386	0.418	0.390	0.450	0.421	0.398	0.426	9.18
53)	T	4-Methyl-2-pen...	0.318	0.278	0.246	0.240	0.257	0.236	0.265	0.245	0.226	0.257	10.79
54)	T	trans-1,3-Dich...	0.432	0.404	0.334	0.334	0.366	0.352	0.406	0.382	0.364	0.375	9.08
55)	T	1,1,2-Trichlor...	0.335	0.310	0.267	0.250	0.269	0.239	0.271	0.255	0.242	0.271	11.81
56)	IR	Chlorobenzene-d5 (...	----------	ISTD	----------								
57)	S	Toluene-d8 (SS2)	2.284	2.289	2.291	2.294	2.271	2.256	2.269	2.276	2.284	2.279	0.54
58)	T	Toluene	3.851	3.415	2.818	2.572	2.660	2.351	2.627	2.428	2.220	2.771	19.15
59)	T	2-Hexanone	2.001	1.733	1.490	1.423	1.568	1.401	1.541	1.394	1.252	1.534	14.39
60)	T	Dibromochlorom...	0.861	0.798	0.673	0.655	0.722	0.664	0.778	0.734	0.704	0.732	9.42
61)	T	1,2-Dibromoethane	0.856	0.818	0.701	0.680	0.731	0.669	0.762	0.718	0.686	0.735	8.80
62)	T	n-Butyl Acetate	2.250	1.919	1.618	1.586	1.707	1.560	1.730	1.571	1.411	1.706	14.51
63)	T	n-Octane				0.634	0.606	0.527	0.588	0.546	0.497	0.566	9.14
64)	T	Tetrachloroethene	1.117	1.036	0.860	0.814	0.848	0.751	0.869	0.824	0.783	0.878	13.68
65)	T	Chlorobenzene	2.242	2.084	1.768	1.671	1.746	1.549	1.776	1.673	1.564	1.786	12.99
66)	T	Ethylbenzene	4.114	3.610	3.009	2.840	3.025	2.693	3.054	2.785	2.475	3.067	16.37
67)	T	m- & p-Xylenes	3.203	2.833	2.342	2.190	2.408	2.094	2.372	2.192	1.886	2.391	16.73
68)	T	Bromoform	0.744	0.716	0.596	0.579	0.647	0.627	0.774	0.740	0.704	0.681	10.33
69)	T	Styrene	2.420	2.208	1.834	1.710	1.834	1.686	1.929	1.781	1.604	1.890	13.97
70)	T	o-Xylene	3.303	2.920	2.484	2.312	2.481	2.204	2.485	2.238	1.947	2.486	16.32
71)	T	n-Nonane	1.934	1.756	1.461	1.402	1.485	1.308	1.420	1.248	1.025	1.449	18.48
72)	T	1,1,2,2-Tetrac...	1.379	1.311	1.117	1.087	1.193	1.109	1.288	1.182	1.049	1.191	9.49
73)	S	Bromofluoroben...	1.006	1.001	0.998	0.993	0.988	0.991	0.996	1.003	1.001	0.997	0.60
74)	T	Cumene			3.198	2.981	3.179	2.829	3.203	2.893	2.490	2.968	8.77
75)	T	alpha-Pinene	1.941	1.756	1.505	1.473	1.544	1.429	1.622	1.489	1.331	1.566	11.79
76)	T	n-Propylbenzene	5.082	4.454	3.799	3.606	3.920	3.500	3.926	3.488	2.879	3.850	16.30
77)	T	3-Ethyltoluene	4.016	3.801	3.103	2.876	3.165	2.789	3.091	2.892	2.581	3.146	14.97
78)	T	4-Ethyltoluene	3.650	3.329	2.880	2.678	2.924	2.628	3.032	2.610	2.100	2.870	15.60
79)	T	1,3,5-Trimethy...	3.467	3.197	2.534	2.349	2.540	2.261	2.543	2.300	1.989	2.575	18.19
80)	T	alpha-Methylst...	1.634	1.447	1.291	1.200	1.400	1.289	1.486	1.357	1.196	1.367	10.40
81)	T	2-Ethyltoluene	4.038	3.521	2.937	2.750	2.996	2.672	2.990	2.684	2.285	2.986	17.28
82)	T	1,2,4-Trimethy...	3.506	3.041	2.471	2.314	2.548	2.294	2.605	2.237	1.735	2.528	19.99
83)	T	n-Decane	1.860	1.741	1.466	1.379	1.505	1.348	1.493	1.307	1.059	1.462	16.14
84)	T	Benzyl Chloride	1.886	1.717	1.567	1.582	1.887	1.939	2.341	2.117	1.793	1.870	13.26
85)	T	1,3-Dichlorobe...	1.860	1.650	1.431	1.353	1.502	1.366	1.585	1.438	1.253	1.493	12.27
86)	T	1,4-Dichlorobe...	1.932	1.757	1.500	1.389	1.544	1.406	1.630	1.477	1.313	1.550	12.61
87)	T	sec-Butylbenzene	4.274	3.925	3.288	3.147	3.405	3.045	3.370	2.981	2.425	3.318	16.19
88)	T	4-Isopropyltol...	4.189	3.771	3.134	2.975	3.277	2.942	3.294	2.730	1.996	3.146	19.74
89)	T	1,2,3-Trimethy...	3.579	3.081	2.565	2.409	2.634	2.386	2.676	2.283	1.734	2.594	19.89
90)	T	1,2-Dichlorobe...	1.793	1.577	1.358	1.310	1.461	1.337	1.550	1.365	1.098	1.428	13.82
91)	T	d-Limonene	1.210	1.129	0.925	0.915	1.036	0.954	1.055	0.896	0.652	0.975	16.50
92)	T	1,2-Dibromo-3-...	0.505	0.427	0.397	0.404	0.494	0.495	0.610	0.578	0.543	0.495	15.17
93)	T	n-Undecane	2.096	1.826	1.475	1.418	1.590	1.419	1.590	1.392	1.119	1.547	18.10
94)	T	1,2,4-Trichlor...	1.332	1.106	0.956	0.937	1.113	1.052	1.300	1.236	1.140	1.130	12.32

Method Path : I:\MS16\METHODS\
Method File : R16040416.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

95)	T	Naphthalene	4.578	3.694	2.992	2.900	3.442	3.367	4.080	3.572	2.784	3.490	16.62
96)	T	n-Dodecane	2.103	1.571	1.277	1.239	1.551	1.412	1.575	1.317	0.946	1.443	22.10
97)	T	Hexachlorobuta...	1.034	0.826	0.692	0.648	0.719	0.668	0.813	0.775	0.719	0.766	15.36
98)	T	Cyclohexanone	1.265	1.105	0.911	0.831	0.930	0.842	0.946	0.859	0.783	0.941	16.23
99)	T	tert-Butylbenzene	3.263	2.887	2.424	2.312	2.512	2.248	2.535	2.160	1.666	2.445	18.41
100)	T	n-Butylbenzene	3.344	2.858	2.539	2.423	2.698	2.442	2.709	2.381	1.966	2.596	14.62

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File: I:\MS16\DATA\2016 04\26\04261601.D
Acq On : 26 Apr 2016 00:21 Operator: LH
Sample : CCV R16042616 25ng
Misc : S29-04131601/S29-04131604 (5/12)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 26 07:51:49 2016
Quant Method : I:\MS16\METHODS\R16040416.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Apr 05 08:08:42 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

LH 4/26/16

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	119	-0.02
2	T	Propene	1.316	1.261	4.2	108	-0.01
3	T	Dichlorodifluoromethane (CF	3.035	2.447	19.4	100	-0.01
4	T	Chloromethane	1.966	1.535	21.9	93	-0.02
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.673	1.366	18.4	102	-0.02
6	T	Vinyl Chloride	2.197	1.871	14.8	101	-0.02
7	T	1,3-Butadiene	1.311	1.219	7.0	121	-0.02
8	T	Bromomethane	1.281	1.251	2.3	109	-0.02
9	T	Chloroethane	1.039	0.988	4.9	105	-0.02
10	T	Ethanol	1.069	0.930	13.0	106	-0.09
11	T	Acetonitrile	2.758	2.521	8.6	106	-0.05
12	T	Acrolein	0.797	0.746	6.4	123	-0.04
13	T	Acetone	0.993	0.823	17.1	96	-0.05
14	T	Trichlorofluoromethane	2.563	2.085	18.7	101	-0.02
15	T	2-Propanol (Isopropanol)	3.724	3.219	13.6	102	-0.07
16	T	Acrylonitrile	1.934	1.733	10.4	105	-0.04
17	T	1,1-Dichloroethene	1.318	1.172	11.1	104	-0.02
18	T	2-Methyl-2-Propanol (tert-B	3.533	3.041	13.9	103	-0.07
19	T	Methylene Chloride	1.433	1.215	15.2	105	-0.02
20	T	3-Chloro-1-propene (Allyl C	2.137	1.755	17.9	98	-0.02
21	T	Trichlorotrifluoroethane	1.294	1.126	13.0	108	-0.02
22	T	Carbon Disulfide	5.595	4.893	12.5	106	-0.02
23	T	trans-1,2-Dichloroethene	1.972	1.780	9.7	103	-0.02
24	T	1,1-Dichloroethane	2.615	2.214	15.3	103	-0.02
25	T	Methyl tert-Butyl Ether	4.240	3.528	16.8	103	-0.02
26	T	Vinyl Acetate	0.309	0.297	3.9	101	-0.03
27	T	2-Butanone (MEK)	0.893	0.802	10.2	101	-0.03
28	T	cis-1,2-Dichloroethene	1.911	1.662	13.0	102	-0.02
29	T	Diisopropyl Ether	1.326	1.004	24.3	88	-0.02
30	T	Ethyl Acetate	0.522	0.470	10.0	101	-0.03
31	T	n-Hexane	2.403	2.024	15.8	102	-0.01
32	T	Chloroform	2.435	1.995	18.1	101	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.612	1.477	8.4	110	-0.02
34	T	Tetrahydrofuran (THF)	0.886	0.807	8.9	103	-0.02
35	T	Ethyl tert-Butyl Ether	1.637	1.421	13.2	103	-0.02
36	T	1,2-Dichloroethane	1.763	1.424	19.2	98	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	118	-0.01
38	T	1,1,1-Trichloroethane	0.412	0.343	16.7	101	-0.01
39	T	Isopropyl Acetate	0.169	0.153	9.5	102	-0.02
40	T	1-Butanol	0.268	0.247	7.8	103	-0.04
41	T	Benzene	1.086	0.872	19.7	102	-0.02
42	T	Carbon Tetrachloride	0.339	0.298	12.1	102	-0.01
43	T	Cyclohexane	0.417	0.359	13.9	102	-0.02
44	T	tert-Amyl Methyl Ether	0.774	0.669	13.6	103	-0.02
45	T	1,2-Dichloropropane	0.280	0.246	12.1	104	-0.01
46	T	Bromodichloromethane	0.365	0.318	12.9	101	-0.01
47	T	Trichloroethene	0.325	0.278	14.5	105	-0.02
48	T	1,4-Dioxane	0.223	0.195	12.6	102	-0.02
49	T	2,2,4-Trimethylpentane (Iso	1.187	1.026	13.6	103	-0.01
50	T	Methyl Methacrylate	0.118	0.106	10.2	103	-0.02
51	T	n-Heptane	0.269	0.231	14.1	104	-0.01
52	T	cis-1,3-Dichloropropene	0.426	0.391	8.2	103	-0.01
53	T	4-Methyl-2-pentanone	0.257	0.230	10.5	103	-0.02
54	T	trans-1,3-Dichloropropene	0.375	0.350	6.7	102	-0.01

Evaluate Continuing Calibration Report

Data File: I:\MS16\DATA\2016 04\26\04261601.D
Acq On : 26 Apr 2016 00:21 Operator: LH
Sample : CCV R16042616 25ng
Misc : S29-04131601/S29-04131604 (5/12)
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 26 07:51:49 2016
Quant Method : I:\MS16\METHODS\R16040416.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Apr 05 08:08:42 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	1,1,2-Trichloroethane	0.271	0.237	12.5	104	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	114	0.00
57	S	Toluene-d8 (SS2)	2.279	2.329	-2.2	117	-0.01
58	T	Toluene	2.771	2.369	14.5	103	-0.01
59	T	2-Hexanone	1.534	1.369	10.8	101	-0.02
60	T	Dibromochloromethane	0.732	0.700	4.4	103	0.00
61	T	1,2-Dibromoethane	0.735	0.693	5.7	104	-0.01
62	T	n-Butyl Acetate	1.706	1.560	8.6	103	-0.01
63	T	n-Octane	0.566	0.530	6.4	103	-0.01
64	T	Tetrachloroethene	0.878	0.809	7.9	106	-0.01
65	T	Chlorobenzene	1.786	1.610	9.9	103	0.00
66	T	Ethylbenzene	3.067	2.703	11.9	101	0.00
67	T	m- & p-Xylenes	2.391	2.071	13.4	100	-0.01
68	T	Bromoform	0.681	0.699	-2.6	103	-0.01
69	T	Styrene	1.890	1.704	9.8	101	-0.01
70	T	o-Xylene	2.486	2.161	13.1	99	-0.01
71	T	n-Nonane	1.449	1.256	13.3	101	0.00
72	T	1,1,2,2-Tetrachloroethane	1.191	1.123	5.7	99	-0.01
73	S	Bromofluorobenzene (SS3)	0.997	1.051	-5.4	120	0.00
74	T	Cumene	2.968	2.823	4.9	101	0.00
75	T	alpha-Pinene	1.566	1.429	8.7	101	0.00
76	T	n-Propylbenzene	3.850	3.415	11.3	99	0.00
77	T	3-Ethyltoluene	3.146	2.826	10.2	104	-0.01
78	T	4-Ethyltoluene	2.870	2.495	13.1	94	-0.01
79	T	1,3,5-Trimethylbenzene	2.575	2.197	14.7	99	-0.01
80	T	alpha-Methylstyrene	1.367	1.289	5.7	99	-0.01
81	T	2-Ethyltoluene	2.986	2.577	13.7	98	-0.01
82	T	1,2,4-Trimethylbenzene	2.528	2.224	12.0	97	-0.01
83	T	n-Decane	1.462	1.280	12.4	98	-0.01
84	T	Benzyl Chloride	1.870	1.891	-1.1	92	-0.01
85	T	1,3-Dichlorobenzene	1.493	1.356	9.2	98	-0.02
86	T	1,4-Dichlorobenzene	1.550	1.383	10.8	97	-0.01
87	T	sec-Butylbenzene	3.318	2.922	11.9	99	-0.01
88	T	4-Isopropyltoluene (p-Cymen	3.146	2.821	10.3	98	-0.01
89	T	1,2,3-Trimethylbenzene	2.594	2.284	12.0	97	-0.01
90	T	1,2-Dichlorobenzene	1.428	1.296	9.2	95	0.00
91	T	d-Limonene	0.975	0.916	6.1	99	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.495	0.495	0.0	93	-0.01
93	T	n-Undecane	1.547	1.348	12.9	97	0.00
94	T	1,2,4-Trichlorobenzene	1.130	0.978	13.5	86	-0.01
95	T	Naphthalene	3.490	2.939	15.8	82	-0.02
96	T	n-Dodecane	1.443	1.308	9.4	95	0.00
97	T	Hexachlorobutadiene	0.766	0.705	8.0	99	0.00
98	T	Cyclohexanone	0.941	0.846	10.1	102	-0.02
99	T	tert-Butylbenzene	2.445	2.202	9.9	99	-0.01
100	T	n-Butylbenzene	2.596	2.272	12.5	96	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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LABORATORY REPORT

May 16, 2016

Tim Syverson
Landau Associates, Inc.
130 2nd Avenue South
Edmonds, WA 98020

RE: Bucklin / 1595001.010.012

Dear Tim:

Enclosed are the results of the samples submitted to our laboratory on May 13, 2016. For your reference, these analyses have been assigned our service request number P1602491.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Kate Aguilera
By Kate Aguilera at 12:18 pm, May 16, 2016

Kate Aguilera
Project Manager

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Client: Landau Associates, Inc. Service Request No: P1602491
Project: Bucklin / 1595001.010.012

CASE NARRATIVE

The samples were received intact under chain of custody on May 13, 2016 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The three soil vapor samples did not arrive with the indoor air sample and will be logged in with a separate ALS service request number upon arrival. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Helium Analysis

The SV samples were analyzed for helium according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This method is not included on the laboratory's NELAP, DoD-ELAP, or AIHA-LAP scope of accreditation.

Volatile Organic Compound Analysis

All of the samples were analyzed for selected volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L15-398
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-15-6
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272015-5
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Landau Associates, Inc. Service Request: P1602491

Project ID: Bucklin / 1595001.010.012

Date Received: 5/13/2016

Time Received: 10:00

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans
IA-1-051116	P1602491-004	Air	5/11/2016	08:45	AC02134	-6.78	3.71	X

Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10-Day-Standard) [circled]

ALS Project No: P1602491

Company Name & Address (Reporting Information): Landau Associates, 130 2nd Avenue South, Edmonds, WA 98020

Project Name: Bucklin

Project Number: 1595001.010.012

ALS Contact:

Project Manager: Tim Syverson

P.O. # / Billing Information: 1595001.010.012

Phone: (425) 778-0907

Fax: –

Email Address for Result Reporting: tsyverson@landauinc.com

Sampler (Print & Sign): Brandon Duncan [signature]

Analysis Method

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15*	He (TCD mod.) - 3C mod.	Comments e.g. Actual Preservative or specific instructions
SV-5-051116	–	5/11/16	1200	SC00574	–	29	5	6L	x	x	
SV-6-051116	–	5/11/16	1110	SC01976	–	~~30~~ >30	5	6L	x	x	
SV-7-051116	–	5/11/16	1015	SC01669	–	28	5	6L	x	x	
IA-1-051116	–	5/11/16	0845	AC02134	FCA0097	>30	16	6L	x		1-day turnaround

* PCE, TCE, cis-1,2-DCE, vinyl chloride, benzene, carbon tetrachloride

Report Tier Levels - please select
Tier I - Results (Default in not specified) ____
Tier II (Results + QC Summaries) X
Tier III (Results + QC & Calibration Summaries) ____
Tier IV (Date Validation Package) 10% Surcharge ____

EDD required (YES) / No
Type: EIM Units: ____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	5/12/16	1215			
Fed Ex			[signature]	5/13/16	1000

Cooler / Blank Temperature ____°C

6 of 11

ALS Environmental
Sample Acceptance Check Form

Client: Landau Associates,Inc. Work order: P1602491

Project: Bucklin / 1595001.010.012

Sample(s) received on: 5/13/16 Date opened: 5/13/16 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1602491-001.01	6.0 L Source Can					
P1602491-002.01	6.0 L Source Can					
P1602491-003.01	6.0 L Source Can					
P1602491-004.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

Samples -001,-002,-003 were not received and will be logged in separately. Sample -004 requires a 1 day rush TAT.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates, Inc.**
Client Sample ID: **IA-1-051116** ALS Project ID: P1602491
Client Project ID: **Bucklin / 1595001.010.012** ALS Sample ID: P1602491-004

Test Code: EPA TO-15 Date Collected: 5/11/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 5/13/16
Analyst: Simon Cao Date Analyzed: 5/13/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02134

Initial Pressure (psig): -6.78 Final Pressure (psig): 3.71

Canister Dilution Factor: 2.32

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.23	0.22	ND	0.091	0.086	
156-59-2	cis-1,2-Dichloroethene	ND	0.23	0.21	ND	0.059	0.054	
71-43-2	Benzene	**0.58**	0.23	0.18	**0.18**	0.073	0.057	
56-23-5	Carbon Tetrachloride	**0.43**	0.23	0.20	**0.069**	0.037	0.032	
79-01-6	Trichloroethene	**4.8**	0.23	0.21	**0.89**	0.043	0.038	
127-18-4	Tetrachloroethene	**5.7**	0.23	0.17	**0.84**	0.034	0.025	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Landau Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P1602491
Client Project ID: **Bucklin / 1595001.010.012** ALS Sample ID: P160512-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 5/12/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.10	0.095	ND	0.039	0.037	
156-59-2	cis-1,2-Dichloroethene	ND	0.10	0.092	ND	0.025	0.023	
71-43-2	Benzene	ND	0.10	0.079	ND	0.031	0.025	
56-23-5	Carbon Tetrachloride	ND	0.10	0.086	ND	0.016	0.014	
79-01-6	Trichloroethene	ND	0.10	0.089	ND	0.019	0.017	
127-18-4	Tetrachloroethene	ND	0.10	0.072	ND	0.015	0.011	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Landau Associates, Inc.**
Client Project ID: **Bucklin / 1595001.010.012** ALS Project ID: P1602491

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 5/11/16
Analyst: Simon Cao Date(s) Received: 5/13/16
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 5/12 - 5/13/16
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P160512-MB	**102**	**99**	**106**	70-130	
Lab Control Sample	P160512-LCS	**101**	**97**	**108**	70-130	
IA-1-051116	P1602491-004	**100**	**99**	**108**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Landau Associates, Inc.**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1602491
Client Project ID: **Bucklin / 1595001.010.012** ALS Sample ID: P160512-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 5/12/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
75-01-4	Vinyl Chloride	200	**161**	**81**	65-128	
156-59-2	cis-1,2-Dichloroethene	218	**182**	**83**	65-125	
71-43-2	Benzene	226	**160**	**71**	61-110	
56-23-5	Carbon Tetrachloride	230	**192**	**83**	65-137	
79-01-6	Trichloroethene	216	**177**	**82**	71-121	
127-18-4	Tetrachloroethene	202	**175**	**87**	65-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.