Supplemental Remedial Investigation Report
Beckwith & Kuffel Site
1313 South 96th Street
Seattle, Washington

June 5, 2017

Prepared for

Beckwith & Kuffel, Inc.
1313 South 96th Street
Seattle, Washington 98108

LANDAU ASSOCIATES

130 2nd Avenue South
Edmonds, WA 98020
(425) 778-0907

Supplemental Remedial Investigation Report
1313 South 96th Street
Seattle, Washington

This document was prepared by, or under the direct supervision of, the technical professionals noted below.

Document prepared by: _____ Cody M. Johnson, PE
Project Manager

Document reviewed by: _____ Piper M. Roelen, PE
Quality Reviewer

Date:	June 5, 2017
Project No.:	1645001.010
File path:	P:\1645\001\R\Supplemental Remedial investigation
Project Coordinator:	Christopher C. Young

LANDAU ASSOCIATES

This page intentionally left blank.

TABLE OF CONTENTS

FIGURES

TABLE

APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

µg/L ..... micrograms per liter
ALS ..... ALS Environmental Laboratory
B&K ..... Beckwith & Kuffel, Inc.
bgs ..... below ground surface
BTEX ..... benzene, toluene, ethylbenzene, and xylenes
btoc ..... below the top of the casing
1,1-DCE 1,1-dichloroethene
c-DCE cis-1,2-dichloroethene
CKD ..... cement kiln dust
Clayton ..... Clayton Group Services, Inc.
COPC ..... contaminant of potential concern
DTW ..... depth-to-water
Ecology ..... Washington State Department of Ecology
EDC 1,2-dichloroethane
EPA ..... US Environmental Protection Agency
ESA ..... environmental site assessment
FMH ..... FMH Material Handling Solutions
ft ..... feet
HVOC ..... halogenated volatile organic compound
LAI ..... Landau Associates, Inc.
MSL ..... mean sea level
MTCA ..... Model Toxics Control Act
PCB ..... polychlorinated biphenyl
RI ..... Remedial Investigation
RGI ..... Riley Group, Inc.
SWI ..... Shannon & Wilson, Inc.
t-DCE ..... trans-dichloroethene
TCE ..... trichloroethene
TPH ..... total petroleum hydrocarbon
TPH-D ..... diesel-range total petroleum hydrocarbon
TPH-G ..... gasoline-range total petroleum hydrocarbon
TPH-O ..... heavy oil-range total petroleum hydrocarbon
USGS ..... US Geological Survey
UST ..... underground storage tank
VC ..... vinyl chloride
VOC ..... volatile organic compound
WAC ..... Washington Administrative Code

This page intentionally left blank.

1.0 INTRODUCTION

This document presents the results of the supplemental remedial investigation (RI) for the Beckwith & Kuffel, Inc. (B&K) Site (Site) located at 1313 South 96th Street in Seattle, Washington (Figure 1). The activities described in this report were conducted by Landau Associates, Inc. (LAI) to supplement RI work previously conducted by Shannon & Wilson, Inc. (SWI) as documented in its Remedial Investigation/Interim Remedial Action report (Shannon & Wilson 2014). The investigations conducted by SWI have confirmed that contamination is present in Site media, which has been reported to the Washington State Department of Ecology (Ecology) as required under the Washington State Model Toxics Control Act (MTCA; Chapter 173-340 of the Washington Administrative Code [WAC]).

This supplemental RI report describes the environmental setting for the Site and identifies the nature and extent of contamination for affected media with a focus on groundwater contamination at the southeast end of the Site identified during the previous RI explorations conducted by SWI.

1.1 Site Description and Background

The Site, registered by Ecology as FSID 3533187 with Voluntary Cleanup Program No. NW3119, is located at 1313 South 96th Street in Seattle, Washington. The Site consists of King County tax parcel 5624200351, is located in Section 5, Township 23 North, Range 4 East of the Willamette Meridian, and encompasses an area of approximately 2.3 acres. The Site vicinity consists generally of industrial and commercial properties including an asphalt plant to the west, a boat manufacturer to the south, a construction company office and storage yard to the north, a service station/auto wrecking facility to the northeast, and a community health clinic (under construction at the time of the environmental explorations) and a grocery store to the east and southeast. Figure 2 shows the Site and adjacent properties.

The Site is developed and consists of an approximately 25,000-square-foot office/shop building situated at the northeast corner of the Site and a paved storage yard and parking lot that occupies the remainder of the Site. The Site is currently owned and occupied by B&K, a pump repair and distribution company. Site features are shown on Figure 3.

1.2 Objectives of the Supplemental Remedial Investigation

The objective of the supplemental RI was to further characterize the nature and extent of halogenated volatile organic compound (HVOC) and petroleum hydrocarbon contamination in groundwater at the southeast end of the Site identified during the RI activities conducted by SWI, and to collect sufficient information regarding the contamination and Site hydrology to enable implementation of enhanced bioremediation as an interim remedial action. This report documents the information collected and the evaluations conducted to achieve this purpose.

1.3 Report Organization

This RI report is organized as follows:

- Section 2.0 presents the project background, including a summary of Site history and a description of prior environmental investigations.
- Section 3.0 describes the recent investigations conducted by LAI at the Site.
- Section 4.0 describes the Site's environmental setting.
- Section 5.0 describes the nature and extent of contamination.
- Section 6.0 presents conclusions and recommendations for implementing enhanced bioremediation at the Site.

2.0 PROJECT BACKGROUND

2.1 Site History

B&K purchased the Site in 2013. Prior to purchasing the Site, B&K contracted with SWI to complete a Phase I environmental site assessment (ESA) to identify potential environmental liabilities associated with the Site (Shannon & Wilson 2012). Based on research conducted for the Phase I ESA, the Site appears to have consisted of undeveloped land prior to 1977; however, standing water was visible across most of the Site in a 1969 aerial photograph reviewed for the ESA. This is supported by anecdotal evidence that suggests that the Site was a wetland prior to its current development. The current office/shop building and associated paved yard and parking lot were constructed in 1977. The Site was occupied by forklift maintenance companies (Clarklift of Washington and later FMH Material Handling Solutions [FMH]) until 2010, when the former occupant, Industrial Materials Handling, which had previously purchased FMH, vacated the Site.

The surrounding properties were mostly undeveloped rural or residential land until the late 1970s. The adjacent property to the south was reportedly occupied by the Seattle Packing Company from approximately 1916 until 1958, and a service station was present on the adjacent property to the east from approximately 1950 to the mid-1970s (Riley Group 2016). In the mid- to late-1970s, the Site neighborhood was developed as an industrial/commercial area. Along with construction of the building on the B&K Site in 1977, an asphalt plant was built on the adjacent property to the west around 1974; an office and shop building was constructed on the adjacent property to the south in 1975; and an office/warehouse building was constructed on the adjacent property to the north in 1978. A shopping center was constructed on the property to the east in 1986.

As discussed in the following sections, a release associated with a floor-drain collection tank located near the northwest end of the B&K Site occurred and was reported to Ecology by the Site occupant (FMH) in an environmental investigation report (Clayton Group Services 2003). Apart from this release, no known releases had occurred at the Site prior to B&K's ownership. The source of the HVOC contamination identified at the southeast end of the Site is unknown, but is suspected to be the result of spills of degreasers used during forklift maintenance activities on a cracked wash pad formerly located at the southeast corner of the Site (Shannon & Wilson 2012).

2.2 Current Site Use

The Site has been occupied by B&K since January 2013. B&K sells, distributes, and maintains pumps, blowers, and compressors. Most of the maintenance operations currently conducted at the Site occur inside the main office/shop building. Floor drains formerly used to collect spilled fluids in the shop area of the building were filled with concrete and covered prior to B&K's purchase of the building. B&K does not use chlorinated solvents in its operations. B&K has been listed as a generator of hazardous waste, but this designation was for management of investigation-derived waste generated by SWI's explorations and was not associated with their operations.

The Site is zoned industrial per King County's GIS center (King County 2016; accessed May 12, 2017). B&K currently has no plans to further develop the Site.

2.3 ENVIRONMENTAL SETTING

This section describes the topography, geology, and hydrogeology at the Site.

2.3.1 Topography

The topography of the Site and surrounding properties to the north, east, and west is generally relatively flat, with a steep hill located to south, the base of which is located at the south end of the Wooldridge Boats property. The US Geologic Survey (USGS) topographic map of the Seattle South Quadrangle (USGS 1949) indicates that the ground elevation at the Site and properties immediately to the north, east, and west are within 25 to 50 feet (ft) above mean sea level (MSL), with the top of the hill to the south at approximately 100 to 125 ft above MSL.

The Site topography including the B&K building and the south storage yards is relatively flat with a mild slope down to the west-northwest for drainage. There is a steep slope down to South 96th Street along the north end of the Site, which tapers off to the west where the access road in the northwest corner of the Site intersects with South 96th Street. The ground elevation along the north end of the B&K building is a maximum of approximately 6 ft above the South 96th Street roadway. An ecology-block retaining wall runs along the border between the Site and the SeaMar property to the east. The ground surface drops off to the east of this retaining wall to an elevation similar to the South 96th Street roadway at the north end of the Site. A similar retaining wall separates the B&K site from the Wooldridge property to the south (see Figure 2). There is an approximately 4-ft elevation difference between the Wooldridge property and the southeast end of the B&K Site. The Wooldridge property is relatively flat with a steep upward slope at the southern property boundary.

2.3.2 Geology

General geologic information for the Site was obtained from the Geologic Map of Seattle – a Progress Report (Troost et al. 2005), published by the US Geological Survey. The map indicates that the surficial geology at the Site consists of alluvium, with peat deposits immediately to the north, and recessional outwash, Hamm Creek formation, pre-Olympia fine-grained deposits, and glacial till deposits to the south. Alluvium may consist of sand, silt, gravel, and cobble deposits by streams and running water and may locally contain very soft peat lenses. Recessional outwash, which is shown between the Site and the hillside to the south, typically consists of stratified sand and gravel and less commonly silty sand and silt. The map shows an area of regraded land to the south of the Site within the area of recessional outwash, which likely coincides with the south end of the Wooldridge property. The Hamm Creek and fine-grained deposits are mapped immediately to the south of recessional outwash. The fine-grained deposits consist of silt and clay, while the Hamm Creek formation consists of interbedded gravel, sand, silt, clay, peat, and tephra beds.

2.4 Previous Investigations

A number of environmental investigations were conducted at the Site prior to LAI's involvement. A summary of these investigations is presented in the following sections. Applicable cleanup levels for contaminants detected during these investigations are provided below.

Analyte	MTCA Method A/B Groundwater Cleanup Level (µg/L)
Trichloroethene (TCE)	5
cis-1,2-Dichloroethene (c-DCE)	16[a]
Vinyl Chloride (VC)	0.3
Diesel-Range Total Petroleum Hydrocarbons (TPH-D)	500
1,2-Dichloroethane (EDC)	5
Lead	15
1,1-Dichloroethane (1,1-DCA)	7.68[a]
Arsenic	5
Polychlorinated Biphenyls	0.1

µg/L = Micrograms per liter.
[a] The values provided for c-DCE and 1,1-DCA are the MTCA Method B cleanup levels

2.4.1 Clayton Group Services

Between 2003 and 2005, Clayton Group Services, Inc. (Clayton) conducted environmental investigations at the Site on behalf of FMH. Clayton's investigations were focused on three former underground storage tanks (USTs) located near the southern property line and a floor drain collection UST formerly located near the northwestern portion of the Site.

The USTs at the south end of the site consisted of one 5,000-gallon gasoline UST and one 1,000-gallon diesel UST located in a common tank pit, and one 2,500-gallon waste oil UST located in a separate tank pit, that were all reportedly removed in 1990 (Clayton Group Services 2003). Documentation regarding removal of these USTs was reportedly prepared, but apparently not submitted to Ecology (Clayton Group Services 2003). B&K has not been provided a copy of the UST removal reports. Clayton subsequently conducted environmental explorations to evaluate whether residual contamination associated with these USTs was present at the Site. Clayton collected soil and groundwater samples from three direct-push explorations in the vicinity of the former waste oil UST (B1 through B3), and four in the vicinity of the former gasoline and diesel USTs (B4 through B7), as shown on Figure A-1 in Appendix A. The analytical sample results indicated that residual diesel-range total petroleum hydrocarbon (TPH-D) contamination was present in the soil and groundwater, and polycyclic aromatic hydrocarbon contamination was present in the soil, in the vicinity of the former gasoline and diesel USTs. TPH-D and gasoline-range total petroleum hydrocarbons (TPH-G) were also identified in the soil,

and naphthalene was identified in the groundwater in the vicinity of the former waste oil UST (Clayton Group Services 2003). None of the detected contaminant concentrations exceeded Ecology's Model Toxics Control Act (MTCA) Method A cleanup criteria in effect at that time.

2.4.2 Shannon & Wilson Investigations

SWI's Phase I ESA report (Shannon & Wilson 2012) identified *recognized environmental conditions* (as defined by ASTM International) at the Site based on the information in the Clayton reports. SWI subsequently conducted Phase II ESA activities to evaluate the potential sources of contamination associated with the *recognized environmental conditions*, and additional interim investigations and actions to follow up on environmental conditions identified during the initial Phase II ESA explorations (Shannon & Wilson 2014).

2.4.2.1 Phase II ESA

The Phase II ESA activities included installation and sampling of three groundwater monitoring wells (MW-1 through MW-3; Figure A-2 in Appendix A) to screen for residual groundwater contamination in areas in the assumed downgradient direction of the former floor drain collection UST (MW-1) and the former diesel and gasoline USTs (MW-2). MW-3 was installed to screen for potential contamination associated with forklift maintenance activities previously conducted inside the building. No contamination associated with the former USTs or previous maintenance activities was detected in the groundwater samples collected from these wells. However, during the drilling of MW-1 and MW-3, cement kiln dust (CKD) was encountered at depths of 5 to 10 ft below ground surface (bgs). Subsequent analysis of the groundwater samples collected from these wells found elevated concentrations of dissolved lead (1,510 micrograms per liter [μg/L]) and arsenic (6.67 μg/L) in the sample from MW-1 that exceeded MTCA Method cleanup levels. No other exceedances were detected in the samples.

2.4.2.2 Interim Investigations

Following completion of the Phase II ESA explorations, SWI conducted additional explorations to evaluate the extent of the CKD at the Site, delineate the extent of metals-impacted groundwater contamination associated with the CKD, and further evaluate potential contamination associated with the floor drain collection USTs identified in the northwestern portion of the Site and the waste oil UST in the southeastern portion of the Site. In 2012 and 2013, SWI advanced 19 direct-push explorations at the Site and 3 downgradient explorations to the north of the Site, installed and sampled two additional monitoring wells on the B&K property (MW-4 and MW-5), and collected groundwater samples from four wells on the adjacent SeaMar property to the east of the Site (Figures A-3 through A-6 in Appendix A). The results of these explorations are summarized below.

- The CKD fill material appeared to be limited to the northern end of the site as shown on Figure A-3 in Appendix A.

- TPH-D was present in a soil sample from an exploration near the north end of the former floor drain collection tank (GP-1) and in groundwater samples from the north end of the Site in an exploration (GP-10) located east of MW-1 and west of MW-3 at concentrations exceeding the MTCA Method A cleanup levels.
- Polychlorinated biphenyls (PCBs) were also detected in the groundwater sample collected from GP-1 at a concentration exceeding the MTCA Method A cleanup level. Post-filtering analysis found no dissolved-phase PCBs in this sample.
- TPH-D, and PCBs were not detected in groundwater samples collected from three locations (GP-11 through GP-13) downgradient to the north of the Site. Total lead concentrations in these locations exceeded the MTCA Method A cleanup level, but were well below those detected in MW-1. The dissolved lead concentrations detected in these explorations were below the MTCA Method A cleanup level.
- HVOCs, including trichloroethene (TCE), cis-1,2-dichloroethene (c-DCE), and vinyl chloride (VC), were present at concentrations exceeding MTCA Method A and B cleanup levels in groundwater samples from the southeast end of the Site (GP-6, GP-16 through GP-20, and MW-5), and extending off site to the east at least to monitoring well OS-1 on the SeaMar property. HVOCs were also detected in soil samples collected from explorations advanced at the southeast end of the Site (GP-25, GP-28, and GP-29), though only the sample collected from 4 ft bgs at GP-25 was found to contain an HVOC (TCE) at a concentration exceeding its MTCA Method A cleanup level of 0.3 milligrams per kilogram.

2.4.2.3 Interim Remedial Action

Based on the results of the explorations, it was assumed that the source of the HVOC contamination was degreasers used by the former Site occupants to clean forklift parts on a cracked wash pad at the southeast corner of the Site. In November 2013, SWI conducted an interim remedial action to remove the wash pad and excavate the underlying contaminated soil. The excavation extended to approximately 4 to 18 ft bgs within the extents shown on Figure A-7 in Appendix A. Approximately 390 tons of soil was removed during the excavation and disposed of off-site. Monitoring wells MW-4 and MW-5, which were within the excavation footprint, were decommissioned prior to conducting the excavation.

Prior to backfilling the excavation, approximately 1,100 pounds of 3DME, an electron donor product for enhancing anaerobic bioremediation, was poured into the excavation to promote biodegradation of HVOCs in groundwater. Following Site restoration, four monitoring wells (MW-6 through MW-9) were installed in or proximal to the remedial excavation footprint (Figure A-8 in Appendix A) to monitor progress of the biodegradation. Quarterly groundwater monitoring events that sampled the four newly installed monitoring wells and the four offsite wells located downgradient to the northeast on the adjacent SeaMar property (SM-MW-4 through SM-MW-7, which are referred to as OS-1 through OS-4 in the SWI reports) were conducted in February, May, and August 2014. Note that offsite wells on the SeaMar property are referred to in this report with the prefix “SM” to avoid confusion with similarly-named wells on the B&K site.

The analytical results of the samples collected during these events indicated that HVOC groundwater contamination was present at concentrations exceeding the MTCA Method A and B cleanup levels as summarized below:

- The groundwater samples collected from MW-6 contained TCE at concentrations ranging from 18.9 to 88.6 μg/L, all of which exceeded the MTCA Method A cleanup level of 5 μg/L. Concentrations of c-DCE were also detected in the samples from this well ranging from 2.17 to 2.99 μg/L, which are below the MTCA Method B cleanup level of 16 μg/L. VC was not detected in any of the samples from this well.
- The samples collected from MW-7 contained c-DCE at concentrations ranging from 30.0 to 297 μg/L, which exceeded the MTCA Method B cleanup level, and VC from 8.19 to 95.8 μg/L, which exceeded the MTCA Method A cleanup level 0.2 μg/L. 1,2-Dichloroethane (EDC) was also detected in this well at a maximum concentration of 15.7 μg/L, which exceeded the MTCA Method A cleanup level of 5 μg/L, during the February 2014 sampling event. TCE was also detected in this well at a maximum concentration of 1.94 μg/L, which is below the MTCA Method A cleanup level. It should be noted that the contaminant concentrations decreased each quarter at this well. This is likely due to the proximity of this well to the 3DME application area (Shannon & Wilson 2014).
- The samples collected from MW-8 contained TCE at concentrations ranging from 558 to 878 μg/L, and c-DCE at 22.1 to 32.0 μg/L, which exceeded their respective MTCA Method A or B cleanup levels. VC was not detected in the any of the samples from this well.
- The samples collected from MW-9 contained TCE at concentrations ranging from 137 to 275 μg/L, all of which exceeded the MTCA Method A cleanup level. Concentrations of c-DCE were also detected in the samples from this well ranging from 6.17 to 9.62 μg/L, which were below the MTCA Method B cleanup level.

Groundwater monitoring was suspended by SWI after the August 2014 groundwater monitoring event. It was intended that the sampling frequency would be reduced from quarterly to semiannually until significant reductions or rebound in contaminant concentrations were observed in samples collected from the HVOC plume area.

2.4.3 SeaMar Site Investigations

In March 2016, the Riley Group Inc. (RGI) conducted environmental explorations at the adjacent SeaMar property to the east of the B&K Site. According to RGI's Phase II Subsurface Investigation Report (Riley Group 2016), these explorations were conducted following a Phase I ESA that identified a former service station at the north end of the SeaMar property, a residential heating oil tank at the south end of the SeaMar property, and the HVOC plume at the B&K Site as potential sources of contamination for the SeaMar property. RGI's explorations included sampling the existing onsite monitoring wells (including SM-MW-4 through SM-MW-7), installation of three new monitoring wells including one (SM-MW-8) in the vicinity of the HVOC plume, and advancing and sampling four Geoprobes® (Figure B-1 in Appendix B). Nine groundwater samples were collected during this investigation. Samples collected from two wells, SM-MW-4 and SM-MW-8, indicated that HVOCs were

present in groundwater along the property boundary with the B&K Site near the former wash pad as summarized below.

- The sample from SM-MW-4, located approximately 45 ft northeast of MW-8, was found to contain VC at a concentration of 4.6 μg/L, which exceeded the MTCA Method A cleanup level (0.3 μg/L) and c-DCE at a concentration of 7.4 μg/L, which is below the MTCA Method B cleanup level (16 μg/L). TCE was not detected in the sample. TPH-D was detected in the sample at 52 μg/L, which is below the MTCA Method A cleanup level (500 μg/L).
- The sample from SM-MW-8, located approximately 15 ft northeast of MW-7, contained TCE at a concentration of 20 μg/L, which exceeded the MTCA Method A cleanup level (5 μg/L), and c-DCE at 5.5 μg/L, which was below the MTCA Method B cleanup level. VC was not detected in the sample. TPH-D was detected in the sample at 80 μg/L, which is below the MTCA Method A cleanup level.

In May 2016, RGI installed and sampled two new wells, SM-MW-14 and SM-MW-15, to the north-northeast of the former wash pad to evaluate the extent of the HVOC contamination detected in SM-MW-4 and SM-MW-8. SM-MW-14 was installed approximately 45 ft east-northeast of MW-7 and SM-MW-15 was installed approximately 25 ft east of SM-MW-8. HVOCs were not detected in either of the samples collected. RGI collected additional groundwater samples from SM-MW-4 (OS-1), SM-MW-8, SM-MW-14, and SM-MW-15 on June 30, 2016. The results are summarized below.

- The sample from SM-MW-4 contained VC at a concentration of 4.9 μg/L, which exceeded the MTCA Method A cleanup level. TCE was detected in this sample at a concentration of 3.9 μg/L, which is below the MTCA Method A cleanup level. C-DCE was also detected in this sample at a concentration of 16 μg/L, which is equal to the MTCA Method B cleanup level.
- The sample from SM-MW-8 contained TCE at a concentrations of 33 μg/L, which exceeded the MTCA Method A cleanup level. C-DCE was also detected in this sample at 7.0 μg/L, which is below the MTCA Method B cleanup level. VC was not detected in the sample.
- The samples from SM-MW-14 and SM-MW-15 did not contain detectable concentrations of HVOCs.

In July 2016, RGI installed and sampled two more wells, SM-MW-17 and SM-MW-18, to evaluate the northern and southern extent, respectively, of the HVOC contamination on the SeaMar property. SM-MW-17 was installed approximately 20 ft north of SM-MW-4 (OS-1). SM-MW-18 was installed approximately 45 ft south of SM-MW-8 and 15 ft northeast of MW-6. The results are summarized below.

- The sample from SM-MW-17 did not contain detectable concentrations of HVOCs.
- The sample from SM-MW-18 contained TCE at a concentration of 130 μg/L, which exceeded the MTCA Method A cleanup level, and c-DCE at 15 μg/L, which is below the MTCA Method B cleanup level. VC was not detected in the sample.

In September 2016, RGI installed and sampled two additional monitoring wells, SM-MW-19 and SM-MW-20, to evaluate the southern extent of the HVOC contamination on the SeaMar property.

SM-MW-19 was installed approximately 40 ft south of SM-MW-18, and SM-MW-20 was installed approximately 40 ft south of SM-MW-19. At this time, RGI also collected groundwater samples from the SeaMar wells near the property boundary (SM-MW-14, SM-MW-15, and SM-MW-18 through SM-MW-20), and was given access to sample B&K monitoring wells MW-6 through MW-8. The results of groundwater samples collected from these wells are summarized below:

- The sample from MW-6 contained TCE at a concentration of 16 μg/L, which exceeded the MTCA Method A cleanup level. VC and c-DCE were not detected in this sample.
- The sample from MW-7 contained TCE, EDC, and VC at 300 μg/L, 5.6 μg/L, and 3.3 μg/L, respectively, all of which exceeded their respective MTCA Method A cleanup levels. C-DCE was also detected in this sample at 50 μg/L, which exceeded the MTCA Method B cleanup level.
- The sample from MW-8 contained TCE at a concentration of 62 μg/L, which exceeded the MTCA Method A cleanup level, and c-DCE at 8.3 μg/L, which is below the MTCA Method B cleanup level. VC was not detected in this sample.
- The sample from SM-MW-18 contained TCE at 2.1 μg/L, which is below the MTCA Method A cleanup level. VC and c-DCE were not detected in this sample.
- The samples collected from SM-MW-14, SM-MW-15, SM-MW-17, and SM-MW-20 had no detectable concentrations of HVOCs. 1,1-Dichloroethane (1,1-DCA) was detected in the sample collected fromSM-MW-19 at a concentration of 1.6 μg/L, which is below the MTCA Method B Cleanup level of 7.68 μg/L.

The boring logs for the recent RGI explorations are included as Figures B-2 through B-6 in Appendix B. RGI has not conducted any further groundwater sampling in the vicinity of the HVOC plume.

3.0 GROUNDWATER INVESTIGATION

Following receipt of the RGI data, LAI initiated a groundwater investigation at the Site. The groundwater investigation was implemented in three stages to assess the nature and extent of groundwater contamination at the south end of the Site, and to evaluate Site hydrogeology. The scope of the groundwater investigation is described below, separated into three stages:

- **Stage 1**: Initial investigation to evaluate current groundwater conditions based on samples and depth-to-water (DTW) measurements from existing monitoring wells on the B&K Site and the SeaMar property.
- **Stage 2**: Groundwater sampling from direct-push borings to evaluate the lateral and vertical extent of the HVOC plume.
- **Stage 3**: Groundwater sampling from direct-push borings to evaluate the upgradient extent of the HVOC plume based on the Stage 1 and 2 results.

The data collected during the investigations conducted by SWI indicated that HVOC and total petroleum hydrocarbon (TPH) contamination was present in the groundwater at the southeast end of the Site in the vicinity of the former wash pad. However, the lateral extent of the contamination was unknown. The sampling results at MW-9 suggested that the HVOC plume likely extended farther north, potentially to underneath the B&K building. The results from the SeaMar well sampling indicated that while the HVOC plume had migrated to the east onto the SeaMar property, it appeared to be limited to within approximately 20 ft of the property boundary. The western and southern extents of the HVOC plume were mostly unexplored, though the lower HVOC concentrations at MW-6 compared to those at MW-8 and MW-9 suggested that the plume would quickly taper off to the south. The vertical extent of the HVOC contamination was likewise poorly understood. No HVOCs were detected in the sample collected from MW-4, which was screened within a deeper water-bearing zone than the other wells at the B&K Site, but no other groundwater samples had been collected from below 15 ft bgs.

Additional explorations were therefore conducted to assess the extent of HVOC and TPH groundwater contamination, and to collect additional geologic data to better evaluate the Site's geologic setting and the continuity of a silt/clay aquitard unit identified by SWI.

3.1 Stage 1 Investigation

The initial investigation was conducted to gain a better understanding of current Site conditions with respect to HVOC and TPH contamination at the south end of the Site and included:

- Collecting groundwater samples from the wells at the B&K Site that were not sampled by RGI in September 2016 (MW-1 through MW-3 and MW-9).
- Taking DTW measurements at all accessible wells at the B&K Site and the SeaMar property so that accurate groundwater elevation iso-contours could be developed and groundwater flow direction and gradients could be evaluated.

On November 29, 2016, LAI collected groundwater samples from B&K monitoring wells MW-1 through MW-3 and MW-9. Prior to collecting groundwater samples from the wells, field personnel purged the wells to induce groundwater flow into the wells that was representative of the surrounding formation. Low-flow groundwater purging and sampling was conducted using a peristaltic pump with dedicated tubing until groundwater parameters (e.g., pH, conductivity, temperature, and oxidation reduction potential) stabilized. The purge water generated by the sampling was placed in a storage drum on Site for future disposal.

Groundwater samples were collected directly into laboratory-supplied containers. Containers for groundwater samples for volatile organic compound (VOC) analysis were completely filled so that no headspace remained. Samples were placed in coolers and packed in ice to keep samples at approximately 4°C for delivery to the laboratory.

The samples were submitted to ALS Environmental (ALS) of Everett, Washington. Each sample was analyzed for HVOCs by US Environmental Protection Agency (EPA) Method 8260. The samples from MW-2 and MW-9 were also analyzed for TPH-D and heavy oil-range total petroleum hydrocarbons (TPH-O) by the Northwest Total Petroleum Hydrocarbon (NWTPH) diesel-range extended method (Dx) to screen for the presence of the petroleum hydrocarbon contamination previously detected at the south end of the Site.

3.1.1 Stage 1 Results

HVOCs were not detected in the samples from MW-1 through MW-3. The sample from MW-9 was found to contain TCE at a concentration of 78 µg/L, which exceeds the MTCA Method A cleanup level, and c-DCE at 12 □g/L which is below the MTCA Method B cleanup level. TPH-D and TPH-O were not detected in the samples collected from MW-2 and MW-9. The sampling results are summarized in Table 1 and shown on Figure 4. The analytical laboratory reports are provided in Appendix D.

DTW measurements were taken at the seven B&K wells (MW-1 through MW-3 and MW-6 through MW-9) and from eight wells on the SeaMar property (SM-MW-2, SM-MW-3, SM-MW-11, SM-MW-12, SM-MW-15, and SM-MW-18 through SM-MW-20). The remaining SeaMar wells were not locatable due to extensive construction being conducted at the time of the LAI investigation. Groundwater elevation contours were developed from the DTW measurements and the top-of-casing elevations for the wells provided by RGI. The groundwater elevation contours based on this sampling event are shown on Figure 5 and show the groundwater gradient to generally be to the north-northeast. It should be noted that the groundwater elevation at MW-6 was lower than the nearby downgradient wells. The reason for this is unclear, but it may indicate a sink or localized groundwater divide.

3.2 Stage 2 Investigation

Stage 2 of the investigation was conducted to evaluate the lateral and vertical extent of the HVOC contamination, to evaluate the extent and potential source of the TPH-D contamination, and to gain a

better understanding of Site hydrogeology. The initial explorations included advancing 14 direct-push borings (LB-1 through LB-14 on Figure 4) using a truck-mounted Geoprobe direct-push rig for the purposes described below.

- LB-1 through LB-4 were located to the north-northeast and downgradient of MW-9, which was the northernmost exploration within the HVOC plume footprint. These borings were placed on approximate 25-ft-centers (aligned east to west) and sampled at approximately 10 to 12 ft bgs and 25 ft bgs to evaluate the lateral and vertical extent of the plume to the north of MW-9, and to assess the downgradient extent of the TPH contamination (if present).
- LB-5 through LB-8 were located to the west of the known extent of the HVOC plume and to the north-northeast of the gasoline and diesel USTs formerly located at the south end of the yard. These explorations were conducted to evaluate the western extent of the HVOC plume and to assess whether the previously detected TPH-D contamination was associated with the former USTs. These borings were sampled at the groundwater interface at approximately 10 to 12 ft bgs.
- LB-9 and LB-10 were located upgradient to the southeast and southwest of MW-6, which represented the known southern extent of the HVOC plume. Both locations were advanced on property owned by Wooldridge Boats by permission of Mr. Glenn Wooldridge, the company owner. LB-9 was sampled at approximately 12 ft bgs and 25 ft bgs. The ground surface at LB-10 was approximately 4 ft higher than at LB-9 and the B&K Site, and was sampled at approximately 15 ft and 30 ft bgs to evaluate the upgradient lateral and vertical extent of the plume.
- LB-11 through LB-13 were advanced to evaluate the continuity of the silt/clay aquitard identified by SWI at approximately 35 ft bgs at former monitoring well location MW-4. No groundwater samples were collected from these borings. The groundwater sample data from MW-1 through MW-3 collected during Stage 1 of the investigation were used to confirm that HVOCs that could be drawn down into a deeper aquifer by the deeper borings were not present in the shallow groundwater at these locations.
- LB-14 was advanced downgradient of borings LB-1 through LB-4. Groundwater samples were collected from LB-14, but held at the laboratory pending the results of the LB-1 through LB-4 samples to determine if analysis was needed to determine the downgradient extent of HVOC contamination.

Each groundwater grab sample was collected using a groundwater sampler consisting of a 4-ft-long, wire-wrapped, stainless steel screen (0.010-inch slot size) with a retractable protective steel sheath. For each sample, the groundwater sampler was advanced to the sample depth and the protective sheath was retracted to expose the stainless steel screen to the formation. Low-flow purging and sampling was then conducted for approximately 10 minutes or until the sample point purged dry. During purging, pH, conductivity, dissolved oxygen, oxidation reduction potential, and temperature were measured using a YSI 556 MPS water multi-parameter meter equipped with a flow-through cell. At the conclusion of the purging process, these parameters were measured and recorded. In the case where a sample point purged dry, pumping was halted for 5 minutes to allow the point to recharge. It was then pumped dry again, allowed to recharge, and then sampled. Due to the low volume of water

available at these locations, parameters were not recorded for samples where the location purged dry.

The groundwater samples were collected into the appropriate sample containers using disposable polyethylene tubing and a peristaltic pump. A pumping rate below approximately 100 milliliters per minute was maintained to prevent degassing during sampling for VOCs.

3.2.1 Stage 2 Results

Each groundwater sample collected during Stage 2 of the investigation was submitted to ALS and analyzed for HVOCs by EPA Method 8260. Additionally, the shallow samples collected from LB-1 through LB-4 and the samples from LB-5 through LB-8 were analyzed for TPH-D, TPH-O, and TPH-G by the NWTPH methods. The results are discussed below, shown on Figure 4, and summarized in Table 1. The analytical laboratory reports are provided in Appendix D.

- VC was detected in the shallow groundwater (6 to 10 ft bgs) sample collected from LB-1 at a concentration of 0.41 µg/L, which exceeds the MTCA Method A cleanup level (0.3 µg/L). HVOCs were not detected in any of the other shallow or deep groundwater samples collected from LB-1 through LB-4. TPH-D was detected in the shallow sample collected from LB-4 at a concentration of 170 µg/L, and TPH-O was detected in the shallow sample collected from LB-1 at a concentration of 390 µg/L, both of which are below their respective MTCA Method A cleanup level of 500 µg/L.
- TCE was detected at a concentration of 2.6 µg/L in the groundwater sample collected from LB-8, which is below the MTCA Method A cleanup level. No other HVOCs were detected in the samples collected from LB-5 through LB-8. Petroleum hydrocarbons were not detected in any of the groundwater samples collected from these explorations.
- TCE and c-DCE were detected in the shallow groundwater sample collected from LB-9 at concentrations of 69 µg/L and 16 µg/L, respectively, which are above and equal to their respective MTCA Method A cleanup levels. The compounds 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene (1,1-DCE), and 1,1-DCA were also detected in this sample at concentrations of 3.2 µg/L, 2.3 µg/L, and 6.2 µg/L, respectively. These concentrations were below their respective Method B cleanup levels of 200 µg/L, 7 µg/L, and 7.68 µg/L. TCE and c-DCE were also detected in the deeper groundwater sample collected from LB-9 at concentrations of 5.4 µg/L (which exceeds the MTCA Method A cleanup level) and 2.8 µg/L, respectively. VC was not detected in either of the samples from LB-9.
- TCE, c-DCE, and VC were detected in the shallow groundwater sample collected from LB-10 at 1,100 µg/L, 200 µg/L, and 0.60 µg/L, respectively, each of which exceeded their MTCA Method A or Method B cleanup levels. Trans-DCE (t-DCE) and 1-1 DCE were also detected in this sample at 5.1 µg/L and 3.1 µg/L, respectively. The t-DCE and 1,1-DCE concentrations were below their respective MTCA Method B cleanup levels of 160 µg/L and 7.68 µg/L. TCE was also detected in the deeper groundwater sample collected from LB-10 at a concentration of 5.9 µg/L.

Soil samples from LB-11, LB-12, and LB-13 were collected and logged continuously to depths of 40, 30, and 45 ft bgs, respectively. As shown on the boring logs provided in Appendix C, similar geology was

encountered in LB-11 and LB-13, both of which were located at the north end of the Site. The soils encountered in these borings consisted of silt, clay, and sand (and CKD in LB-11) fill material to approximately 10 ft bgs. Peat and a layer of organic silt and clay were present below the fill to approximately 15 to 17 ft bgs. An approximately 5-ft-thick layer of brown silty clay was encountered below the organic clay in both borings. Dark gray silt, grading to silty sand with abundant shell fragments, and then to poorly graded fine silty sand, was encountered beneath the brown clay to a depth of approximately 32 ft bgs in both borings. The bottom 8 ft of LB-11 consisted of gray silt and clay. These units were also encountered in LB-12 to a similar depth where they were underlain by a well-graded sand. Saturated conditions were observed in the marine clay/sand and the underlying sand layer with the underlying silt and clay units appearing to act as a confining layer as the sand layer encountered beneath these units in LB-13 was moist, but not saturated.

Similar to LB-11 and LB-13, sand, silt, and clay fill soil was present in the upper 10 ft in LB-12. The fill at this location was underlain by interbedded layers of silt and clay to the bottom of the boring. The clay layer directly beneath the fill contained trace to occasional organics; otherwise no indications of the peat and/or organic silt and clay were encountered in this boring. Saturated conditions were encountered only in the lower portion of the fill in this boring.

3.3 Stage 3 Investigation

Stage 3 of the investigation was conducted to evaluate the upgradient extent of the HVOC contamination detected in LB-10. The analytical results for the shallow groundwater sample from LB-10, which showed significantly higher HVOC concentrations than the next downgradient sample location at MW-6, were unexpected and indicated a potential upgradient and off-property source of contamination, or plume migration against the prevailing groundwater gradient. In order to understand the upgradient extent of the plume, additional probes were advanced to the south of LB-10 on the Wooldridge property under two mobilizations.

On January 28, 2017, LAI advanced and sampled three direct-push borings: LB-15 through LB-17. These borings were located to the south and southwest of LB-10 to evaluate the upgradient extent of HVOC contamination. Each boring was advanced to 30 ft bgs. Groundwater samples were collected at approximately 15 ft bgs (screen length from 11 to 15 ft bgs) and 30 ft bgs (screen length from 26 to 30 ft bgs). Soil from LB-15 and LB-17 was also sampled continuously for geologic logging. Based on the results of the samples collected from these locations, which indicated a decreasing HVOC trend to the south-southwest (discussed below), a second mobilization was conducted to further delineate the upgradient extent of the plume. On March 12, 2017, LAI advanced four borings (LB-18 through LB-21) to the south and southeast of LB-15. Groundwater samples were collected from these locations in a similar manner to LB-15 through LB-17. Soil from LB-18 was also sampled continuously for geologic logging.

3.3.1 Stage 3 Results

Each groundwater sample collected during Stage 3 of the investigation was submitted to ALS and analyzed for HVOCs by EPA Method 8260. The results indicated a decreasing trend in HVOC contamination to the south, as described below and shown on Figure 4. The results are summarized in Table 1 and the analytical laboratory reports are provided in Appendix D.

- The laboratory results for the shallow groundwater sample collected from LB-15, located approximately 30 ft upgradient to the south of LB-10, identified concentrations of TCE, c-DCE, and VC at 370 µg/L, 170 µg/L, and 0.24 µg/L, all of which exceed their respective MTCA Method A or B cleanup levels. HVOCs were not detected in the deeper groundwater sample.
- The laboratory results for the shallow groundwater sample collected from LB-16, located approximately 40 ft southwest of LB-10, identified TCE and c-DCE at concentrations of 8.2 µg/L and 2.4 µg/L. The TCE concentration exceeded the MTCA Method A level, but the c-DCE level was below the MTCA Method B cleanup level. HVOCs were not detected in the deeper groundwater sample.
- The laboratory results for the shallow groundwater sample collected from LB-17, located approximately 60 ft west-southwest of LB-10, identified TCE and c-DCE at concentrations of 3.3 µg/L and 2.3 µg/L, respectively, both of which were below their respective MTCA Method A or B cleanup levels. HVOCs were not detected in the deeper groundwater sample.

Based on the groundwater HVOC results for LB-15, which were significantly lower than at LB-10, but still exceeded cleanup criteria, LB-18 and LB-19 were drilled approximately 30 ft upgradient to the south of LB-15 and LB-16, respectively. Borings LB-20 and LB-21 were drilled approximately 30 ft farther to the south of LB-18 and LB-19, respectively.

- TCE and c-DCE were detected in the shallow groundwater sample from LB-18 at 76 µg/L and 13 µg/L, respectively. The TCE result exceeded the MTCA cleanup level, while the c-DCE did not. TCE was detected in the deeper groundwater sample at a concentration of 3.7 µg/L, which was below the MTCA Method A cleanup level.
- HVOCs were not detected in the other groundwater samples analyzed.

Similar geology was encountered in LB-15, LB-17, and LB-18. Shallow silty or poorly graded fine sandy fill was present at each boring to 4 to 6 ft bgs. Beneath the sandy fill material, the geology consisted of interbedded layers of silt and clay. A sand unit was encountered at 30 and 28 ft bgs in LB-15 and LB-18, respectively. Saturated conditions were observed in a thin (approximately 1- to 2-ft-thick) silt/clay layer approximately 12 to 15 ft bgs in each boring. The deep sand layer also appeared to be saturated.

4.0 SUMMARY OF GEOLOGIC/HYDROGEOLOGIC FINDINGS

4.1 Geology

Geologic logging has been conducted at multiple explorations at the Site and the Wooldridge property by LAI and SWI. Much of both properties is covered with asphalt pavement or buildings, which is underlain by several feet, in some cases, of sand, silt, and clay fill, with portions of the north end also filled with CKD. At the north end of the Site, the fill material is underlain by up to 10 ft of peat and organic silt and clay. This unit decreases in thickness to the south and appears to pinch out approximately 170 ft south of the north property boundary. The presence of the peat and organic soils at the north end of the Site is consistent with the 1949 USGS Seattle South topographic map (USGS 1949), which shows a depression at the north end of the Site, and the 1969 aerial photograph, which reportedly shows standing water across most of the Site (Shannon & Wilson 2012). This may indicate that the peat deposits shown ending to the north of South 96th Street on the geologic map extend farther to south and onto the Site. The soils beneath the peat and organic soil on the north end, and the fill on the south end, of the Site consist of interbedded silts and clays with occasional silty sand layers. A thin layer of dark gray marine silt and sand with shell fragments was also identified between the organic soil and the underlying silt and clay in explorations along the north property boundary (LB-11 and LB-13). The silt and clay unit ranged in thickness from 6 ft at the north end of the Site, to 25 ft in LB-15 on the Wooldridge property. A sandy unit consisting of silty sands to poorly-graded medium to fine sands was identified beneath the silt and clay units at the east end of the Site at thicknesses of 8 to 9 ft in LB-13, GP-23, and MW-4. This unit was also encountered at LB-11 at a similar thickness to LB-13 (approximately 8 ft), and appeared to also be present as far south as LB-15, in which poorly-graded sand was found to be present at 27 to 30 ft bgs. The sand unit was not encountered in LB-12. A dense, low-permeability silt unit, identified by SWI as a likely aquitard, was encountered beneath the sand layer at LB-13, GP-23, and MW-4. This silt unit was also present at LB-12 at a similar depth to MW-4.

Generalized geologic cross sections through the Site are provided on Figures 7 through 10, which depict the approximate elevations of significant geologic contacts observed during the explorations at the Site. The alignment of the geologic cross sections is shown on Figure 6. The locations of the cross-section alignments were selected to show the differing subsurface geology at the north and south ends of the Site as well as the north-south continuity of the lower sand and silt units along the east end of the Site in the vicinity of the HVOC contaminant plume.

4.2 Hydrogeology

As discussed above, the Site geology consists of alternating layers of fine-grained (silt and clay) and coarse-grained (sand and gravel) soils. Saturated conditions were generally encountered within the upper 8 to 10 ft at most explorations, typically within the silt/clay underlying the fill. A saturated sand unit is present below the silt/clay that is likely hydraulically connected to the water-bearing zones within the silt unit.

The depth to groundwater measured in Site and SeaMar wells in November 2016 varied from 1.61 ft below the top of the casing (btoc) at SM-MW-2 to 7.79 ft btoc in MW-6 (it should be noted that MW-6 is located within a newly constructed equipment cleaning area with an approximately 2-ft-thick foundation, so the depth to water at that location does not accurately reflect the groundwater depth relative to the surrounding ground surface). This likely indicates that the upper water-bearing zone is under confined, or semi-confined, conditions as the potentiometric surface represented by the groundwater elevations in the wells are typically higher than the depths at which saturated conditions were encountered in soil borings during drilling. An upward vertical gradient between the silt/clay unit and the sand unit would also tend to retard downward contaminant migration resulting in lower contaminant concentrations in the deeper saturated zone. The sand unit is separated from a second water-bearing sand formation by a second silt and clay unit. MW-4 is the only monitoring well at the B&K and SeaMar properties that was screened in the lower saturated zone. Depth-to-groundwater measurements at MW-4, and MW-5, which was located approximately 5 ft north of MW-4 and was screened in the upper water-bearing zone, were taken on September 25, 2013 during a groundwater monitoring event. The depth-to-groundwater at these wells were 4.28 ft btoc at MW-4 and 4.31 ft btoc at MW-5. The well construction notes indicate that the top of the casing at MW-4 was 0.40 ft bgs, and 0.44 ft bgs at MW-5. Assuming similar ground surface elevations at the two wells, this would indicate that the potentiometric surface elevation at MW-4 was 0.07-ft higher than at MW-5, which would suggest a slight upward vertical hydraulic gradient between the two water-bearing sand units.

Based on the groundwater elevation data collected in November 2016, groundwater flow in the upper water-bearing zone is generally to the north-northeast, as shown on Figure 5. This is consistent with the surface topography and the presence of the Duwamish Waterway to the east. Because only one well at the Site has been screened in the lower water-bearing zone, the flow direction in this zone is unknown.

5.0 NATURE AND EXTENT OF CONTAMINATION

This section describes existing Site environmental soil and groundwater conditions with a focus on the HVOC plume area at the south end of the Site. The nature and extent of the contamination was characterized during the previous RI by SWI, RGI's SeaMar site explorations and B&K Site well sampling, and more recently through the supplemental RI activities documented in this report. The contaminants of potential concern (COPCs) previously identified in the soil and groundwater at the south end of the Site include HVOCs and TPH-D.

5.1 Halogenated Volatile Organic Compounds

Groundwater in the shallow water-bearing zone is impacted above MTCA cleanup levels with HVOCs, with TCE being the primary halogenated COPC. The approximate lateral extent of TCE in the shallow zone, based on groundwater sampling conducted by RGI and LAI between March 2016 and March 2017, is shown on the TCE concentration iso-contour map provided on Figure 11, and in the geologic profiles provided on Figures 6 through 10. As shown on these figures, the highest concentration of TCE in groundwater observed during the RGI and LAI sampling events was detected in LB-10, just south of the former wash pad and remedial excavation area. The contamination extends at least 60 ft south of LB-10 to between LB-18 and LB-20 beneath the Wooldridge building. The extent of upgradient contamination may be due to a localized groundwater divide or subsurface heterogeneity or anisoptropy causing localized groundwater flow or contaminant migration to the south, in what would otherwise be the upgradient direction when considering groundwater elevations at the B&K and SeaMar properties. While there are insufficient data to fully explain the apparent southerly migration, the lower groundwater elevation measured at MW-6 compared to MW-7, SM-MW-19, and SM-MW-20 suggests a potential hydrogeologic anomaly in this area, which may be related to the upgradient extent of the HVOC contamination.

HVOC concentrations in groundwater appear to drop off quickly to the north of MW-8 and MW-9, both of which contained HVOCs at concentrations above the MTCA Method A and B cleanup levels during the September and November groundwater sampling events. The shallow aquifer samples collected from LB-1 though LB-4, located in an east-west transect about 30 ft north of MW-9, contained no detectable TCE or c-DCE concentrations. VC was detected in the shallow sample collected from LB-1, suggesting that the naturally reducing conditions likely present in the peat and organic silt/clay layer present at the north end of the Site are enhancing natural biological dechlorination of the HVOCs.

HVOCs were detected at concentrations above MTCA cleanup levels in the samples from wells immediately adjacent to the east and southeast of the former wash pad area, but drop off to below detection limits within 30 to 40 ft in the crossgradient direction as evidenced by the results from SM-MW-14 and SM-MW-15. HVOC concentrations in groundwater to the west were significantly lower than to the east. The sample results from LB-8, which was the only sample collected to the west

of the former wash pad area with a detectable concentration of HVOCs, were below cleanup levels. Groundwater samples from other wells and borings crossgradient in this direction contained no detectable concentrations of HVOCs.

Contamination in the area south of the former wash pad appears to be mostly confined to the shallow silt/clay portion of the upper water-bearing zone. The shallow groundwater samples collected within the silt/clay unit at LB-9, LB-10, LB-15, and LB-18 all contained TCE at concentrations exceeding the MTCA cleanup levels, while the deeper samples collected from the underlying sand unit were significantly lower. Only the samples from LB-9 and LB-10 were identified as containing TCE slightly above the MTCA Method A cleanup level (5.9 µg/L and 5.4 µg/L, respectively). To the north, at and slightly downgradient of the former wash pad, the HVOC contamination appears to extend into the sand unit based on the results of groundwater samples collected from MW-7 through MW-9, all of which are partially screened within this unit. However, the downgradient extent of contamination within this unit appears to be limited based on the results of the deeper samples collected from LB-1 through LB-4, which contained no detectable concentrations of HVOCs. A deeper water-bearing unit was encountered approximately 30 ft bgs in MW-4. The extent of this unit is unknown, but it was not encountered in any of the other explorations. However, based on the sample collected by SWI in 2013, this unit does not appear to be impacted by the HVOC contamination at the Site.

5.2 Petroleum Hydrocarbons

Petroleum hydrocarbons were not detected at concentrations above MTCA cleanup levels in any of the samples analyzed. The petroleum hydrocarbon contamination detected by SWI in the sample collected from GP-6 may have been the result of leaks from the nearby catch basin associated with the former wash pad, which was observed to be in poor condition when it was removed during the remedial excavation. Removal of the contaminant source has likely allowed for natural attenuation to reduce the levels of hydrocarbon contamination at the south end of the Site to below applicable cleanup levels.

6.0 CONCLUSIONS

The lateral and vertical extent of the HVOC contamination at the B&K Site has been evaluated and appears to be limited to the upper water-bearing zone consisting of a shallow silt/clay unit and underlying sand unit. The contamination appears to extend upgradient onto the Wooldridge property adjacent to the south, and downgradient to the north-northeast onto the adjacent SeaMar property. The downgradient extent appears to be limited somewhat by interaction with organic soils at the north end of the Site, the redox conditions of which may be enhancing dechlorination of the HVOCs.

The TPH contamination previously detected by SWI in the vicinity of the wash pad does not appear to be widespread. None of the samples analyzed for TPH during the recent explorations contained TPH at concentrations above applicable cleanup criteria. Removal of the likely source of the previously-detected TPH contamination, the catch basin associated with the former wash pad, likely resulted in natural attenuation of the contamination to below cleanup levels.

Remediation of the HVOC groundwater contamination at the Site should effectively be carried out through enhanced bioremediation using an electron donor material to promote anaerobic reductive dechlorination. Due to the prevalence of low-permeability soils in the areas with the highest concentrations of HVOCs, application of the electron donor using an infiltration trench will likely be the preferred delivery method. Electron donor injection using injection wells and/or direct-push methods may be effective; however, the low-permeability soils will likely reduce the injection radius and increase the potential for short-circuiting to the surface or through preferential pathways in the soil matrix. LAI will prepare a remedial action work plan that provides details for the electron donor application for review and approval of B&K and Ecology following Ecology's review of this supplemental RI report.

7.0 USE OF THIS REPORT

This Supplemental Remedial Investigation Report has been prepared for the exclusive use of B&K and applicable regulatory agencies, for specific application to the Beckwith & Kuffel property. 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.

8.0 REFERENCES

Clayton Group Services. 2003. Report: Limited Phase II Subsurface Investigation at the Former Clarklift Facility, 1313 South 96th Street, Seattle, Washington 98108. July 29.

King County. 2016. "King County GIS Center Property Research About Zoning." King County. http://www.kingcounty.gov/services/gis/PropResearch/kc_zoning.aspx.

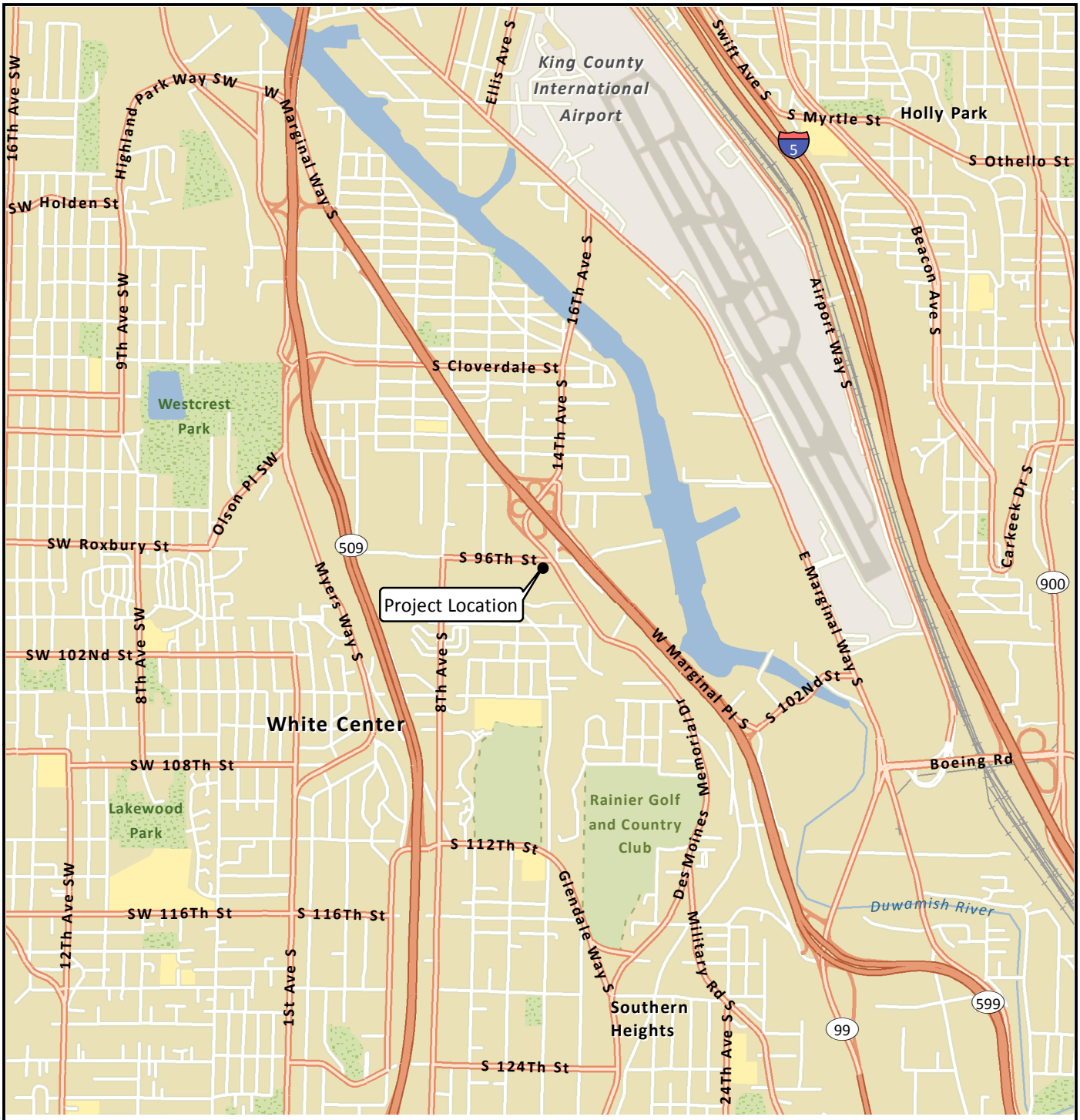
Riley Group, Inc. 2016. Phase II Subsurface Investigation, Dominic's Plaza (SeaMar Community Health Centers), 9635 Des Moines Memorial Drive South, Seattle, Washington 98108. March 28.

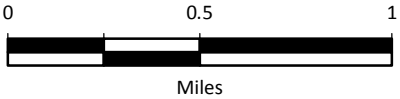
Shannon & Wilson, Inc. 2012. Report: Phase I Environmental Site Assessment, 1313 South 96th Street, King County, Washington. January 11.

Shannon & Wilson, Inc. 2014. Remedial Investigation/Interim Remedial Action Report, Beckwith & Kuffel Site, Seattle, Washington. October 21.

Troost, Kathy G., Derek B. Booth, Aaron P. Wisher, and Scott A. Shimel. 2005. The Geologic Map of Seattle – A Progress Report. US Geological Survey, US Department of the Interior.

USGS. 1949. Seattle South Quadrangle, Washington 7.5-Minute Series Topographic Map. US Geological Survey. US Department of the Interior.





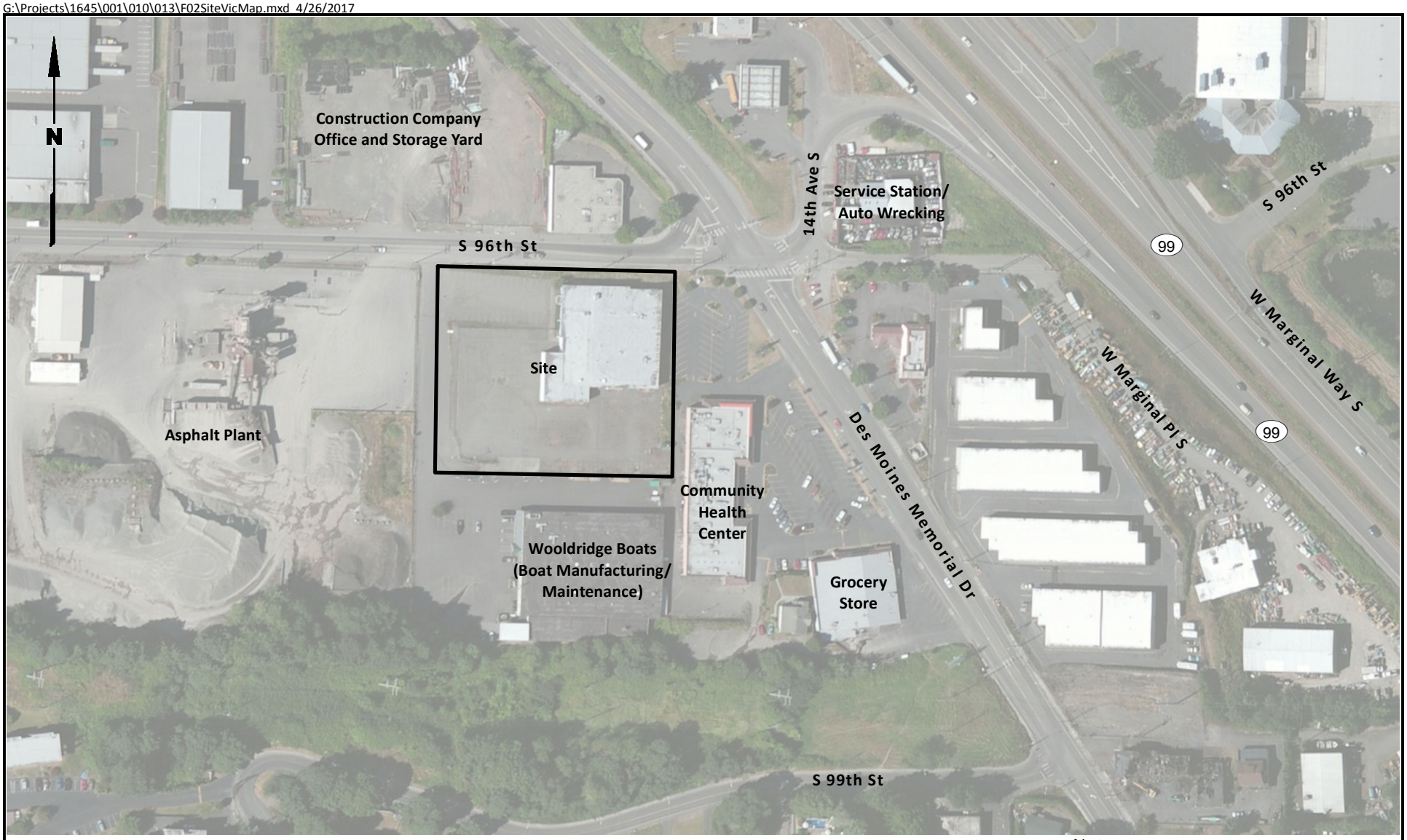
Data Source: Esri 2012

G:\Projects\1645\001\010\014\F01VicMap.mxd 5/19/2017

LANDAU ASSOCIATES

Beckwith & Kuffel Seattle, Washington	**Vicinity Map**	Figure 1

G:\Projects\1645\001\010\013\F02SiteVicMap.mxd 4/26/2017



Legend

Subject Property

Note

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

Data Source: Esri World Imagery.

0 200 400

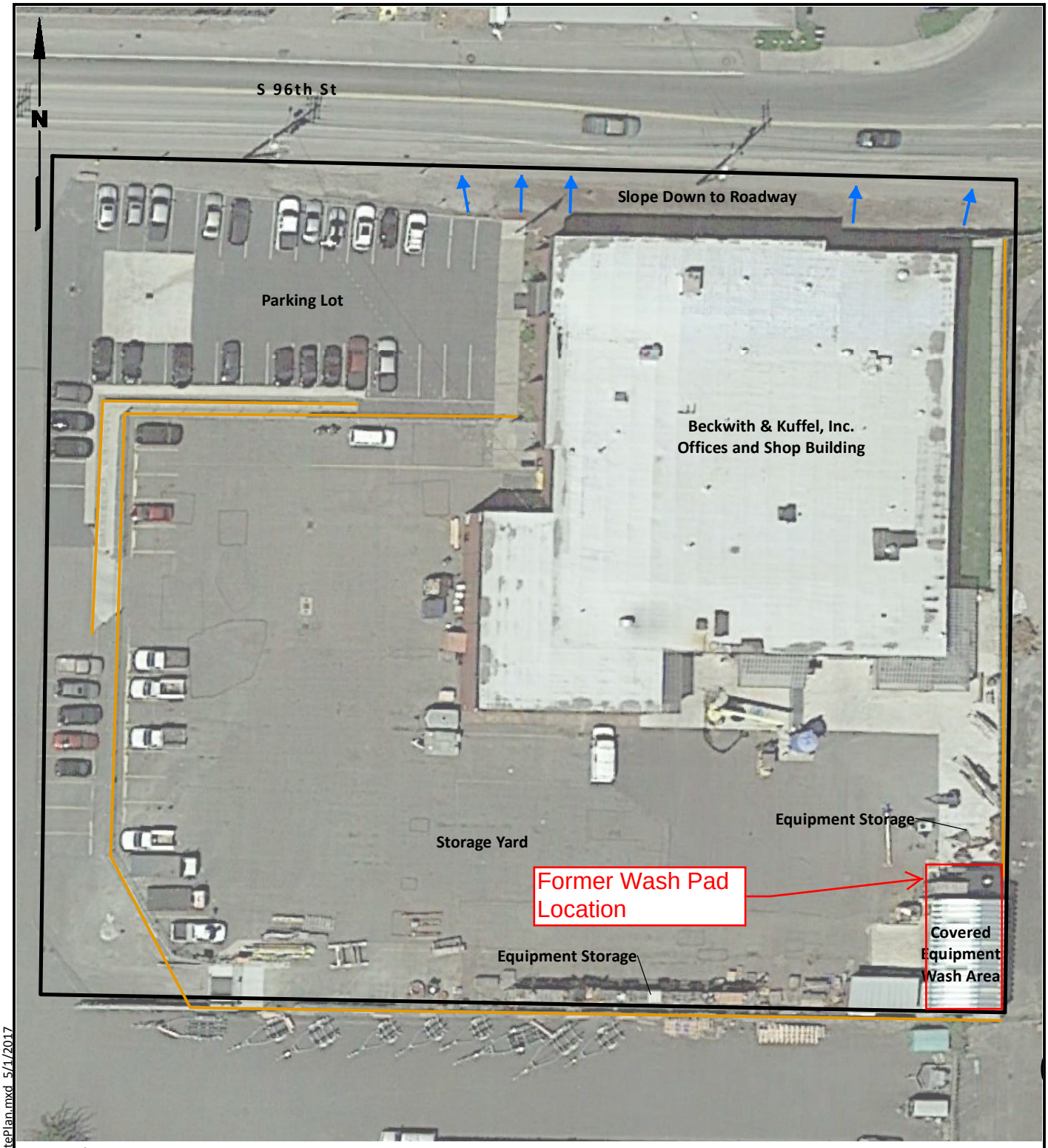
Scale in Feet

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Site and Vicinity Plan

Figure
2



Legend

- Subject Property
- Retaining Wall

Note

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

0 50 100

Scale in Feet

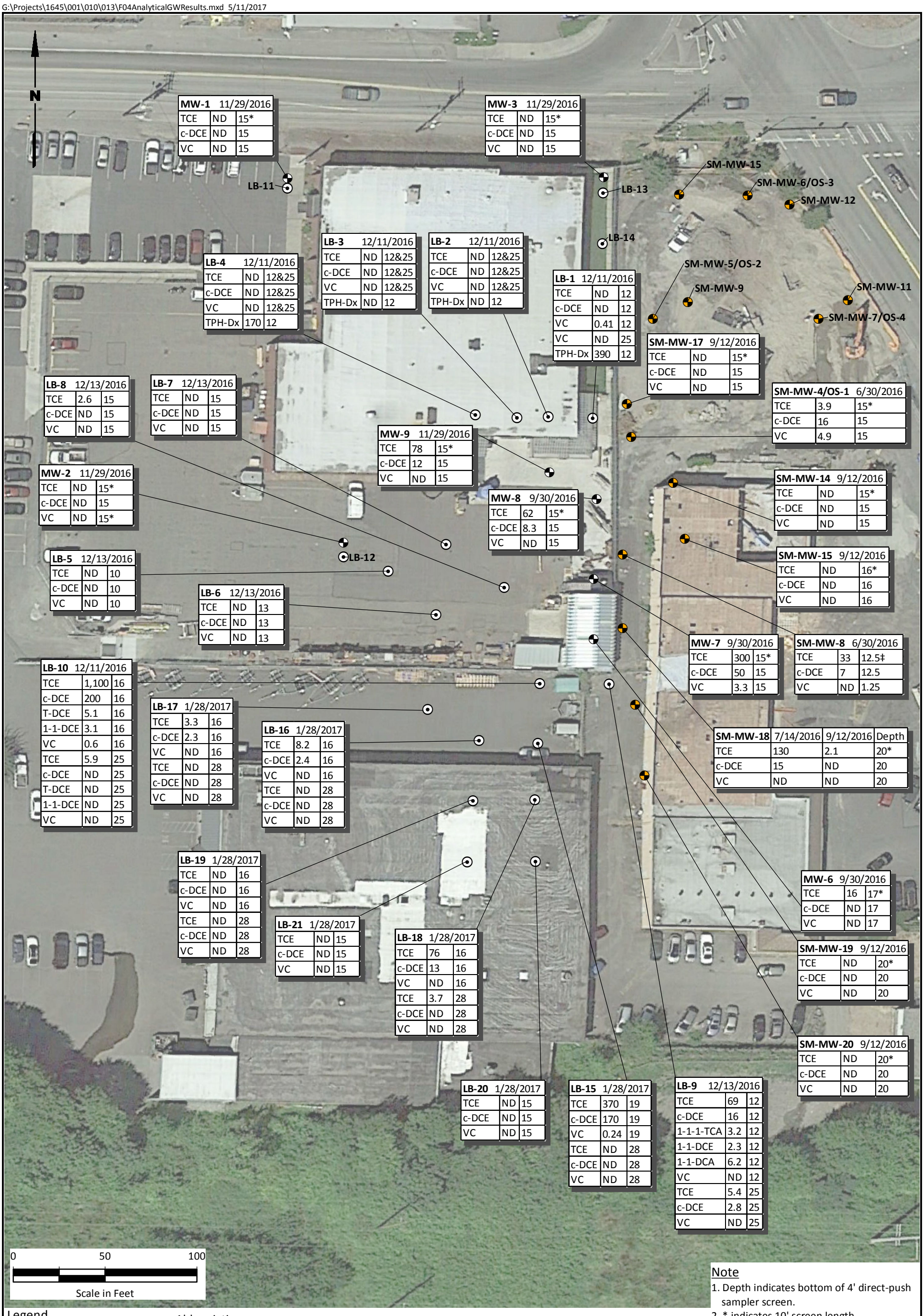
Data Sources: King County GIS; Google Earth Imagery.

G:\Projects\1645\001\010\013\F03SitePlan.mxd 5/1/2017

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc. Seattle, Washington	**Site Plan**	Figure 3

G:\Projects\1645\001\010\013\F04AnalyticalGWResults.mxd 5/11/2017



Legend

- Monitoring Well (LAI)
- Direct Push Boring (LAI)
- Monitoring Well (SeaMar)

Abbreviations:

ND = Not Detected
µg/L = Micrograms per liter
TCE = Trichloroethlene
c-DCE = Cis-1,2-Dichloroethene
T-DCE = Trans-1,2-Dichloroethene
1-1-DCE = 1-1-Dichloroethene
1-1-DCA = 1-1-Dichloroethane
1-1-1-TCE = 1-1-1-Trichloroethane
VC = Vinyl Chloride

Groundwater Sample ID		Date
Analyte	Concentration	Depth

Data Source: SeaMar; Google Earth Imagery.

Note

1. Depth indicates bottom of 4' direct-push sampler screen.
2. * indicates 10' screen length.
   ‡ indicates 5' screen length.
3. Anaylte concentrations are shown in µg/L.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

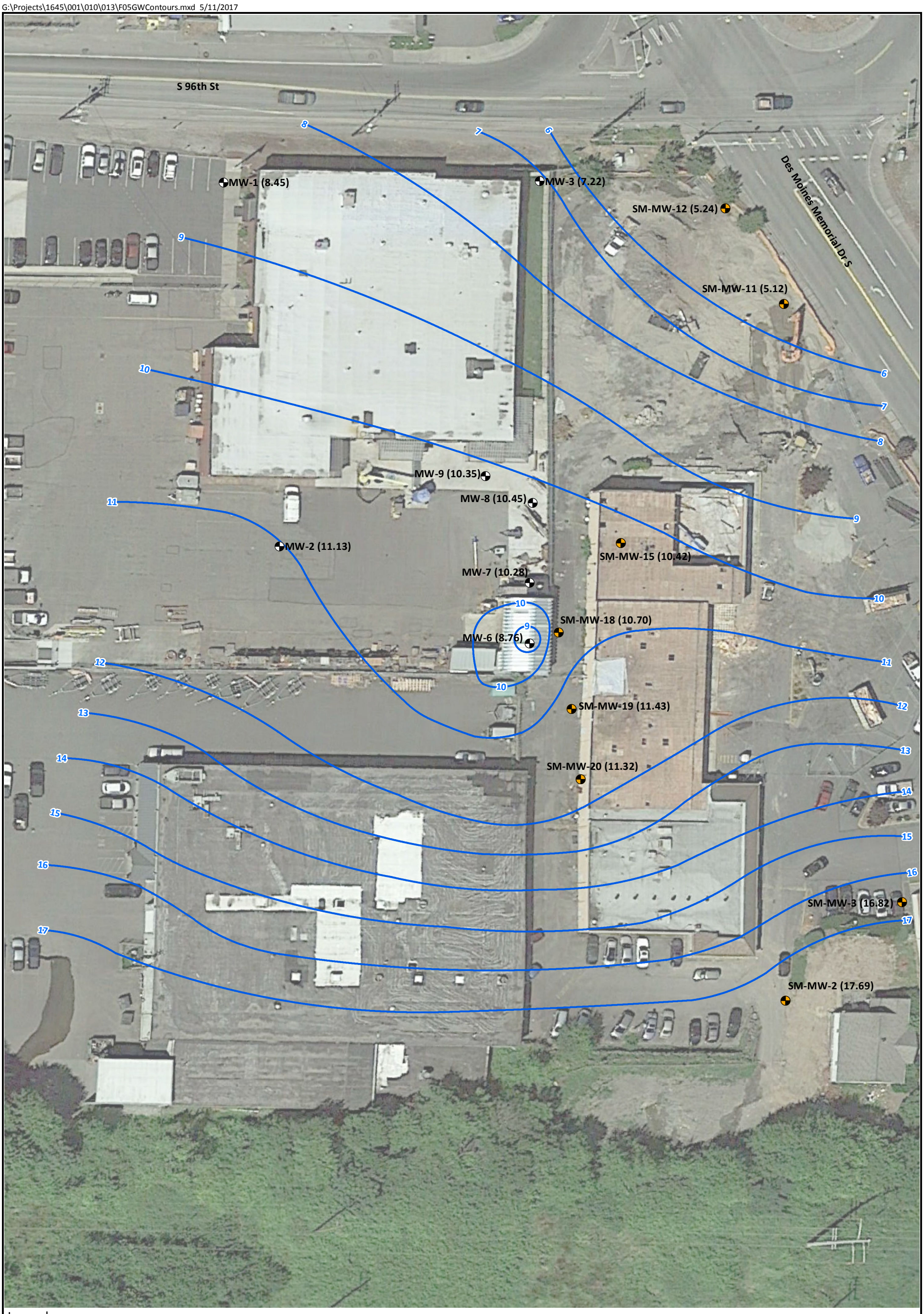
LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Analytical Results of Groundwater Samples - Recent Explorations

Figure 4

G:\Projects\1645\001\010\013\F05GWContours.mxd 5/11/2017



Legend

- Monitoring Well (LAI)
- Monitoring Well (SeaMar)
- Groundwater Elevation Contour (ft above arbitrary datum)

0 60 120

Scale in Feet

Data Source: SeaMar; Google Earth Imagery.

Note

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

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Groundwater Elevation Map
November 2016

Figure
5

G:\Projects\1645\001\010\013\F06GWMonitoringWellLocations.mxd 5/11/2017

Legend

- Monitoring Well (LAI)
- Decommissioned Monitoring Well (LAI)
- Direct Push Boring (LAI)
- Monitoring Well (SeaMar)
- Direct Push Boring (SWI)

0 60 120

Scale in Feet

Data Source: SeaMar; Google Earth Imagery.

Notes

1. Monitoring wells MW-4 and MW-5 were decommissioned in November 2013.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

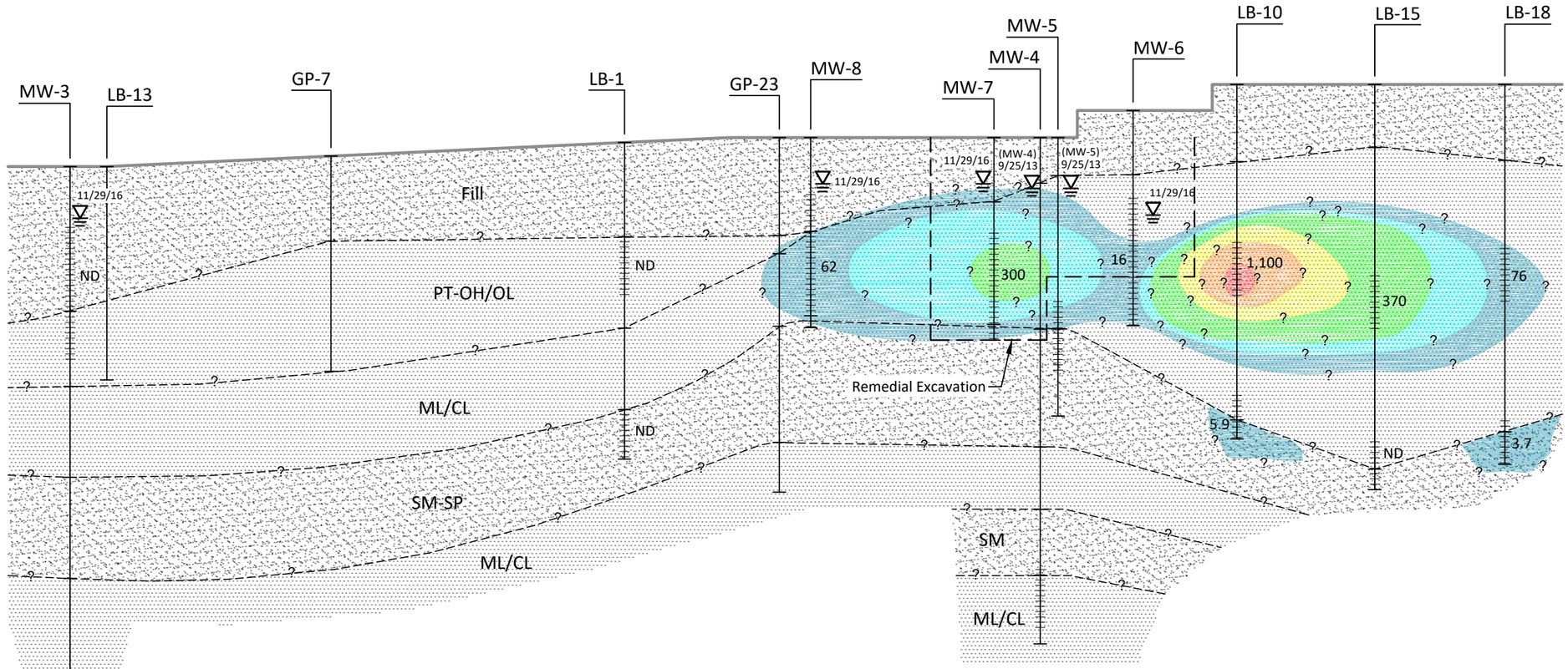
Beckwith & Kuffel, Inc.
Seattle, Washington

Groundwater Monitoring Wells and Boring Locations

Figure 6

A
North

A'
South



HORIZ. 0 30 60

VERT. 0 10 20

Scale in Feet

Legend

- MW-3 — Project Exploration Designation
- Top of Exploration
- Groundwater Level
- Inferred Geologic Contact
- Well Screen Interval (If Installed)
- 76 — Groundwater Sample Screen Interval with TCE Concentration in µg/L; ND = Not Detected
- Bottom of Exploration

TCE Concentration Legend

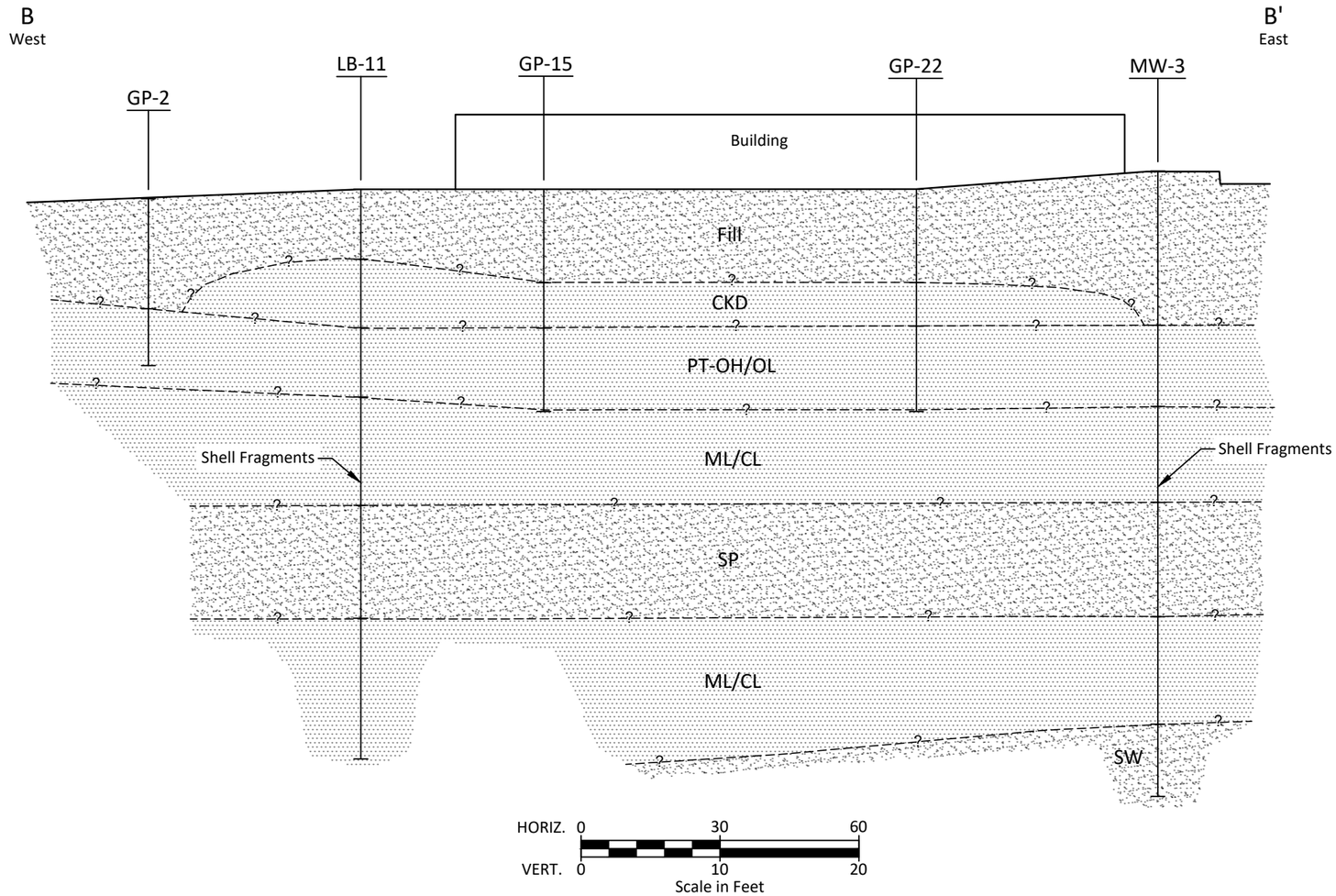
- > 1,000 µg/L
- 750 - 1,000 µg/L
- 500 - 750 µg/L
- 250 - 500 µg/L
- 100-250 µg/L
- 0 - 100 µg/L

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Generalized Geologic Cross-Section A-A'

Figure 7



Legend

MW-3 — Project Exploration Designation

Top of Exploration

Groundwater Level

Inferred Geologic Contact

Well Screen Interval (If Installed)

76 — Groundwater Sample Screen Interval with TCE Concentration in µg/L
ND = Not Detected

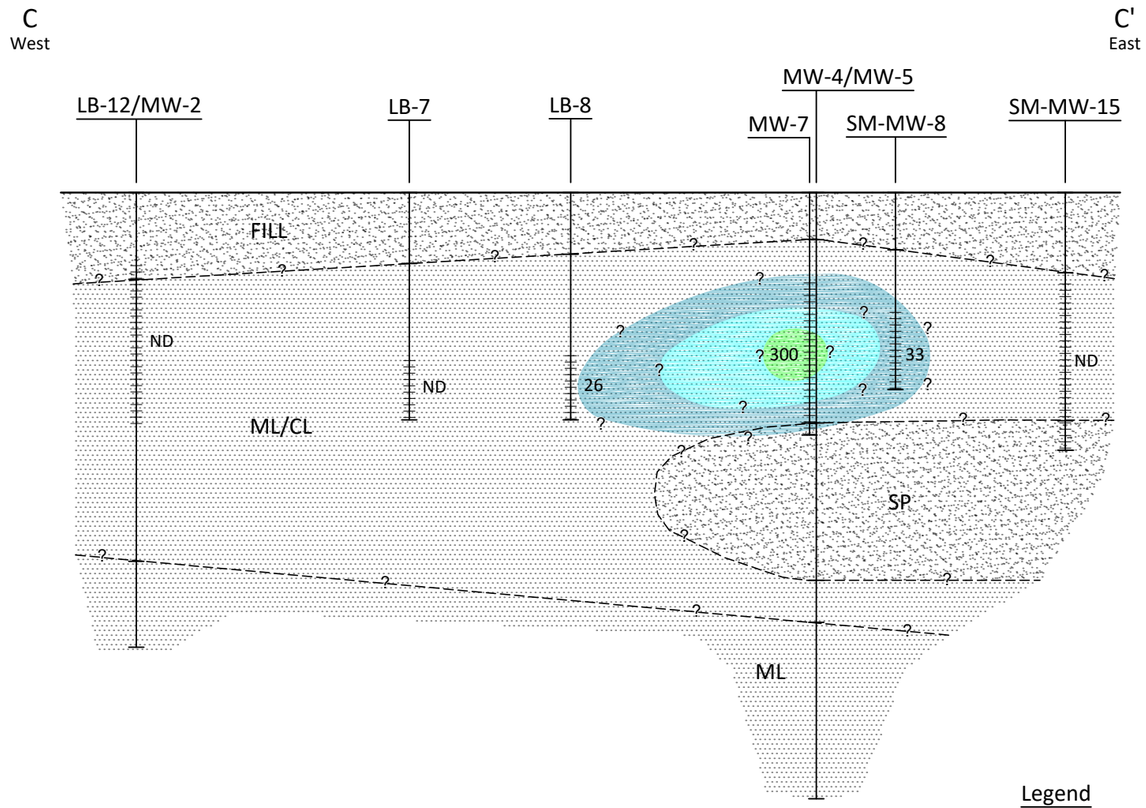
Bottom of Exploration

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Generalized Geologic Cross-Section
B-B'

Figure
8



Legend

- MW-7 — Project Exploration Designation
- Top of Exploration
- Groundwater Level
- Inferred Geologic Contact
- Well Screen Interval (If Installed)
- 300 — Groundwater Sample Screen Interval with TCE Concentration in µg/L
  ND = Not Detected
- Bottom of Exploration

TCE Concentration Legend

- 250 - 500 µg/L
- 100-250 µg/L
- 0 - 100 µg/L

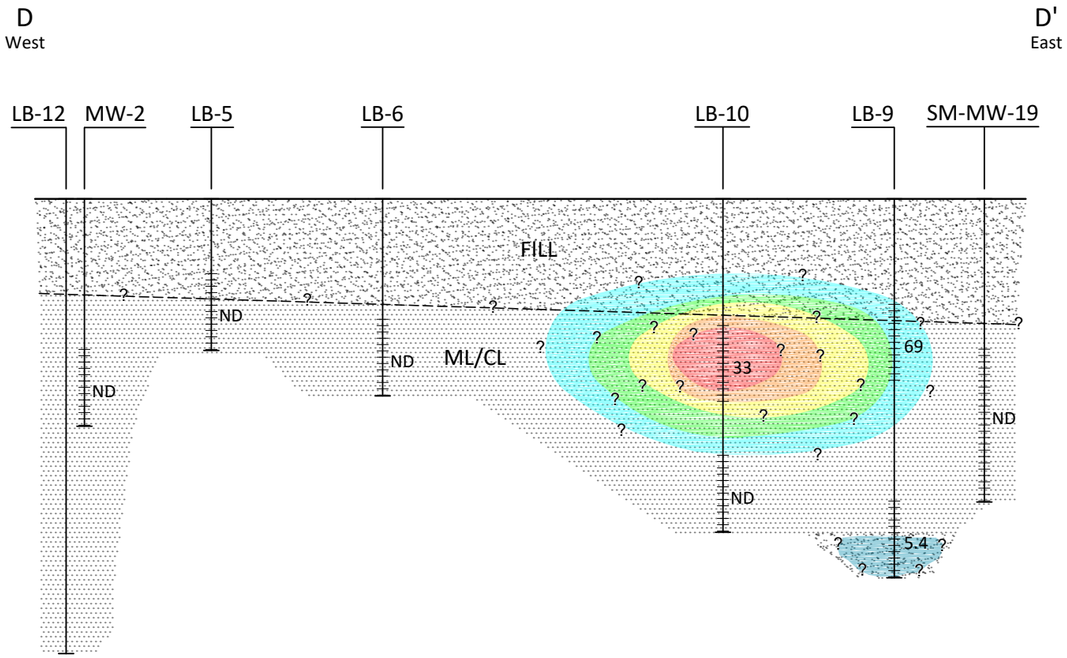
Landau Associates | G:\Projects\1645\001\010\014\F07 - F10 GeneralizedXsections.dwg | 5/8/2017 6:35 AM

LANDAU ASSOCIATES

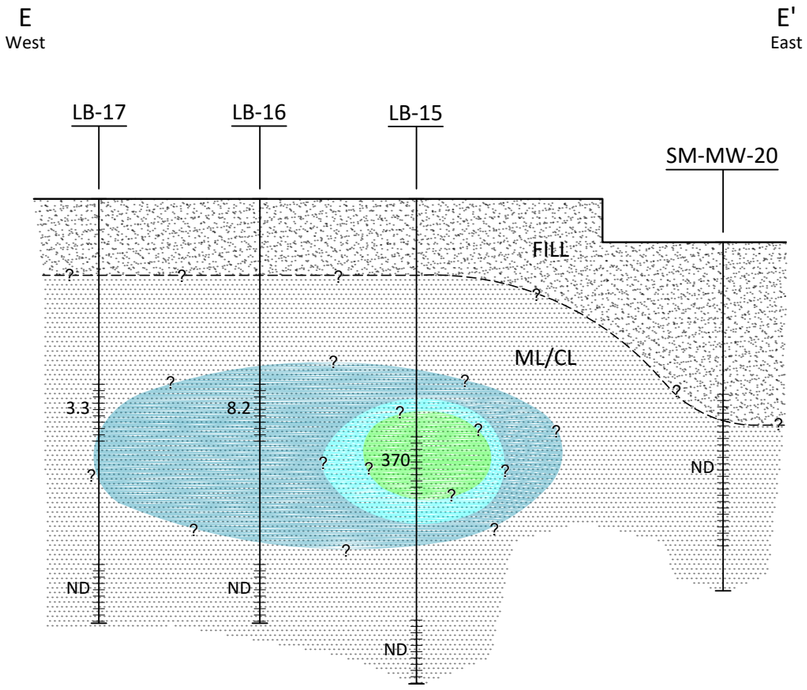
Beckwith & Kuffel, Inc.
Seattle, Washington

Generalized Geologic Cross-Section C-C'

Figure 9



Cross-Section D-D'



Cross-Section E-E'

HORIZ. 0 30 60
VERT. 0 10 20
Scale in Feet

Legend

- MW-2 — Project Exploration Designation
- Top of Exploration
- Groundwater Level
- Inferred Geologic Contact
- Well Screen Interval (If Installed)
- 5.4 — Groundwater Sample Screen Interval with TCE Concentration in µg/L
  ND = Not Detected
- Bottom of Exploration

TCE Concentration Legend

- > 1,000 µg/L
- 750 - 1,000 µg/L
- 500 - 750 µg/L
- 250 - 500 µg/L
- 100-250 µg/L
- 0 - 100 µg/L

Acronym Legend

Fill = Fill
ML/CL = Mixed

Landau Associates | G:\Projects\1645\001\010\014\F07 - F10 GeneralizedXsections.dwg | 5/11/2017 3:06 PM

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Generalized Geologic Cross-Section D-D' and E-E'

Figure 10

G:\Projects\1645\001\010\013\F11TCEConcentrations.mxd 5/1/2017

Legend

- Monitoring Well (LAI)
- Direct Push Boring (LAI)
- Monitoring Well (SeaMar)
- TCE Contours (mg/L)

ND = not detected
NS = not sampled

0 60 120

Scale in Feet

Note

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

Data Source: SeaMar; Google Earth Imagery.

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Shallow Aquifer
TCE Concentrations

Figure
11

Table 1
Groundwater Analytical Results
Beckwith & Kuffel Site
Seattle, Washington

Analyte	MTCA Method A Cleanup Level	Location ID, Sample Depth, Laboratory SDG, and Sample Date										
		LB-1 10 EV16120055 12/11/2016	LB-1 25 EV16120055 12/11/2016	LB-2 10 EV16120055 12/11/2016	LB-2 25 EV16120055 12/11/2016	LB-3 10 EV16120055 12/11/2016	LB-3 25 EV16120055 12/11/2016	LB-4 10 EV16120055 12/11/2016	LB-4 25 EV16120055 12/11/2016	LB-4 30 EV16120055 12/11/2016	LB-5 10 EV16120075 12/12/2016	LB-6 10 EV16120075 12/12/2016
Petroleum Hydrocarbons (µg/L) NWTPH-Gx/Dx												
Gasoline-Range C7-C12	800/1,000[a]	50 U	--	50 U	--	50 U	--	50 U	--	--	50 U	50 U
Diesel-Range Organics C12-C24	500	--	--	--	--	--	--	--	--	--	--	--
Oil-Range Organics C24-C40	500	--	--	--	--	--	--	--	--	--	--	--
NWTPH-Dx (µg/L) with Silica Gel Cleanup												
Diesel Range Organics C12-C24	500	130 U	--	130 U	--	130 U	--	**170**	--	--	**150**	130 U
Oil-Range Organics C24-C40	500	**390**	--	250 U	--	250 U	--	250 U	--	--	**320**	250 U
BTEX (µg/L; SW-846 8021B)												
Benzene	5.0	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	--	1.0 U	1.0 U
Toluene	1,000	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	--	**1.4**	1.0 U
Ethylbenzene	700	1.0 U	--	1.0 U	--	1.0 U	--	1.0 U	--	--	1.0 U	1.0 U
Xylenes, Total	1,000	3.0 U	--	3.0 U	--	3.0 U	--	3.0 U	--	--	3.0 U	3.0 U
Halogenated Volatiles (µg/L; SW-846 8260C)												
Dichlorodifluoromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	0.2	**0.41**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Bromomethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	0.625[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.68[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2,2-Dichloropropane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	1.41[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloropropane	1.22[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.706[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	0.768[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichloropropane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	0.521[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Table 1
Groundwater Analytical Results
Beckwith & Kuffel Site
Seattle, Washington

Analyte	MTCA Method A Cleanup Level	Location ID, Sample Depth, Laboratory SDG, and Sample Date										
		LB-1 10 EV16120055 12/11/2016	LB-1 25 EV16120055 12/11/2016	LB-2 10 EV16120055 12/11/2016	LB-2 25 EV16120055 12/11/2016	LB-3 10 EV16120055 12/11/2016	LB-3 25 EV16120055 12/11/2016	LB-4 10 EV16120055 12/11/2016	LB-4 25 EV16120055 12/11/2016	LB-4 30 EV16120055 12/11/2016	LB-5 10 EV16120075 12/12/2016	LB-6 10 EV16120075 12/12/2016
1,2-Dibromoethane	0.010	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1,2-Tetrachloroethane	1.68[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	5.54[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	0.219[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.001[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.10[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane	0.055[b]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	1.51[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorobutadiene	0.561[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Table 1
Groundwater Analytical Results
Beckwith & Kuffel Site
Seattle, Washington

Analyte	MTCA Method A Cleanup Level	Location ID, Sample Depth, Laboratory SDG, and Sample Date										
		LB-7 10 EV16120075 12/12/2016	LB-8 15 EV16120075 12/12/2016	LB-9 10 EV16120075 12/13/2016	LB-9 25 EV16120075 12/13/2016	LB-10 16 EV16120055 12/11/2016	LB-10 27 EV16120055 12/11/2016	LB-15 16 EV17010159 1/28/2017	LB-15 28 EV17010159 1/28/2017	LB-16 16 EV17010159 1/28/2017	LB-16 28 EV17010159 1/28/2017	LB-17 16 EV17010159 1/28/2017
Petroleum Hydrocarbons (µg/L) NWTPH-Gx/Dx												
Gasoline-Range C7-C12	800/1,000[a]	50 U	50 U	--	--	--	--	--	--	--	--	--
Diesel-Range Organics C12-C24	500	--	--	--	--	--	--	--	--	--	--	--
Oil-Range Organics C24-C40	500	--	--	--	--	--	--	--	--	--	--	--
NWTPH-Dx (µg/L) with Silica Gel Cleanup												
Diesel Range Organics C12-C24	500	130 U	130 U	--	--	--	--	--	--	--	--	--
Oil-Range Organics C24-C40	500	250 U	250 U	--	--	--	--	--	--	--	--	--
BTEX (µg/L; SW-846 8021B)												
Benzene	5.0	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
Toluene	1,000	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--
Xylenes, Total	1,000	3.0 U	3.0 U	--	--	--	--	--	--	--	--	--
Halogenated Volatiles (µg/L; SW-846 8260C)												
Dichlorodifluoromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	0.2	0.20 U	0.20 U	0.20 U	0.20 U	**0.60**	0.20 U	**0.24**	0.20 U	0.20 U	0.20 U	0.20 U
Bromomethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	0.625[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	NA	2.0 U	2.0 U	**2.3**	2.0 U	**3.1**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	NA	2.0 U	2.0 U	2.0 U	2.0 U	**5.1**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.68[b]	2.0 U	2.0 U	**6.2**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	NA	2.0 U	2.0 U	**16**	**2.8**	**200**	2.0 U	**170**	2.0 U	**2.4**	2.0 U	**2.3**
2,2-Dichloropropane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	1.41[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200	2.0 U	2.0 U	**3.2**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	5.0	2.0 U	**3.1**	**69**	**5.4**	**1,100**	**5.9**	**370**	2.0 U	**8.2**	2.0 U	**3.3**
1,2-Dichloropropane	1.22[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.706[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	0.768[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichloropropane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	0.521[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Table 1
Groundwater Analytical Results
Beckwith & Kuffel Site
Seattle, Washington

Analyte	MTCA Method A Cleanup Level	Location ID, Sample Depth, Laboratory SDG, and Sample Date										
		LB-7 10 EV16120075 12/12/2016	LB-8 15 EV16120075 12/12/2016	LB-9 10 EV16120075 12/13/2016	LB-9 25 EV16120075 12/13/2016	LB-10 16 EV16120055 12/11/2016	LB-10 27 EV16120055 12/11/2016	LB-15 16 EV17010159 1/28/2017	LB-15 28 EV17010159 1/28/2017	LB-16 16 EV17010159 1/28/2017	LB-16 28 EV17010159 1/28/2017	LB-17 16 EV17010159 1/28/2017
1,2-Dibromoethane	0.010	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1,2-Tetrachloroethane	1.68[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	5.54[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	0.219[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.001[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.10[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane	0.055[b]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	1.51[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorobutadiene	0.561[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Table 1
Groundwater Analytical Results
Beckwith & Kuffel Site
Seattle, Washington

Analyte	MTCA Method A Cleanup Level	Location ID, Sample Depth, Laboratory SDG, and Sample Date										
		LB-17 28 EV17010159 1/28/2017	LB-18 15 EV17030104 3/12/2017	LB-18 28 EV17030104 3/12/2017	LB-19 15 EV17030104 3/12/2017	LB-19 28 EV17030104 3/12/2017	LB-20 15 EV17030104 3/12/2017	LB-21 15 EV17030104 3/12/2017	MW-1 NA EV16110203 11/29/2016	MW-2 NA EV16110203 11/29/2016	MW-3 NA EV16110203 11/29/2016	MW-9 NA EV16110203 11/29/2016
Petroleum Hydrocarbons (µg/L) NWTPH-Gx/Dx												
Gasoline-Range C7-C12	800/1,000[a]	--	--	--	--	--	--	--	--	--	--	--
Diesel-Range Organics C12-C24	500	--	--	--	--	--	--	--	--	130 U	--	130 U
Oil-Range Organics C24-C40	500	--	--	--	--	--	--	--	--	250 U	--	250 U
NWTPH-Dx (µg/L) with Silica Gel Cleanup												
Diesel Range Organics C12-C24	500	--	--	--	--	--	--	--	--	--	--	--
Oil-Range Organics C24-C40	500	--	--	--	--	--	--	--	--	--	--	--
BTEX (µg/L; SW-846 8021B)												
Benzene	5.0	--	--	--	--	--	--	--	--	--	--	--
Toluene	1,000	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	--	--	--	--	--	--	--	--	--	--	--
Xylenes, Total	1,000	--	--	--	--	--	--	--	--	--	--	--
Halogenated Volatiles (µg/L; SW-846 8260C)												
Dichlorodifluoromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl Chloride	0.2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Bromomethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Carbon Tetrachloride	0.625[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichlorofluoromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methylene Chloride	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloroethane	7.68[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,2-Dichloroethene	NA	2.0 U	**13**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	**12**
2,2-Dichloropropane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromochloromethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Chloroform	1.41[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1-Trichloroethane	200	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichloroethane	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	5.0	2.0 U	**76**	**3.7**	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	**78**
1,2-Dichloropropane	1.22[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromomethane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromodichloromethane	0.706[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
trans-1,3-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
cis-1,3-Dichloropropene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-Trichloroethane	0.768[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichloropropane	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tetrachloroethene	5.0	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Dibromochloromethane	0.521[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Table 1
Groundwater Analytical Results
Beckwith & Kuffel Site
Seattle, Washington

Analyte	MTCA Method A Cleanup Level	Location ID, Sample Depth, Laboratory SDG, and Sample Date										
		LB-17 28 EV17010159 1/28/2017	LB-18 15 EV17030104 3/12/2017	LB-18 28 EV17030104 3/12/2017	LB-19 15 EV17030104 3/12/2017	LB-19 28 EV17030104 3/12/2017	LB-20 15 EV17030104 3/12/2017	LB-21 15 EV17030104 3/12/2017	MW-1 NA EV16110203 11/29/2016	MW-2 NA EV16110203 11/29/2016	MW-3 NA EV16110203 11/29/2016	MW-9 NA EV16110203 11/29/2016
1,2-Dibromoethane	0.010	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
Chlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,1,2-Tetrachloroethane	1.68[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromoform	5.54[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane	0.219[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichloropropane	0.001[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Bromobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
2-Chlorotoluene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Chlorotoluene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,3-Dichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,4-Dichlorobenzene	8.10[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromo-3-chloropropane	0.055[b]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	1.51[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Hexachlorobutadiene	0.561[b]	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

Notes:

[a] Preliminary screening level is 800 µg/L when benzene is present, 1,000 µg/L when benzene is not detectable.

[b] MTCA Method B cancer clean up levels used.

U = The compound was not detected at the reported concentration.

Bold text indicates detected analyte.

Green Box indicates exceedance of MTCA Method A screening level.

Abbreviations:

-- = not analyzed

µg/L = micrograms per liter

ID = identification

MTCA = Model Toxics Control Act

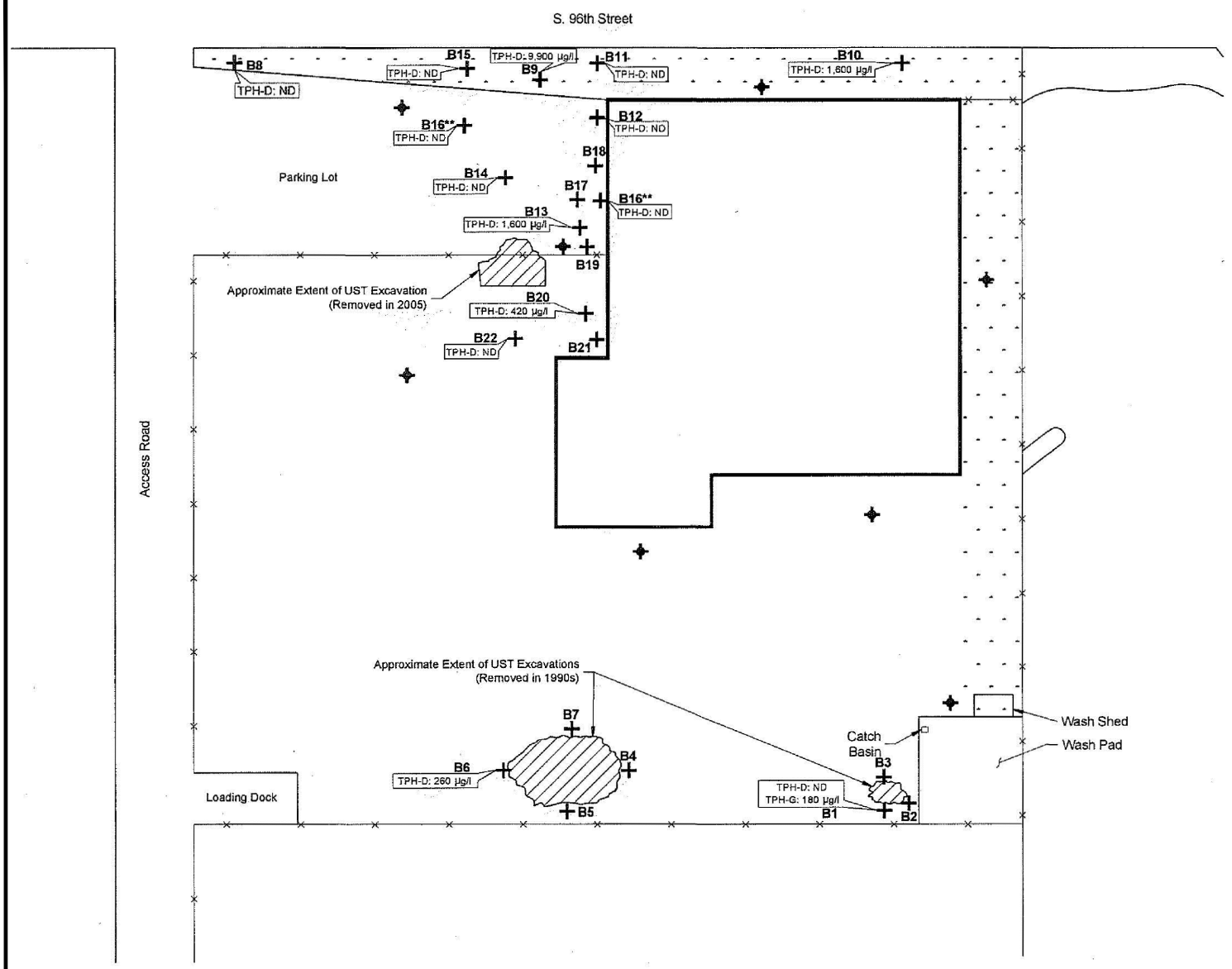
NA = not applicable

NWTPH = Northwest Total Petroleum Hydrocarbon

SDG = sample delivery group

APPENDIX A

Selected Figures from Shannon & Wilson Remedial Investigation / Interim Remedial Action Report



LEGEND

B1+ Geoprobe Designation and Approximate Location (Clayton, 2003-2004). Locations are from Unscaled Drawings in Clayton Reports (Clayton 2003a, 2003b, and 2005)

**Two Locations were Given the Designation "B16"

GROUNDWATER SAMPLE RESULTS

TPH-G = Total Gasoline Range Petroleum Hydrocarbons

TPH-D = Total Diesel Range Petroleum Hydrocarbons

µg/L = Micrograms per Liter

ND = Not Detected

NOTE

Groundwater samples collected from B17, B18, B19, and B21 were observed to have visible sheens and were therefore assumed to be contaminated above ecology criteria and were therefore not analyzed.

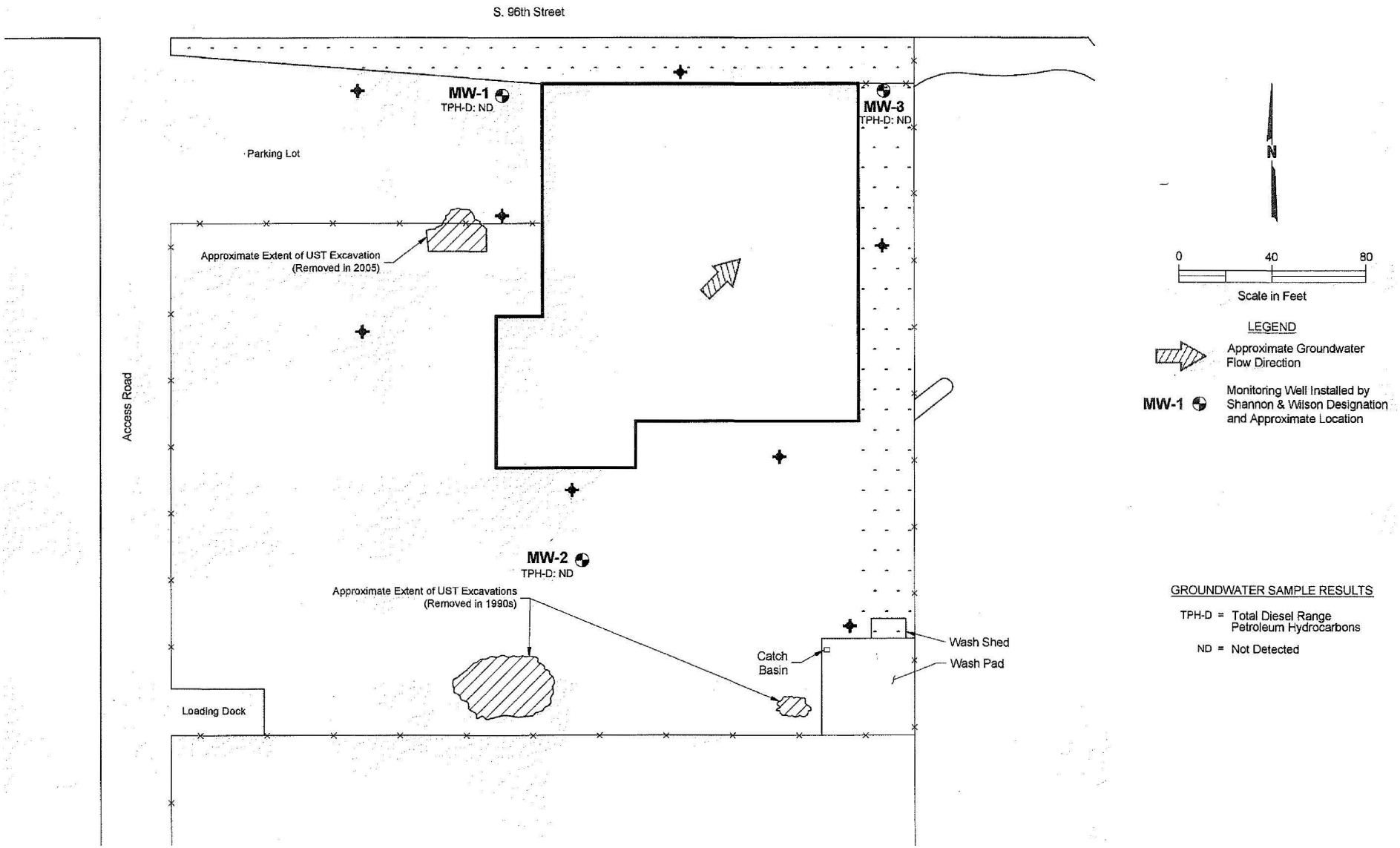
Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Site Plan with Previous Explorations

Figure
A-1



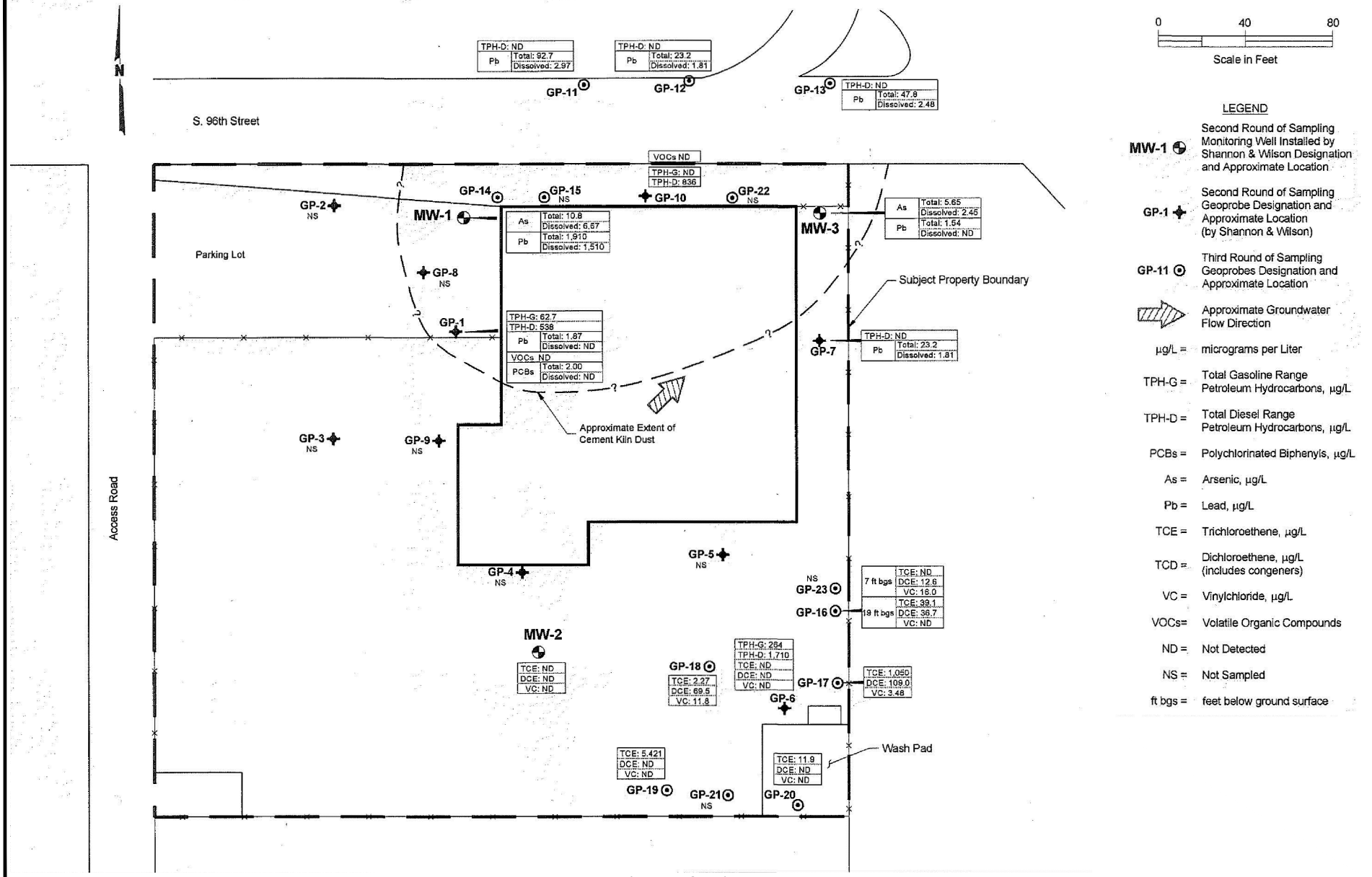
Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Initial Monitoring Well Locations

Figure
A-2



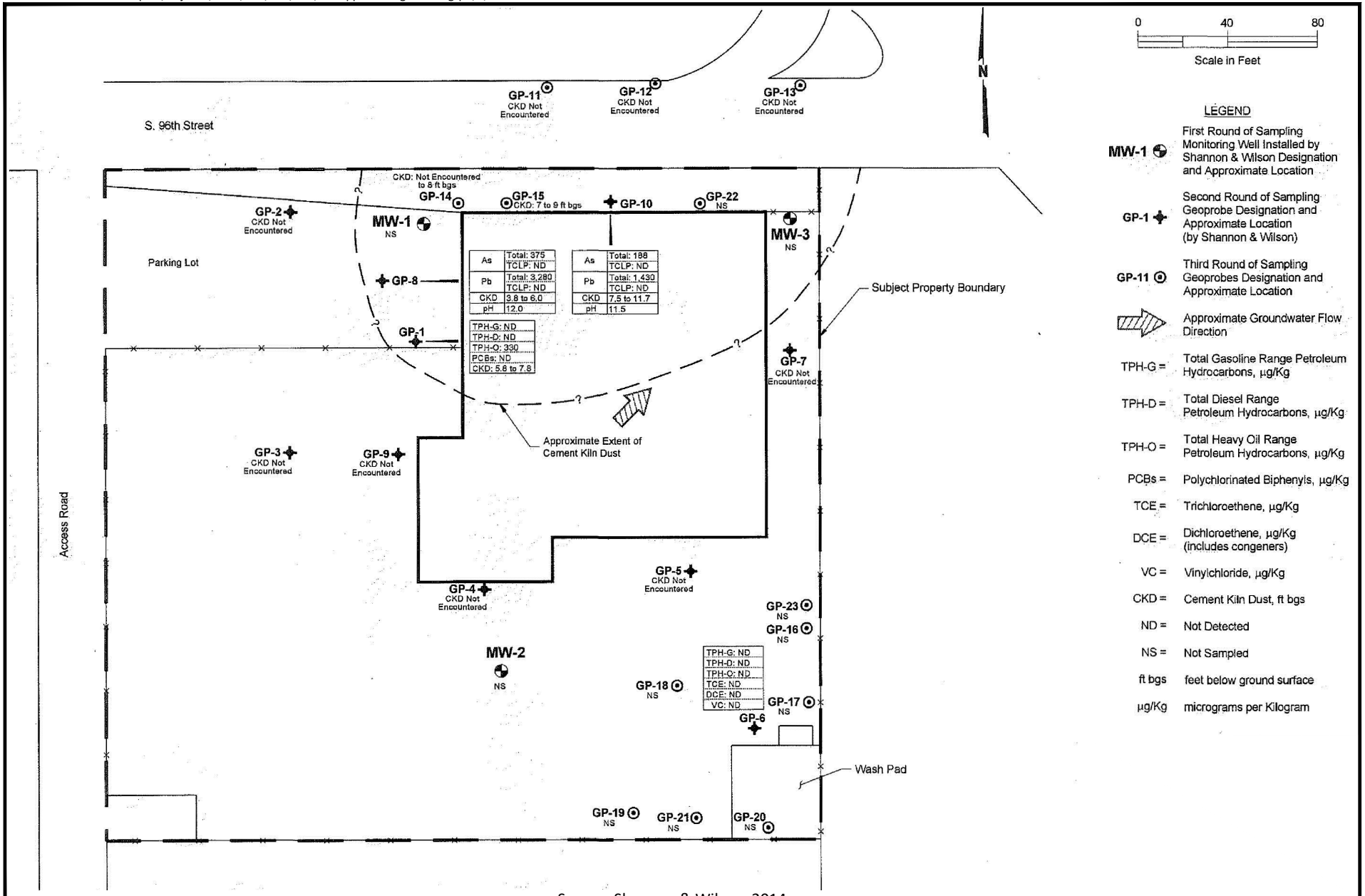
Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Initial Explorations with Groundwater Results

Figure
A-3



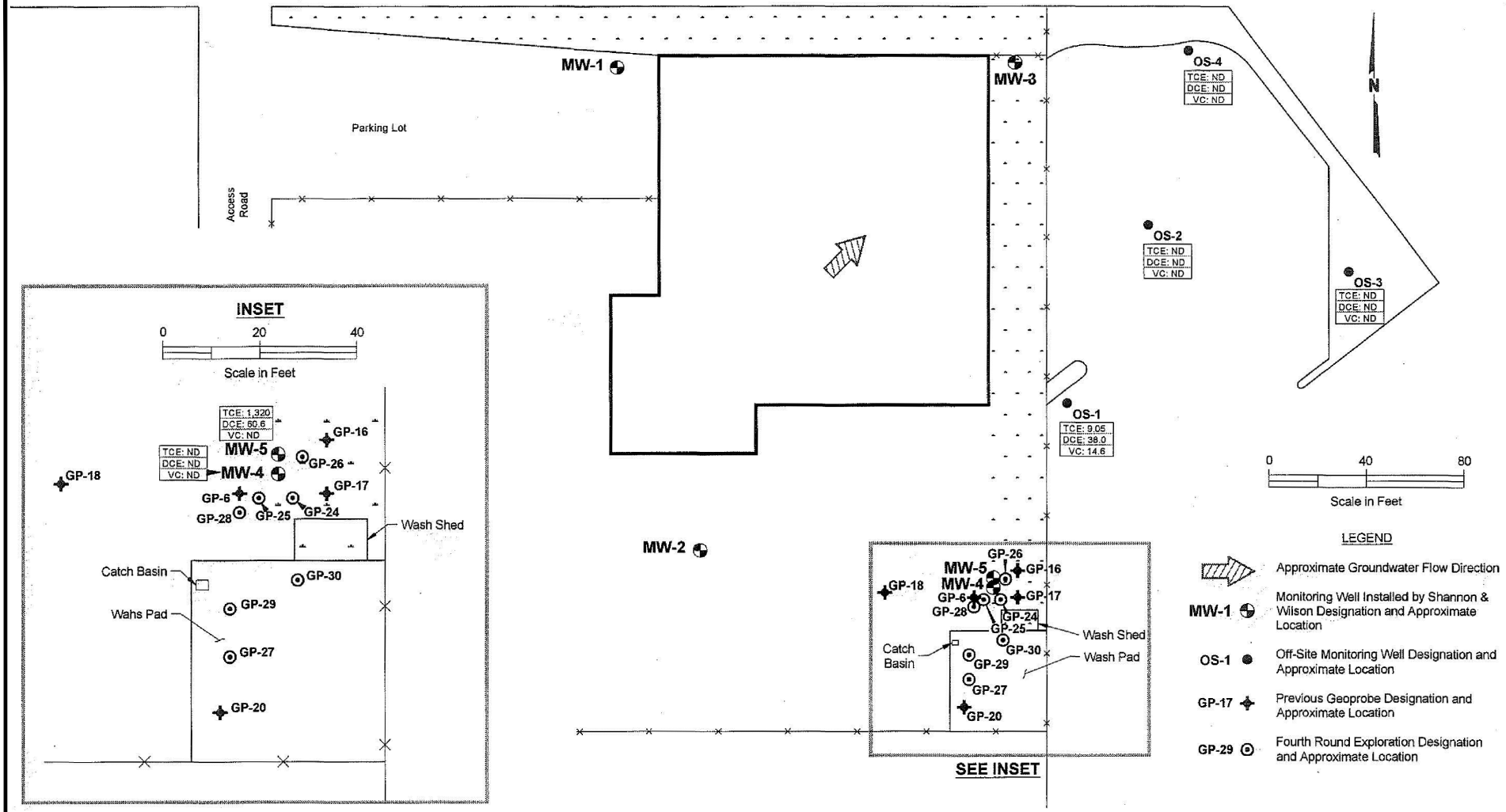
Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

HVOC Area Explorations with Soil Results

Figure
A-4



GROUNDWATER SAMPLE RESULTS

TCE = Trichloroethene, µg/L
TCD = Dichloroethene, µg/L (includes congeners)
VC = Vinylchloride, µg/L
µg/L = Micrograms per Liter
ND = Not Detected

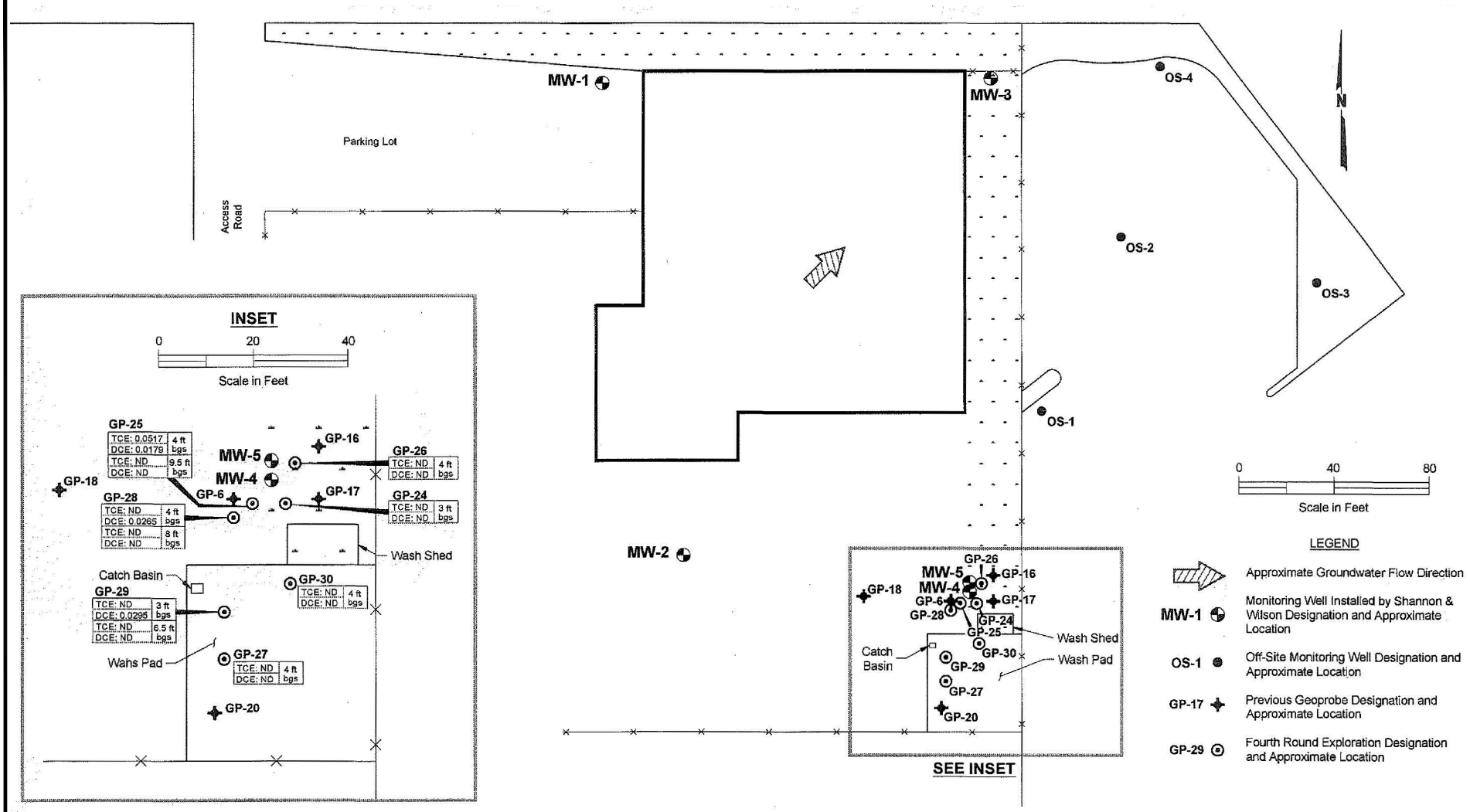
Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

HVOC Area Explorations with Groundwater Results

Figure
A-5



SOIL SAMPLE RESULTS

TCE = Trichloroethene, µg/Kg
TCD = Dichloroethene, µg/Kg (includes congeners)
µg/Kg = Micrograms per Kilogram
ND = Not Detected
ft bgs = feet below ground surface

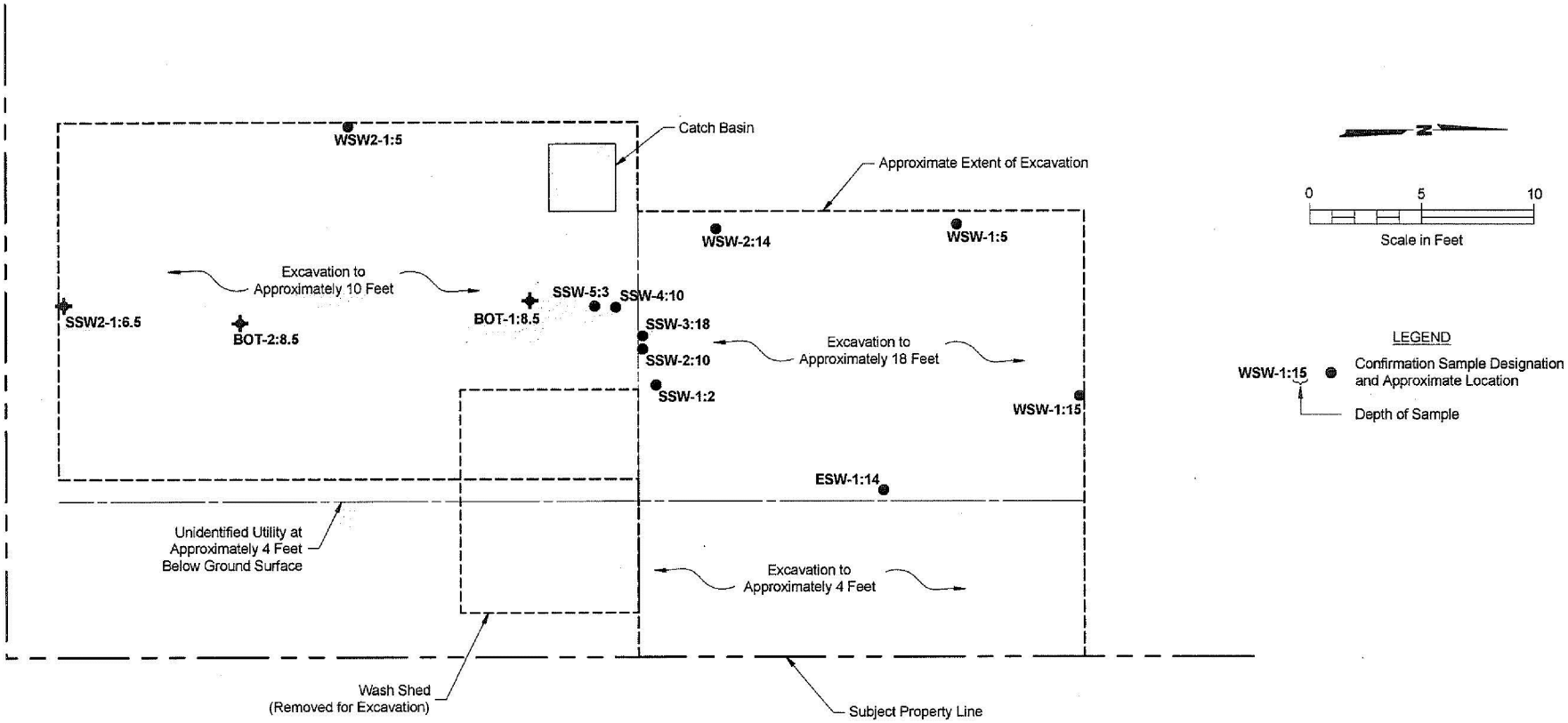
Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

HVOC Area Explorations with Soil Results

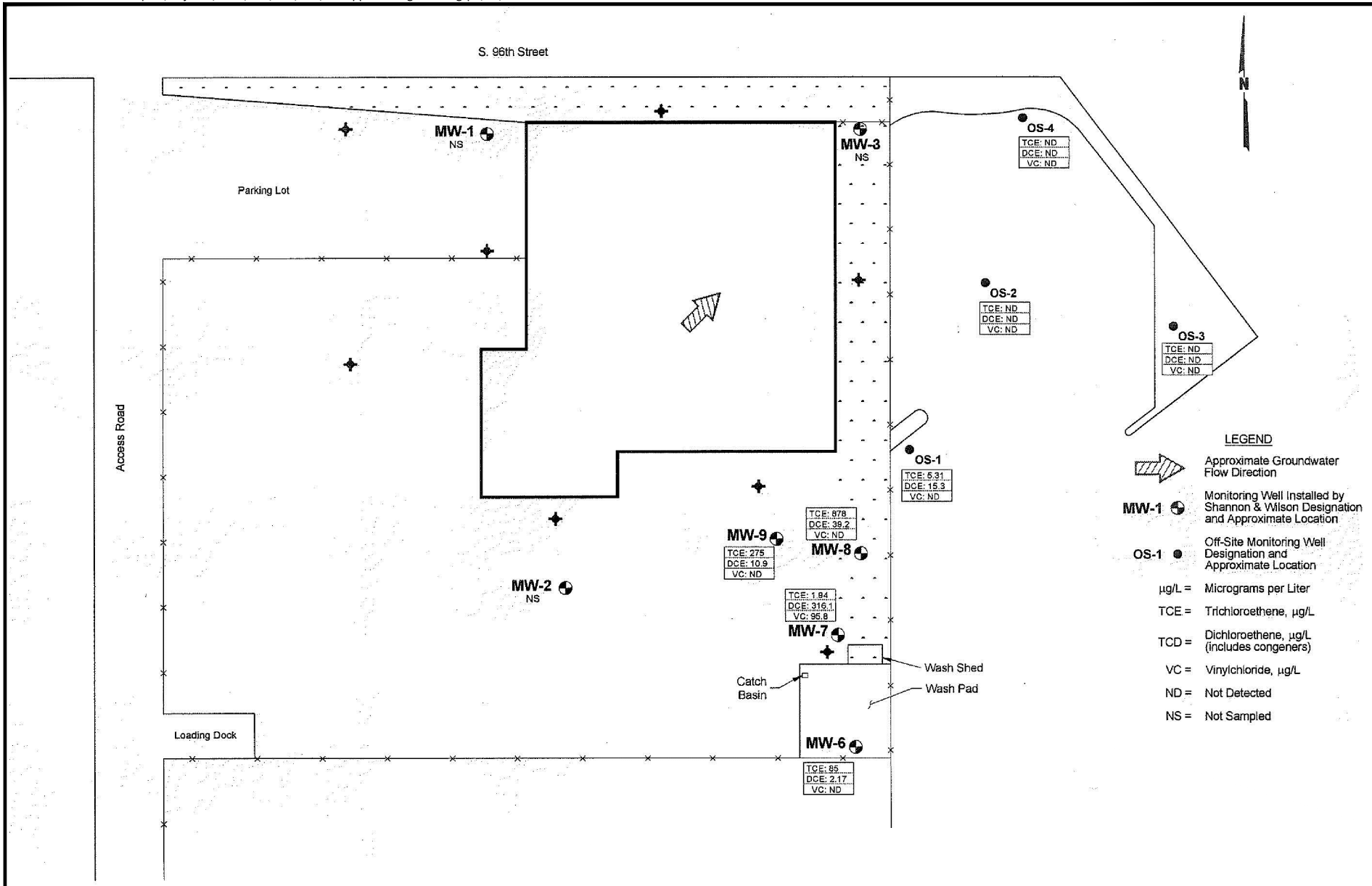
Figure
A-6



Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc. Seattle, Washington	**Remedial Excavation Area**	Figure A-7



Source: Shannon & Wilson, 2014

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Groundwater Monitoring Results
First Quarter 2014

Figure
A-8

APPENDIX B

Riley Group Inc. Sample Results Summary Figure

MW4/B4

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs	Other VOCs
06/30/16	Water	5.84	ND	3.9	16	4.9	ND	ND
03/07/16	Water	5.28	ND	ND	7.4	4.6	ND	----
08/21/14	Water	4.56	ND	7.02	31.9	6.43	ND	ND
05/22/14	Water	----	ND	5.35	16.8	7.26	ND	ND
02/14/14	Water	----	ND	5.31	15.3	ND	ND	ND
08/16/13	Water	----	ND	9.05	38.0	14.6	ND	ND
01/16/08	Water	6.81	ND	140	63	9.8	ND	EDC=1.0 EC=7.3 1,3-DB=1.6
01/11/08	Water	6.81	ND	150ve	70	12	ND	EDC=1.1
01/02/08	Soil	4'	ND	ND	ND	ND	ND	----

MW14

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs
09/12/16	Water	5.82'	ND	ND	ND	ND	ND
06/30/16	Water	5.11'	ND	ND	ND	ND	ND
05/06/16	Water	4.64'	ND	ND	ND	ND	ND
03/04/16	Soil	5'	ND	ND	ND	ND	ND
03/04/16	Soil	10'	ND	ND	ND	ND	ND

MW8

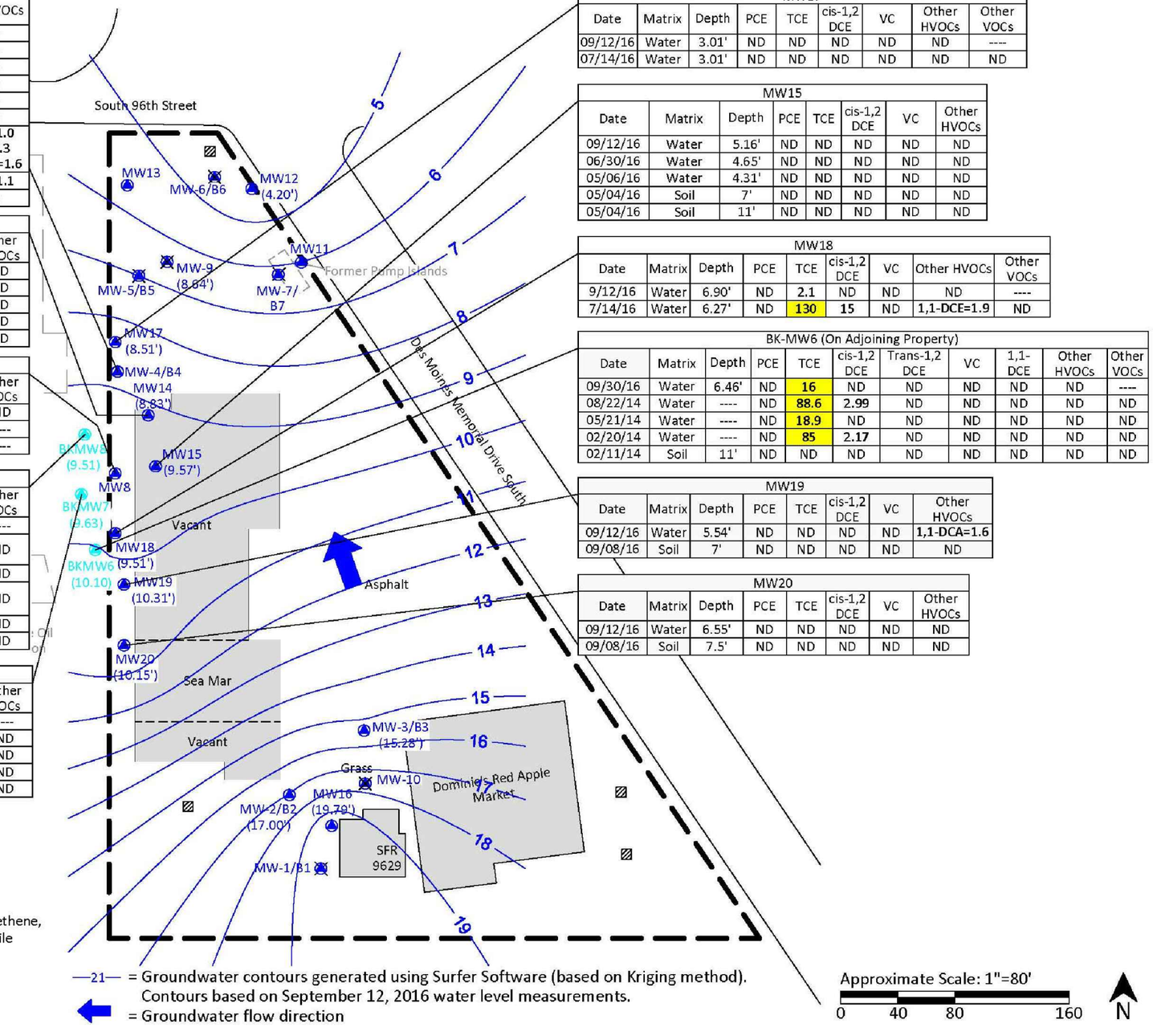
Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs	Other VOCs
06/30/16	Water	4.78'	ND	33	7.0	ND	1,1-DCE=1.7	ND
03/07/16	Water	4.68'	ND	20	5.5	ND	1,1-DCA=1.9	----
03/04/16	Soil	5.5'	ND	ND	ND	ND	ND	----

BK-MW8 (On Adjoining Property)

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs	Other VOCs
09/30/16	Water	4.13'	ND	62	8.3	ND	ND	----
08/22/14	Water	----	ND	615	22.1	ND	EDC=4.87 1,1-DCE=1.05	ND
05/21/14	Water	----	ND	558	23.1	ND	ND	ND
02/14/14	Water	----	ND	878	32.0	ND	EDC=7.19 1,1-DCE=1.97	ND
02/11/14	Soil	9'	ND	ND	0.0535	ND	ND	ND
02/11/14	Soil	14.5'	ND	0.282	ND	ND	ND	ND

BK-MW7 (On Adjoining Property)

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs	Other VOCs
09/30/16	Water	8.31'	ND	300	50	3.3	EDC=5.6	----
08/22/14	Water	----	ND	ND	30.0	8.19	EDC=1.76	ND
05/21/14	Water	----	ND	ND	143	34.5	EDC=2.79	ND
02/14/14	Water	----	ND	1.94	297	95.8	EDC=15.7	ND
02/11/14	Soil	15'	ND	0.168	ND	ND	ND	ND



MW17

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs	Other VOCs
09/12/16	Water	3.01'	ND	ND	ND	ND	ND	----
07/14/16	Water	3.01'	ND	ND	ND	ND	ND	ND

MW15

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs
09/12/16	Water	5.16'	ND	ND	ND	ND	ND
06/30/16	Water	4.65'	ND	ND	ND	ND	ND
05/06/16	Water	4.31'	ND	ND	ND	ND	ND
05/04/16	Soil	7'	ND	ND	ND	ND	ND
05/04/16	Soil	11'	ND	ND	ND	ND	ND

MW18

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs	Other VOCs
9/12/16	Water	6.90'	ND	2.1	ND	ND	ND	----
7/14/16	Water	6.27'	ND	130	15	ND	1,1-DCE=1.9	ND

BK-MW6 (On Adjoining Property)

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	Trans-1,2 DCE	VC	1,1-DCE	Other HVOCs	Other VOCs
09/30/16	Water	6.46'	ND	16	ND	ND	ND	ND	ND	----
08/22/14	Water	----	ND	88.6	2.99	ND	ND	ND	ND	ND
05/21/14	Water	----	ND	18.9	ND	ND	ND	ND	ND	ND
02/20/14	Water	----	ND	85	2.17	ND	ND	ND	ND	ND
02/11/14	Soil	11'	ND	ND	ND	ND	ND	ND	ND	ND

MW19

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs
09/12/16	Water	5.54'	ND	ND	ND	ND	1,1-DCA=1.6
09/08/16	Soil	7'	ND	ND	ND	ND	ND

MW20

Date	Matrix	Depth	PCE	TCE	cis-1,2 DCE	VC	Other HVOCs
09/12/16	Water	6.55'	ND	ND	ND	ND	ND
09/08/16	Soil	7.5'	ND	ND	ND	ND	ND

= Soil Analytical Laboratory Result in mg/kg, Groundwater in ug/L;

PCE = Tetrachloroethene, TCE = Trichloroethene, cis-1,2-DCE = Cis-1,2-dichloroethene, Trans-1,2-DCE = Trans-1,2-dichloroethene, VC = Vinyl chloride, 1,1-DCE = 1,1-Dichloroethene, EDC = 1,2-Dichloroethane, 1,1-DCA = 1,1-Dichloroethane, HVOCs = Halogenated Volatile Organic Compounds, VOCs = Volatile Organic Compounds

ND = Not Detected Above Laboratory Detection Limits

---- = Not Analyzed

Bold and yellow highlighted results, if any, exceed MTCA Cleanup Level.

= Monitoring well by others

= Monitoring well by RGI

= Stormwater catch basin

= Site boundary

—21— = Groundwater contours generated using Surfer Software (based on Kriging method). Contours based on September 12, 2016 water level measurements.

= Groundwater flow direction

Approximate Scale: 1"=80'

0 40 80 160

N

Source: Riley Group, 2016

Landau Associates | G:\Projects\1645\001\010\014\F08 Appendix Figures.dwg | 5/8/2017 9:47 AM

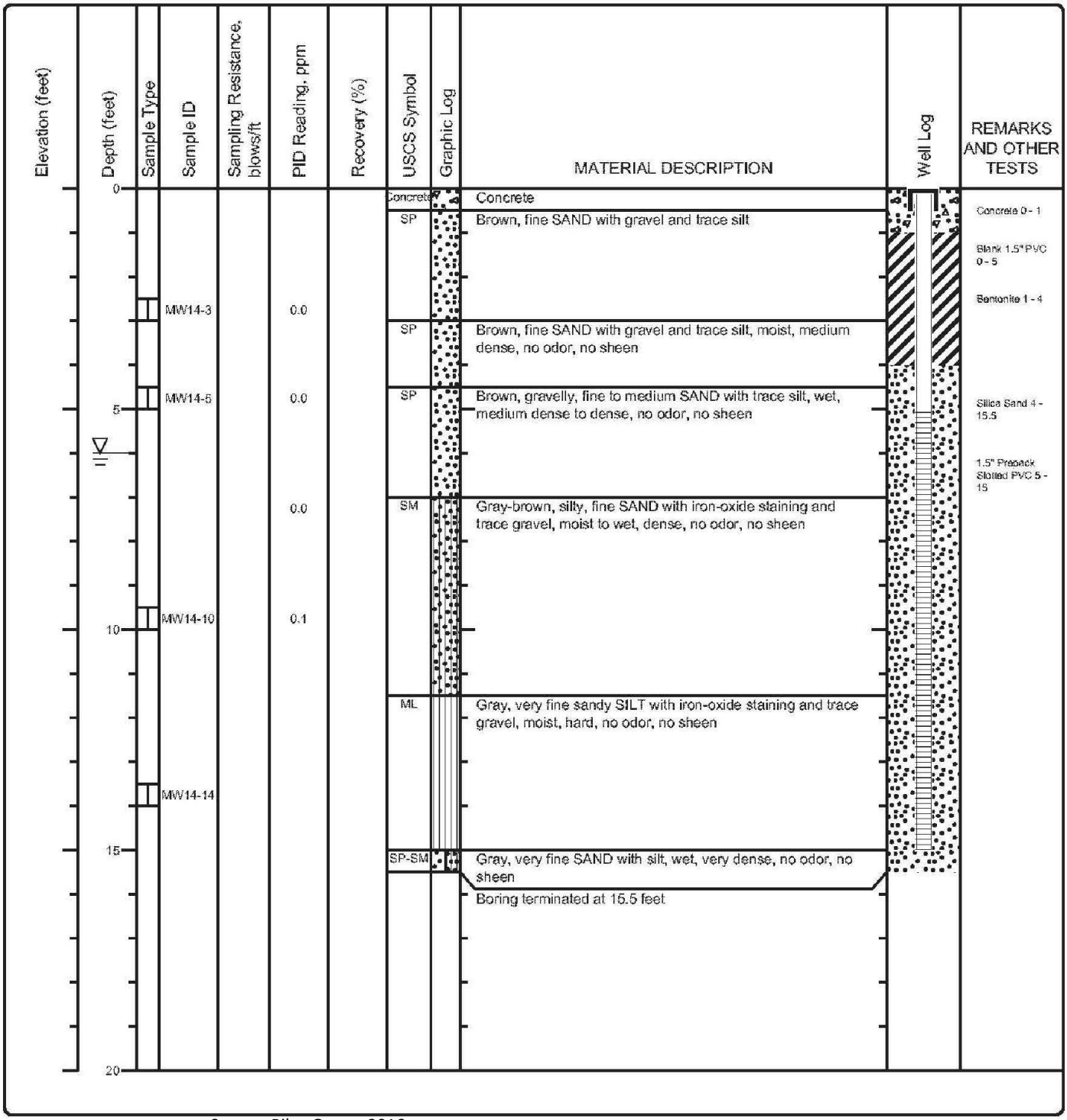
LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

Site Plan Showing Monitoring Well Locations with Soil and Groundwater Analytical Laboratory Results

Figure
B-1

Date(s) Drilled: **05/04/16**	Logged By: **AJ**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3" Diameter**	Total Depth of Borehole: **15.5 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **n/a**
Groundwater Level: **6'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **9635 Des Moines Memorial Drive South, Seattle, Washington 98108**	



Source: Riley Group, 2016

Landau Associates | G:\Projects\1645\001\010\014\F08 Appendix Figures.dwg | 5/8/2017 9:47 AM

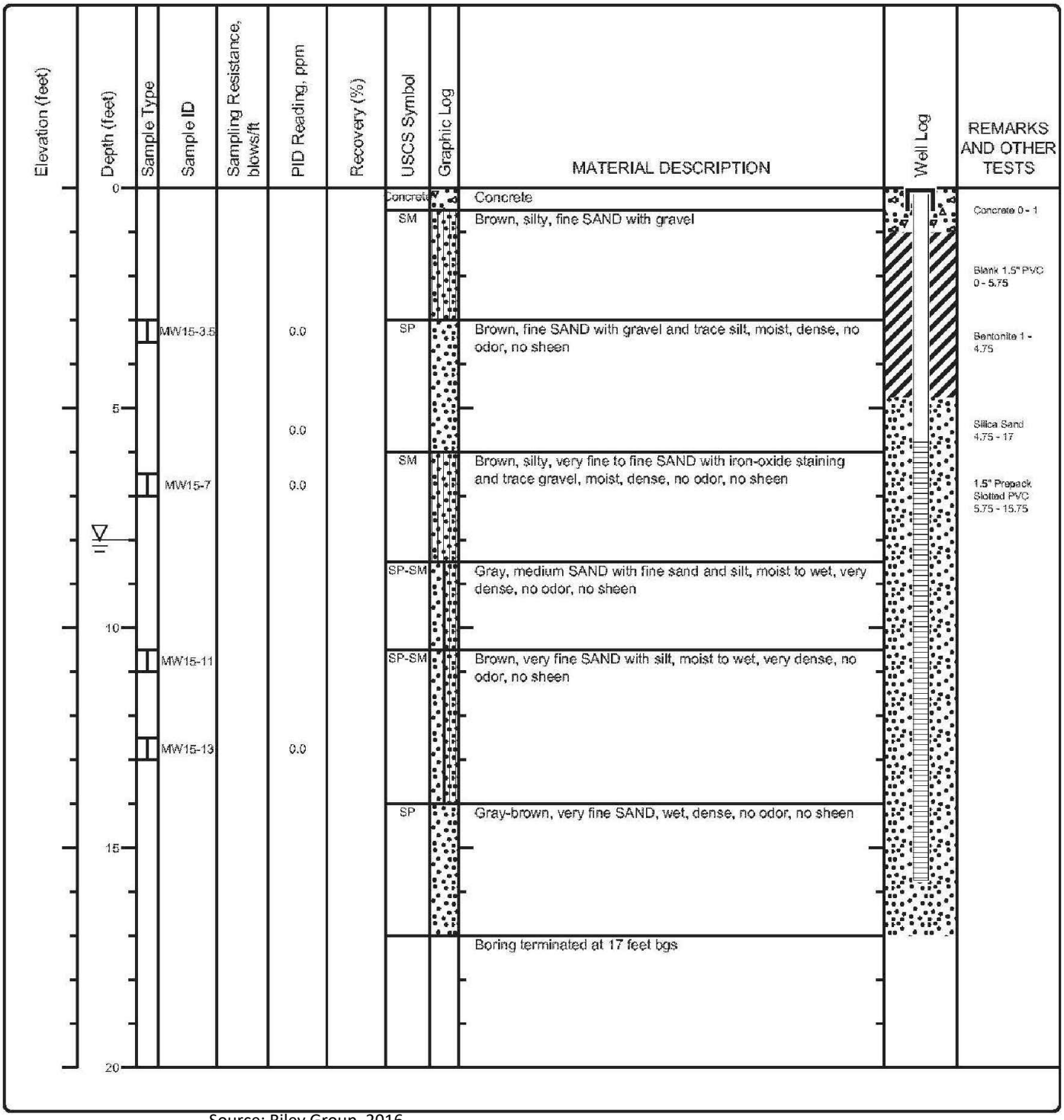
LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

MW 14
Sheet 1 of 1

Figure
B-2

Date(s) Drilled: **05/04/16**	Logged By: **AJ**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3" Diameter**	Total Depth of Borehole: **17 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **n/a**
Groundwater Level: **8'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **9635 Des Moines Memorial Drive South, Seattle, Washington 98108**	



Source: Riley Group, 2016

Landau Associates | G:\Projects\1645\001\010\014\F08 Appendix Figures.dwg | 5/8/2017 9:47 AM

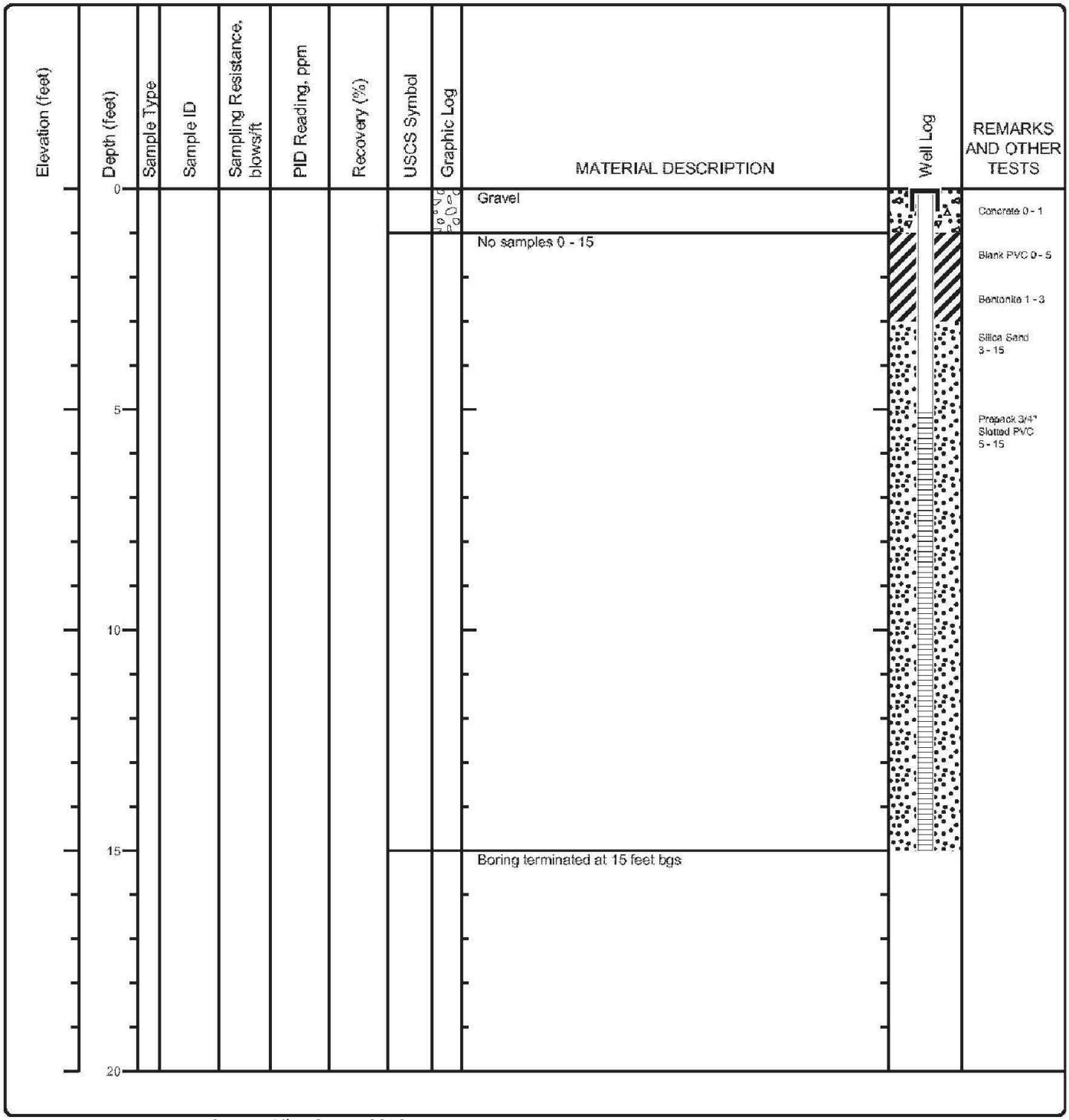
LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

MW 15
Sheet 1 of 1

Figure
B-3

Date(s) Drilled: **07/14/16**	Logged By: **PR**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **15 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **n/a**
Groundwater Level: **Not Encountered**	Sampling Method(s): **None**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **9635 Des Moines Memorial Drive South, Seattle, Washington 98108**	

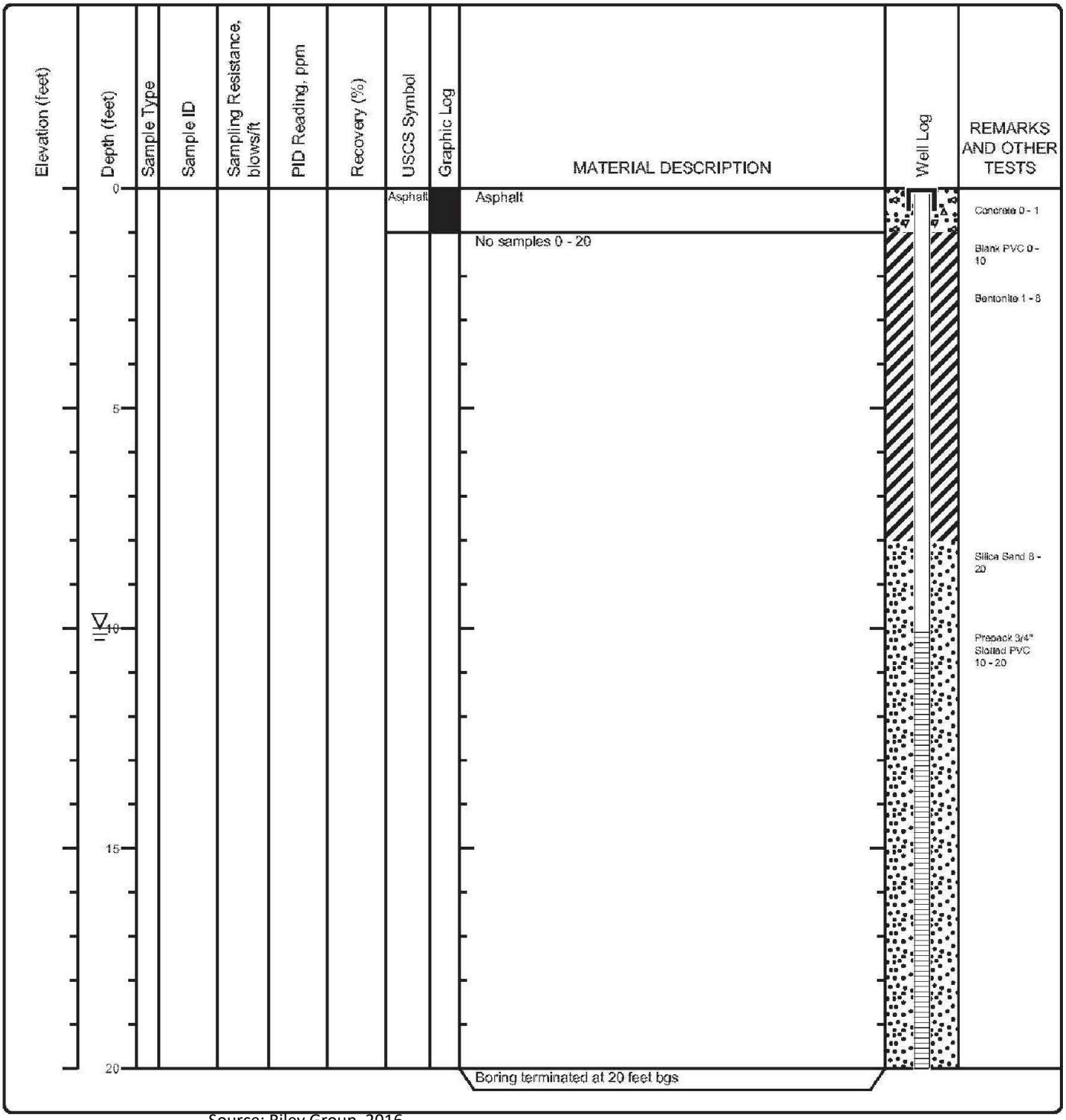


Source: Riley Group, 2016

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc. Seattle, Washington	**MW 17** **Sheet 1 of 1**	Figure **B-4**

Date(s) Drilled: **07/14/16**	Logged By: **PR**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Diameter**	Total Depth of Borehole: **20 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **n/a**
Groundwater Level: **10'**	Sampling Method(s): **None**	Hammer Data : **n/a**
Borehole Backfill: **Monitoring Well**	Location: **9635 Des Moines Memorial Drive South, Seattle, Washington 98108**	



Source: Riley Group, 2016

Landau Associates | G:\Projects\1645\001\010\014\F08 Appendix Figures.dwg | 5/8/2017 9:47 AM

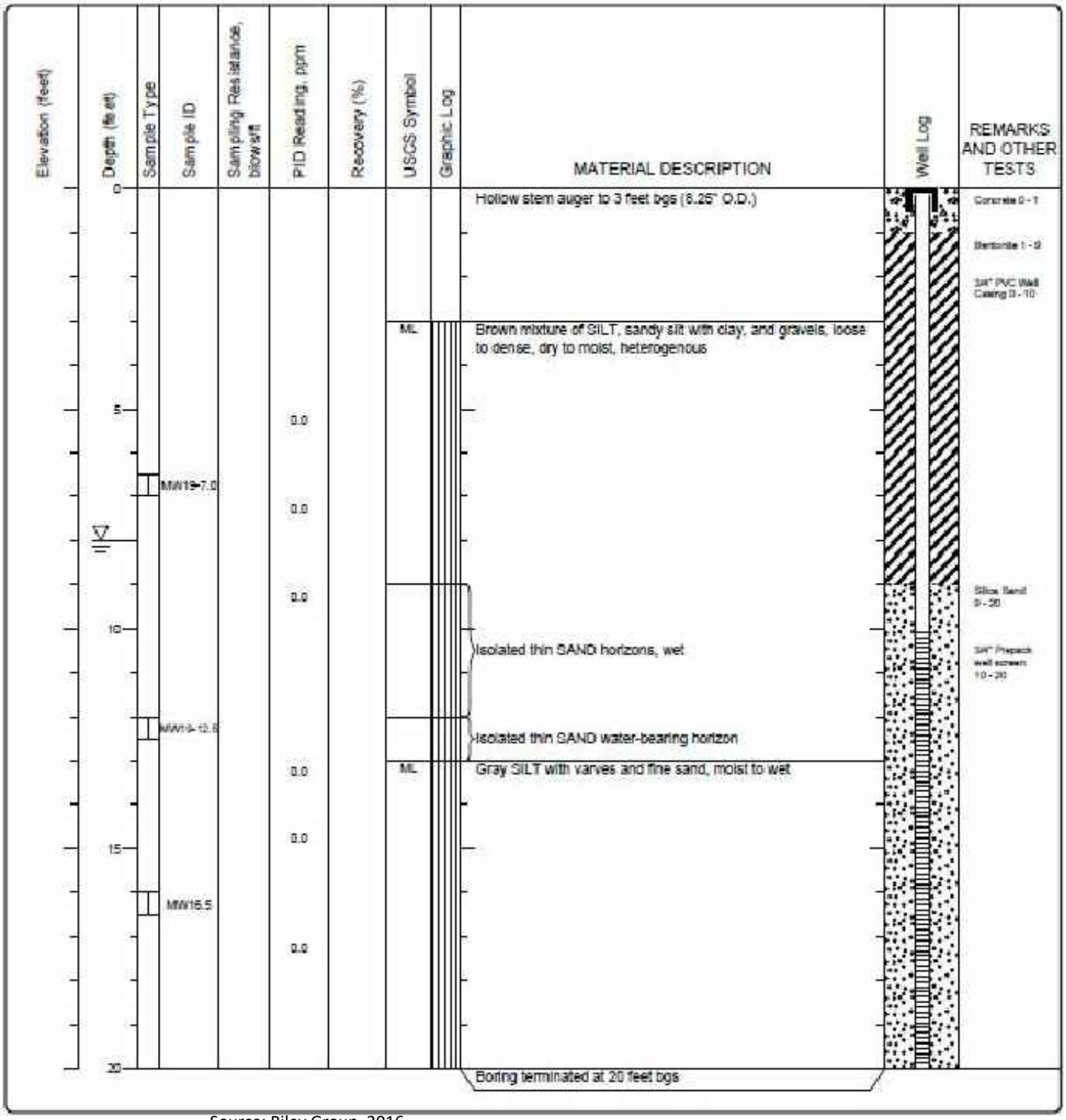
LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

MW 18
Sheet 1 of 1

Figure
B-5

Date(s) Drilled: 09/08/2016	Logged By: PDR	Surface Conditions: Asphalt
Drilling Method(s): Direct Push/ Hollow Stem Auger	Drill Bit Size/Type: 3.25" O.D.	Total Depth of Borehole: 20 feet bgs
Drill Rig Type: Track-Mounted	Drilling Contractor: RGI	Approximate Surface Elevation (feet amsl): n/a
Groundwater: 8 feet bgs	Sampling Method(s): Continuous	Hammer Data: n/a
Borehole Backfill: Monitoring Well	Location: 9635 Des Moines Memorial Drive South, Seattle, Washington 98108	



Source: Riley Group, 2016

Landau Associates | G:\Projects\1645\001\010\014\F08 Appendix Figures.dwg | 5/8/2017 9:47 AM

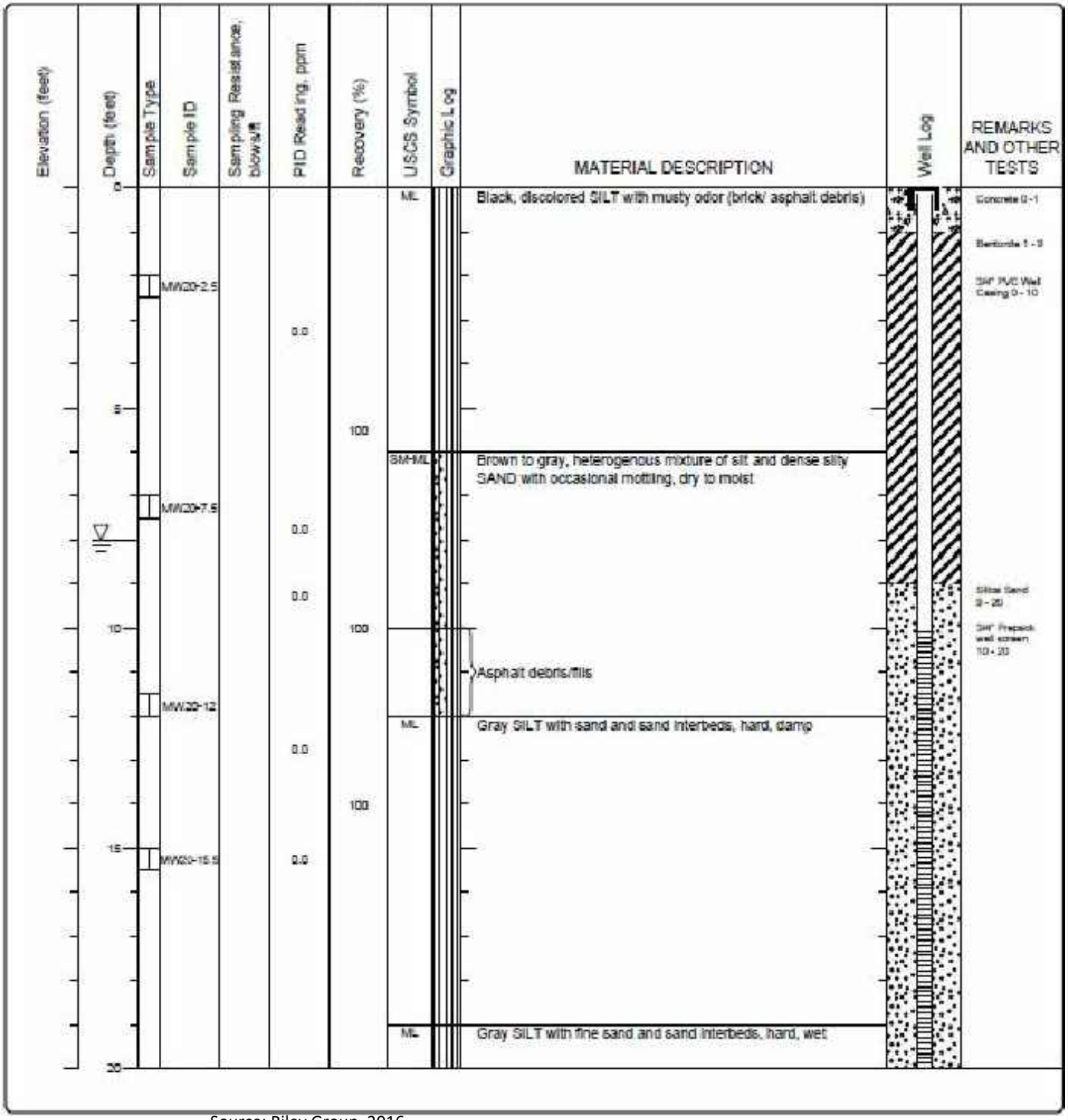
LANDAU ASSOCIATES

Beckwith & Kuffel, Inc.
Seattle, Washington

MW 19
Sheet 1 of 1

Figure
B-6

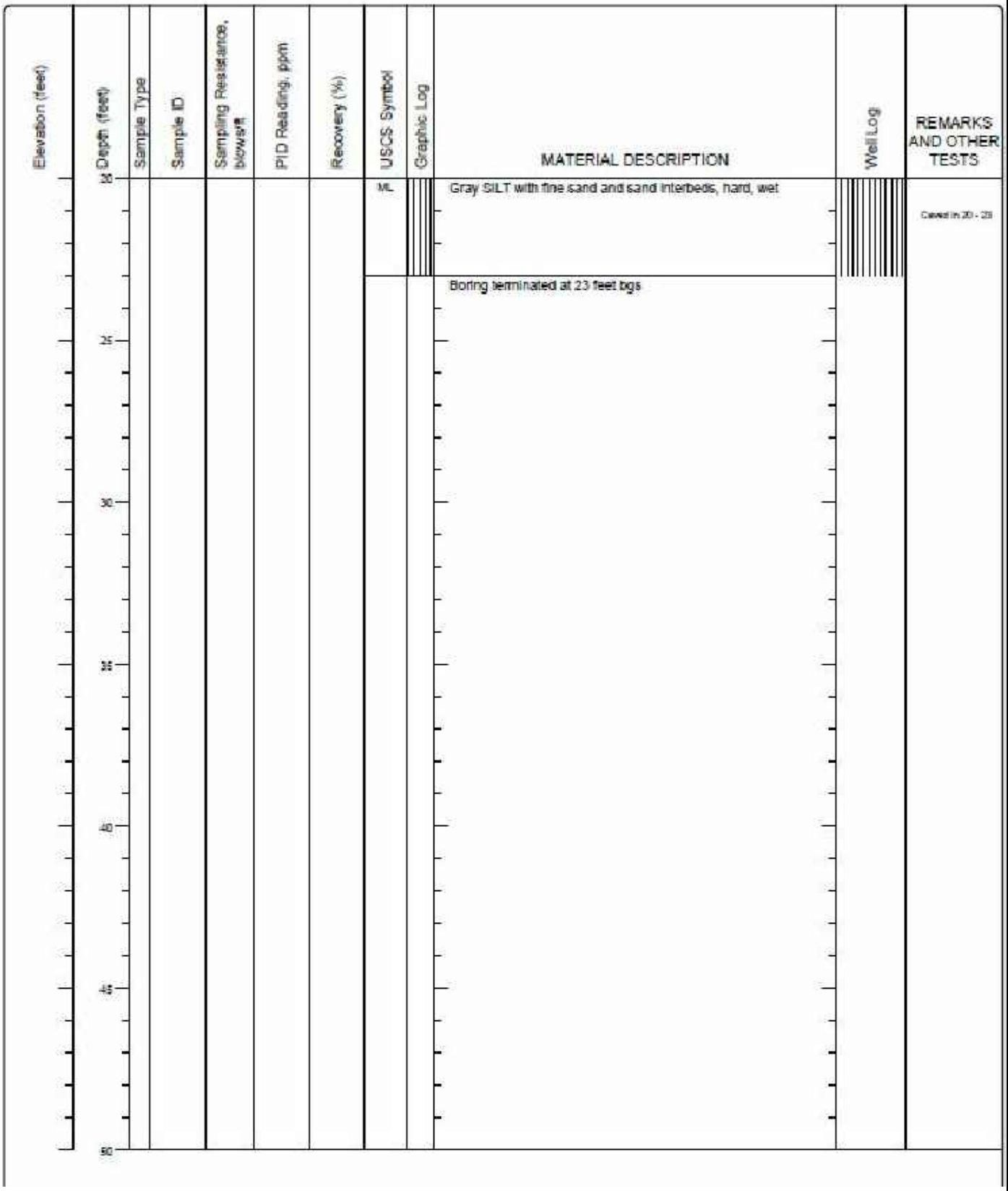
Date(s) Drilled: **09/08/2016**	Logged By: PDR	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push/ Hollow Stem Auger**	Drill Bit Size/Type: **3.25" O.D.**	Total Depth of Borehole: **23 feet bgs**
Drill Rig Type: **Track-Mounted**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **n/a**
Groundwater: **8 feet bgs**	Sampling Method(s): **Continuous**	Hammer Data: **n/a**
Borehole Backfill: **Monitoring Well**	Location: **9635 Des Moines Memorial Drive South, Seattle, Washington 98108**	



Source: Riley Group, 2016

LANDAU ASSOCIATES	Beckwith & Kuffel, Inc. Seattle, Washington	**MW 20** **Sheet 1 of 2**

Figure
B-7



Source: Riley Group, 2016

LANDAU ASSOCIATES	Beckwith & Kuffel, Inc. Seattle, Washington	**MW 20** **Sheet 2 of 2**

Figure
B-8

APPENDIX C

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.

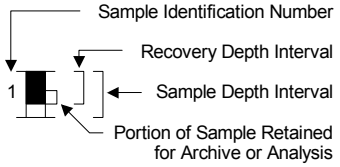
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

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

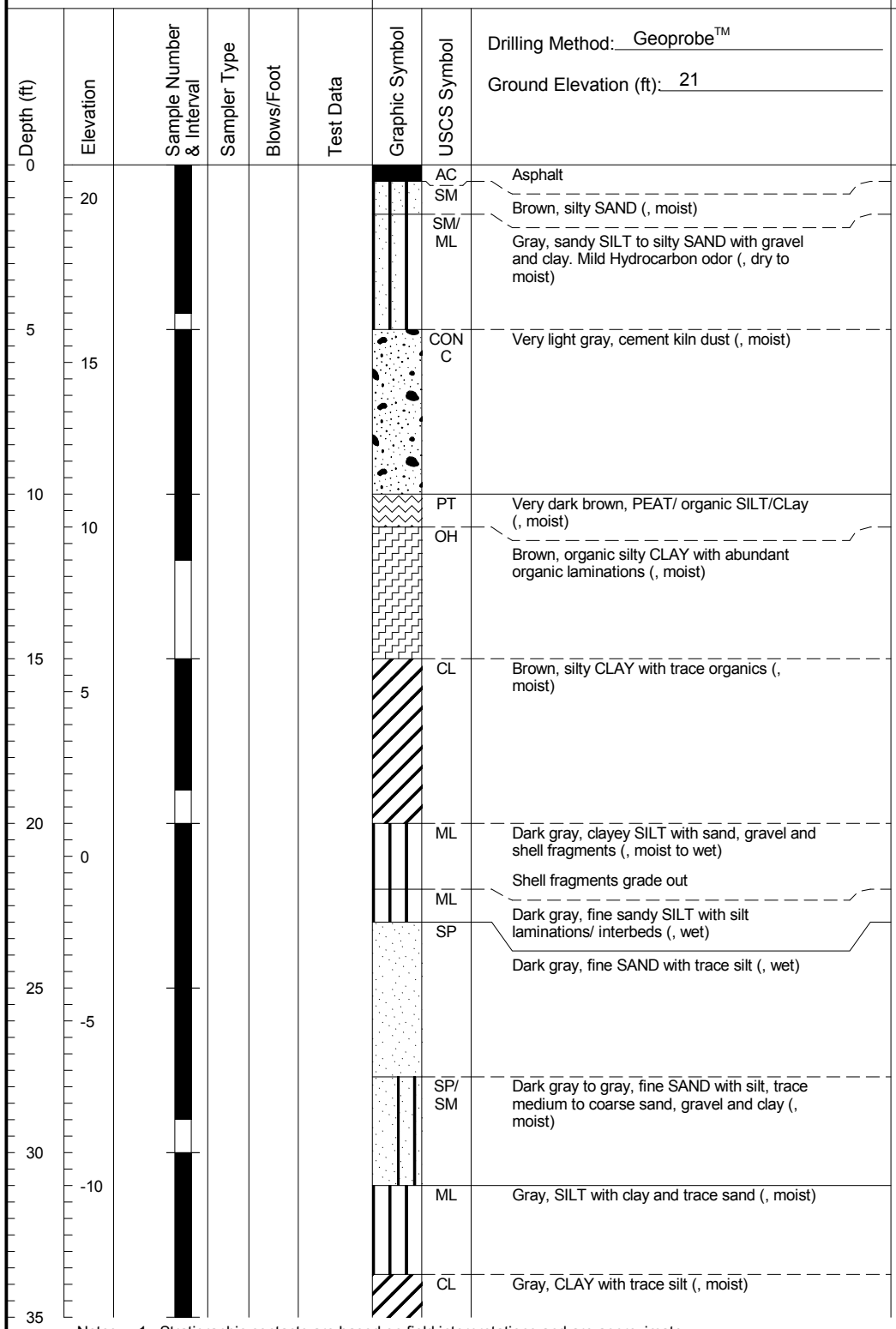
LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Soil Classification System and Key

Figure C-1

LB-11



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.

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Log of LB-11

Figure
C-2
(1 of 2)

LB-11

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 21	Water Level
35	-15						CL	Gray, CLAY with trace silt (, moist)	
40									

Boring Completed 12/13/16
Total Depth of Boring = 40.0 ft.

45

50

55

60

65

70

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.

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Log of LB-11

Figure
C-2
(2 of 2)

LB-12

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

Drilling Method: Geoprobe™

Ground Elevation (ft): 24

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description	Water Level
0							AC	Asphalt	
							SM	Dark gray, silty SAND with gravel. moderate hydrocarbon odor (, moist)	
	20							Brick debris at 3.5 feet	
5									ATD
							SP-SM	Very dark brown and gray, gravelly SAND with silt and abundant organics (, wet)	
	15						CL	Dark brown, silty CLAY with sand (, moist)	
10							ML	Light gray, SILT with sand, trace clay and organics (, moist)	
							CL	Brown with oxide stains, silty CLAY with fine sand and gravel (, moist to wet)	
							CL	Gray with oxide stains, CLAY with silt and trace fine sand and gravel, trace to occasional organics (, moist)	
	10						ML	Gray and brown with oxide stains, clayey SILT to SILT with fine sand and gravel	
15									
							CL	Gray with occasional oxide stains, silty CLAY with trace sand (, moist)	
	5								
20							CL	Gray, silty CLAY with trace sand and gravel with occasional silt layers (, moist)	
	0						ML	Gray, SILT with clay grading to trace clay with depth (, moist)	
25									
	-5								
30									
35									

Boring Completed 12/13/16
Total Depth of Boring = 30.0 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.

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Log of LB-12

Figure
C-3

LB-13

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

Drilling Method: Geoprobe™

Ground Elevation (ft): 22

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description	Water Level
0	20						SM	Brown, silty SAND with gravel and organics (, moist)	
							SM/ ML	Brown, gravelly, clayey, SAND/SILT with occasional organics (, moist)	
5							GM/ SM	Dark gray, silty gravelly SAND/sandy GRAVEL with debris (, moist)	
							ML/ CL	Brown, sandy clayey SILT/ silty CLAY (, moist)	
	15						ML	Gray and Brown, clayey SILT with sand, gravel and organics (, moist to wet)	ATD
							CL		
10							SP-SM	Gray, CLAY with silt (, moist)	
							PT	Gray/ brown mottled, gravelly SAND with silt (, moist)	
	10						OL	Red-brown, PEAT (, moist)	
								Brown, organic silty CLAY with abundant organics (, moist)	
15									
	5						CL	Brown, organic, silty CLAY, with trace organics (, moist)	
20								Grades to no organics at 21 feet	
	0							Occasional shell fragments at 22 feet	
							CL	Gray, silty CLAY with sand occasion shell fragments (, moist)	
							SM		
25							SM	Gray, silty SAND with clay and abundant shell fragments (, moist)	ATD
	-5							Gray with orange oxide staining, silty SAND with gravel and coarse sand (, moist to wet)	
30									
	-10						ML	Gray, clayey SILT with fine sand and subangular gravel (, moist)	
35									

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

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Log of LB-13

Figure
C-4
(1 of 2)

LB-13

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

Drilling Method: Geoprobe™

Ground Elevation (ft): 22

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Description	Water Level
35	-15						ML	Gray, clayey SILT with fine sand and subangular gravel (, moist) Increasing clay content with depth	
							SM	Gray, silty, fine SAND with gravel (, wet)	
40	-20						ML	Gray SILT with sand and gravel (, moist)	
							SP-SM	Gray, medium to fine SAND with silt (, moist)	
45	-25								
50	-30								
55									
60									
65									
70									

Boring Completed 12/14/16
Total Depth of Boring = 55.0 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.

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

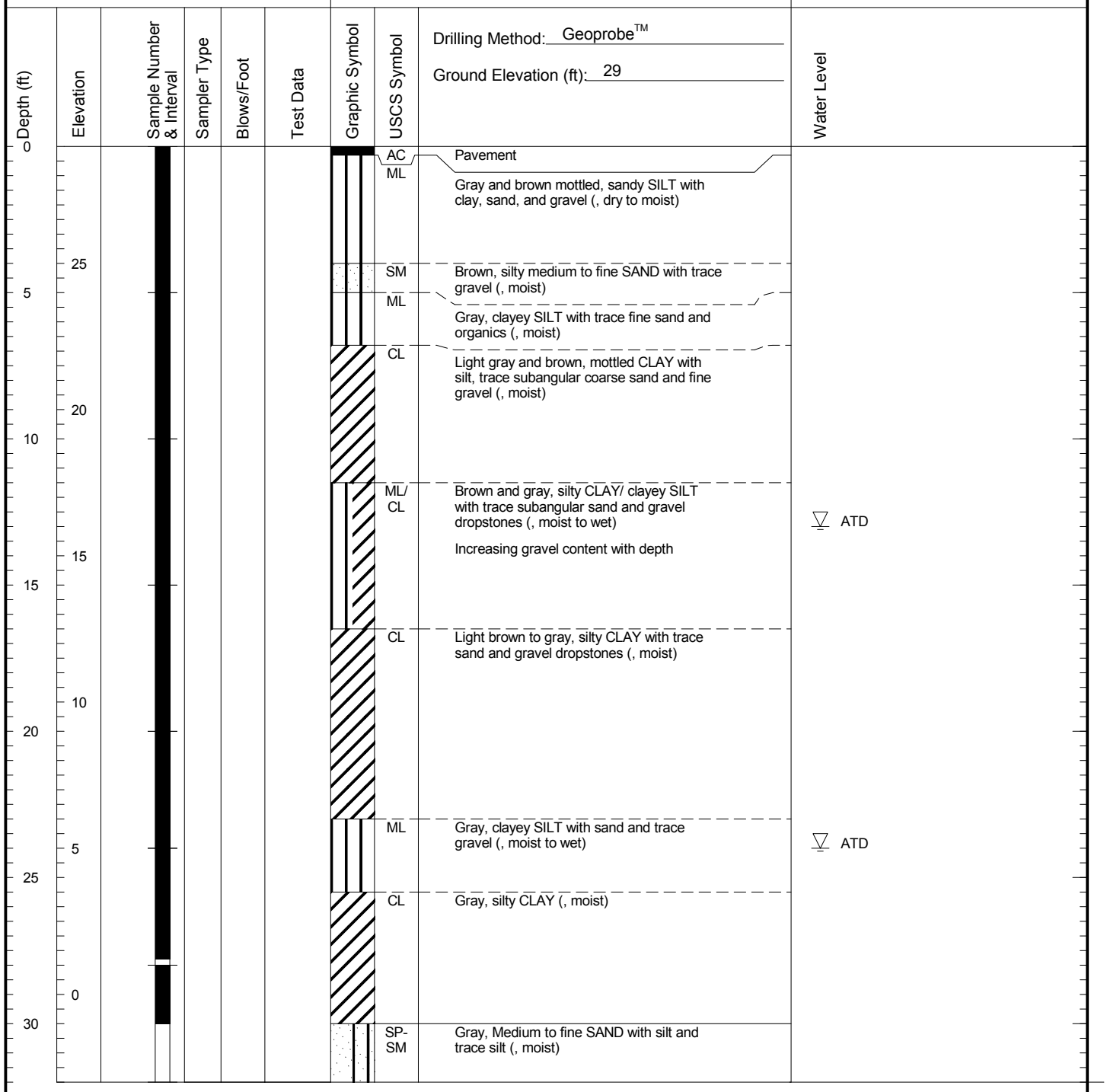
LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Log of LB-13

Figure
C-4
(2 of 2)

LB-15



Boring Completed 01/28/17
Total Depth of Boring = 32.0 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.

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Beckwith & Kuffel Seattle, Washington	Log of LB-15	Figure C-5

LB-17

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 29	Water Level
0							AC	Pavement	
							SM/ ML	Brown and gray, sandy SILT/ silty SAND with gravel and trace clay (, dry)	
	25						ML	Gray to light brown, fine sandy SILT with trace gravel (, dry to moist)	
5							CL	Light brown/ light gray with oxide stains, silty CLAY with trace organics (, moist)	
							CL	Light brown/ light gray with oxide stains, silty CLAY with trace organics. Moderate hydrocarbon odor (, moist)	
	20						CL	Light brown/ light gray with oxide stains, silty CLAY with trace sand and gravel with occasional sand partings (, moist)	▽ ATD
10									
	15								
15							CL	Light brown/ light gray with oxide stains, silty CLAY with trace sand and gravel dropstones (, moist)	
	10								
20							ML	Light gray, clayey SILT (, moist)	
	5								
25									

Boring Completed 01/28/17
Total Depth of Boring = 25.0 ft.

30

35

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

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

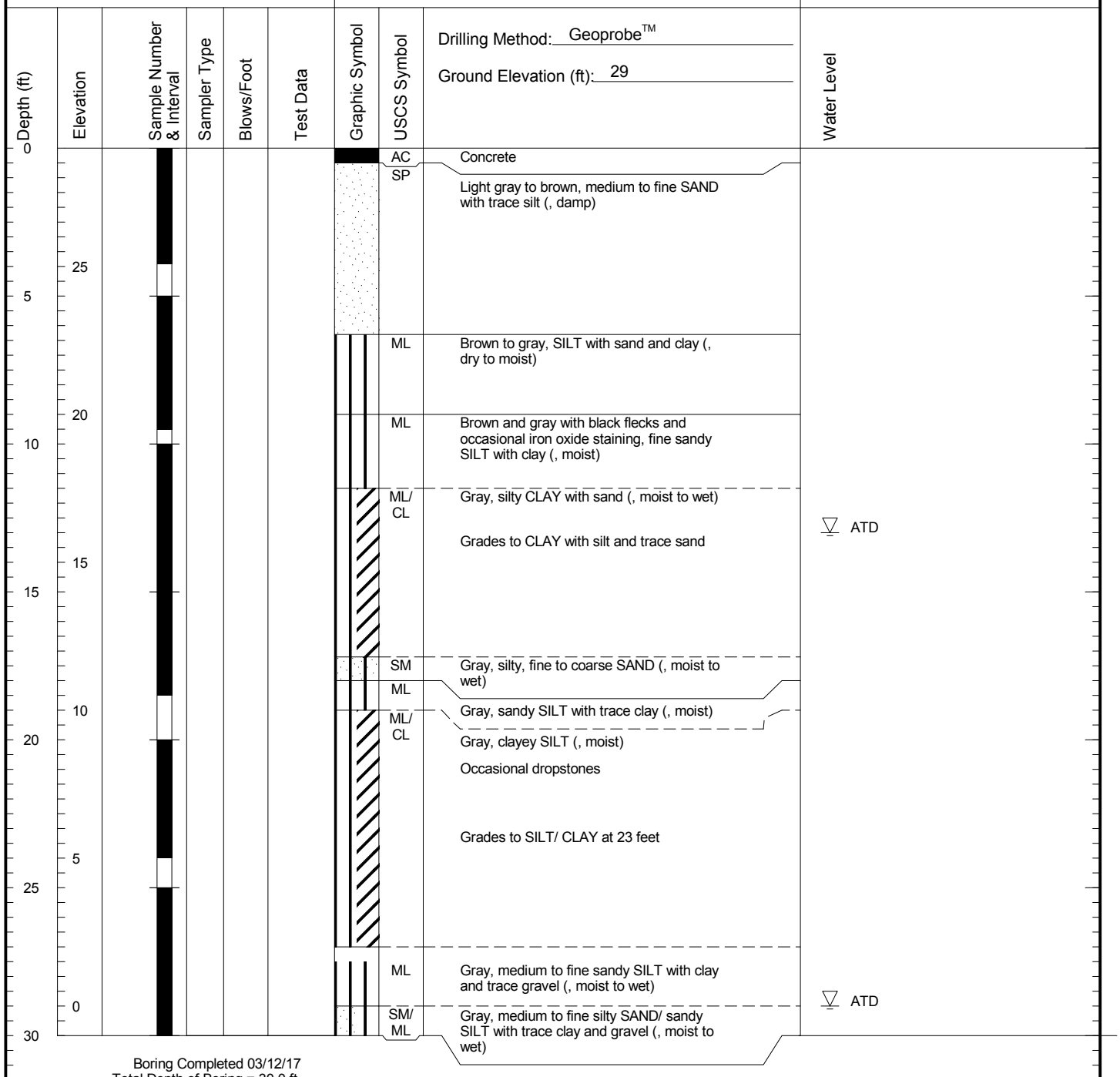
LANDAU ASSOCIATES

Beckwith & Kuffel
Seattle, Washington

Log of LB-17

Figure
C-6

LB-18



Boring Completed 03/12/17
Total Depth of Boring = 30.0 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.

1645001.010.013 6/5/17 N:\PROJECTS\1645001.010.013.GPJ SOIL BORING LOG W/ ELEV

LANDAU ASSOCIATES

Beckwith & Kuffel Seattle, Washington	Log of LB-18	Figure C-7

APPENDIX D

Analytical Laboratory Reports

December 2, 2016

Mr. Cody Johnson
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Johnson,

On November 30th, 4 samples were received by our laboratory and assigned our laboratory project number EV16110203. The project was identified as your B & K. 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 98208 | 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:	12/2/2016
		ALS JOB#:	EV16110203
		ALS SAMPLE#:	EV16110203-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 11:00:00 AM
CLIENT SAMPLE ID	MW-1-112916	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	12/01/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/01/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/01/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/01/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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:	12/2/2016
		ALS JOB#:	EV16110203
		ALS SAMPLE#:	EV16110203-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 11:00:00 AM
CLIENT SAMPLE ID	MW-1-112916	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	12/01/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/01/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**99.5**	12/01/2016	DLC
4-Bromofluorobenzene	EPA-8260	**95.1**	12/01/2016	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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:	12/2/2016
		ALS JOB#:	EV16110203
		ALS SAMPLE#:	EV16110203-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 2:10:00 PM
CLIENT SAMPLE ID	MW-2-112916	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	12/01/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	12/01/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/01/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/01/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/01/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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:	12/2/2016
		ALS JOB#:	EV16110203
		ALS SAMPLE#:	EV16110203-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 2:10:00 PM
CLIENT SAMPLE ID	MW-2-112916	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/01/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	**104**	12/01/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**100**	12/01/2016	DLC
4-Bromofluorobenzene	EPA-8260	**97.6**	12/01/2016	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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:	12/2/2016
		ALS JOB#:	EV16110203
		ALS SAMPLE#:	EV16110203-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 12:15:00 PM
CLIENT SAMPLE ID	MW-3-112916	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	12/01/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/01/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/01/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/01/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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#:	12/2/2016 EV16110203 EV16110203-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 12:15:00 PM
CLIENT SAMPLE ID	MW-3-112916	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	12/01/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/01/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**94.7**	12/01/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.4**	12/01/2016	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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:	12/2/2016
		ALS JOB#:	EV16110203
		ALS SAMPLE#:	EV16110203-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 1:00:00 PM
CLIENT SAMPLE ID	MW-9-112916	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	130	1	UG/L	12/01/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	250	1	UG/L	12/01/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/01/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/01/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	**12**	2.0	1	UG/L	12/01/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trichloroethene	EPA-8260	**78**	20	10	UG/L	12/01/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/01/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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#:	12/2/2016 EV16110203 EV16110203-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	11/30/2016
CLIENT PROJECT:	B & K	COLLECTION DATE:	11/29/2016 1:00:00 PM
CLIENT SAMPLE ID	MW-9-112916	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/01/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/01/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWTPH-DX	**108**	12/01/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**93.5**	12/01/2016	DLC
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	**82.8**	12/01/2016	DLC
4-Bromofluorobenzene	EPA-8260	**98.6**	12/01/2016	DLC
4-Bromofluorobenzene 10X Dilution	EPA-8260	**92.1**	12/01/2016	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B & K

DATE: 12/2/2016
ALS SDG#: EV16110203
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-120116W - Batch 110385 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	UG/L	130	12/01/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	UG/L	250	12/01/2016	EBS

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

MB-113016W - Batch 110328 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	11/30/2016	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	11/30/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Chloroform	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Toluene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	11/30/2016	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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

CLIENT CONTACT: Cody Johnson

CLIENT PROJECT: B & K

DATE: 12/2/2016

ALS SDG#: EV16110203

WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-113016W - Batch 110328 - Water by EPA-8260

Bromoform	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	11/30/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	11/30/2016	DLC

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

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | 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

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B & K

DATE: 12/2/2016
ALS SDG#: EV16110203
WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 110385 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	**89.3**			67	125.2	12/01/2016	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	**99.0**	**10**		67	125.2	12/01/2016	EBS

ALS Test Batch ID: 110328 - 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	11/30/2016	DLC
1,1-Dichloroethene - BSD	EPA-8260	**99.5**	**10**		72.5	136	11/30/2016	DLC
Trichloroethene - BS	EPA-8260	**95.2**			74.4	141	11/30/2016	DLC
Trichloroethene - BSD	EPA-8260	**88.6**	**7**		74.4	141	11/30/2016	DLC
Toluene - BS	EPA-8260	**100**			71.7	139	11/30/2016	DLC
Toluene - BSD	EPA-8260	**94.5**	**6**		71.7	139	11/30/2016	DLC
Chlorobenzene - BS	EPA-8260	**110**			73	131	11/30/2016	DLC
Chlorobenzene - BSD	EPA-8260	**101**	**9**		73	131	11/30/2016	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1611 0203

Date 11/29/16 Page 1 Of 1

PROJECT ID: B & K
REPORT TO COMPANY: Landau Associates
PROJECT MANAGER: Cody Johnson
ADDRESS: 130 2nd ave. S.
Edmonds, WA 98020
PHONE: ~~425 778 0907~~ FAX: 425 329 0323
P.O. #: B & K E-MAIL: CJohnson@landauinc.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW-1-112916	11/29/16	11:00	H_2O	1						X										3	
2. MW-2-112916	11/29/16	14:10	H_2O	2		X				X										4	
3. MW-3-112916	11/29/16	12:15	H_2O	3						X										3	
4. MW-9-11296	11/29/16	13:00	H_2O	4		X				X										4	
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: Nicolas Navarro, LAI, 11/30/16, 10:00
   Received By: Shawn Robinson ALS 11/30/16 2:55pm
2. Relinquished By: _____
   Received By: _____

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ~~10~~ Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify: _____

*Turnaround request less than standard may incur Rush Charges

ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV1611020 3

Project: B+K

Received Date: 11/30/16 Received Time: 2:55 pm By: Su

Type of shipping container: Cooler X Box ___ Other ___

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

	Yes	No	N/A
Were custody seals on outside of shipping container?	X		
If yes, how many? 1 Where? Top of cooler			
Custody seal date: 11/30/16 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:

Sample Number	Reagent	Analyte

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

Temperature of cooler upon receipt: 5.1 °C on ice (Cold) Cool Ambient N/A

Explain any discrepancies: Received trip blanks but not listed on COC.

Was client contacted? No Who was called? — By whom? — Date: —

Outcome of call: ___

December 14, 2016

Mr. Cody Johnson
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Johnson,

On December 12th, 12 samples were received by our laboratory and assigned our laboratory project number EV16120055. The project was identified as your Beckwith & Kuffel - 1645001.010.013. 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:	12/14/2016
		ALS JOB#:	EV16120055
		ALS SAMPLE#:	EV16120055-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 9:30:00 AM
CLIENT SAMPLE ID	LB-1-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/12/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/12/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/12/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	**390**	250	1	UG/L	12/12/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	**0.41**	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 9:30:00 AM
CLIENT SAMPLE ID	LB-1-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**89.6**	12/12/2016	PAB
TFT	EPA-8021	**102**	12/12/2016	PAB
C25	NWTPH-DX w/ SGA	**107**	12/12/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**99.8**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**102**	12/13/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains lube oil.

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#:	12/14/2016 EV16120055 EV16120055-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 10:30:00 AM
CLIENT SAMPLE ID	LB-1-25	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/14/2016 EV16120055 EV16120055-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 10:30:00 AM
CLIENT SAMPLE ID	LB-1-25	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**103**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.8**	12/13/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 2:50:00 PM
CLIENT SAMPLE ID	LB-2-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/12/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/12/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/12/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/12/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/14/2016 EV16120055 EV16120055-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 2:50:00 PM
CLIENT SAMPLE ID	LB-2-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**88.9**	12/12/2016	PAB
TFT	EPA-8021	**98.9**	12/12/2016	PAB
C25	NWTPH-DX w/ SGA	**110**	12/12/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**105**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**100**	12/13/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 4:16:00 PM
CLIENT SAMPLE ID	LB-2-25	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 4:16:00 PM
CLIENT SAMPLE ID	LB-2-25	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**97.0**	12/13/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 2:35:00 PM
CLIENT SAMPLE ID	LB-3-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/12/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/12/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/12/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/12/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/14/2016 EV16120055 EV16120055-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 2:35:00 PM
CLIENT SAMPLE ID	LB-3-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**88.4**	12/12/2016	PAB
TFT	EPA-8021	**95.9**	12/12/2016	PAB
C25	NWTPH-DX w/ SGA	**111**	12/12/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**107**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.9**	12/13/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-06
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 5:07:00 PM
CLIENT SAMPLE ID	LB-3-25	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-06
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 5:07:00 PM
CLIENT SAMPLE ID	LB-3-25	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.7**	12/13/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-07
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 5:52:00 PM
CLIENT SAMPLE ID	LB-4-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/12/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/12/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/12/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	**170**	130	1	UG/L	12/12/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/12/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/14/2016 EV16120055 EV16120055-07
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 5:52:00 PM
CLIENT SAMPLE ID	LB-4-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**85.5**	12/12/2016	PAB
TFT	EPA-8021	**94.5**	12/12/2016	PAB
C25	NWTPH-DX w/ SGA	**83.2**	12/12/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**107**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**100**	12/13/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product.

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#:	12/14/2016 EV16120055 EV16120055-08
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 6:35:00 PM
CLIENT SAMPLE ID	LB-4-25	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-08
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 6:35:00 PM
CLIENT SAMPLE ID	LB-4-25	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

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

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

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#:	12/14/2016 EV16120055 EV16120055-09
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 6:50:00 PM
CLIENT SAMPLE ID	LB-4-30	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-09
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 6:50:00 PM
CLIENT SAMPLE ID	LB-4-30	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**102**	12/13/2016	DLC
4-Bromofluorobenzene	EPA-8260	**100**	12/13/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-10
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 11:35:00 AM
CLIENT SAMPLE ID	LB-10-16	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	**0.60**	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	**3.1**	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	**5.1**	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	**200**	200	100	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	**1100**	200	100	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-10
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 11:35:00 AM
CLIENT SAMPLE ID	LB-10-16	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**92.7**	12/13/2016	DLC
1,2-Dichloroethane-d4 100X Dilution	EPA-8260	**102**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**96.4**	12/13/2016	DLC
4-Bromofluorobenzene 100X Dilution	EPA-8260	**102**	12/14/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-11
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 12:45:00 PM
CLIENT SAMPLE ID	LB-10-27	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	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	**5.9**	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/14/2016 EV16120055 EV16120055-11
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 12:45:00 PM
CLIENT SAMPLE ID	LB-10-27	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	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**103**	12/14/2016	DLC

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

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#:	12/14/2016 EV16120055 EV16120055-12
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 12:00:00 PM
CLIENT SAMPLE ID	Trip Blank	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	12/13/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/13/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	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#:	12/14/2016 EV16120055 EV16120055-12
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/12/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/11/2016 12:00:00 PM
CLIENT SAMPLE ID	Trip Blank	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	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/13/2016	DLC

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

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

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:	12/14/2016
		ALS SDG#:	EV16120055
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013		

LABORATORY BLANK RESULTS

MBG-120916W - Batch 110661 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	UG/L	50	12/09/2016	PAB

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

MB-120916W - Batch 110661 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	UG/L	1.0	12/09/2016	PAB
Toluene	EPA-8021	U	UG/L	1.0	12/09/2016	PAB
Ethylbenzene	EPA-8021	U	UG/L	1.0	12/09/2016	PAB
Xylenes	EPA-8021	U	UG/L	3.0	12/09/2016	PAB

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

MB-120616W - Batch 110552 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	UG/L	130	12/06/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	UG/L	250	12/06/2016	EBS

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

MB-120916W - Batch 110741 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	12/09/2016	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	12/09/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Chloroform	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS SDG#: WDOE ACCREDITATION:	12/14/2016 EV16120055 C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013		

LABORATORY BLANK RESULTS

MB-120916W - Batch 110741 - Water by EPA-8260

1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Toluene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	12/09/2016	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Bromoform	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	12/09/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	12/09/2016	DLC

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

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 SDG#: WDOE ACCREDITATION:	12/14/2016 EV16120055 C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 110661 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12) - BS	NWTPH-GX	**86.5**			66.5	122.7	12/09/2016	PAB
TPH-Volatile Range (C7-C12) - BSD	NWTPH-GX	**91.2**	**5**		66.5	122.7	12/09/2016	PAB

ALS Test Batch ID: 110661 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**104**			83	120	12/09/2016	PAB
Benzene - BSD	EPA-8021	**106**	**1**		83	120	12/09/2016	PAB
Toluene - BS	EPA-8021	**97.6**			85	115	12/09/2016	PAB
Toluene - BSD	EPA-8021	**100**	**2**		85	115	12/09/2016	PAB
Ethylbenzene - BS	EPA-8021	**101**			85	113	12/09/2016	PAB
Ethylbenzene - BSD	EPA-8021	**103**	**2**		85	113	12/09/2016	PAB
Xylenes - BS	EPA-8021	**104**			85	116	12/09/2016	PAB
Xylenes - BSD	EPA-8021	**106**	**2**		85	116	12/09/2016	PAB

ALS Test Batch ID: 110552 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	**88.9**			67	125.2	12/06/2016	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	**94.6**	**6**		67	125.2	12/06/2016	EBS

ALS Test Batch ID: 110741 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**102**			72.5	136	12/09/2016	DLC
1,1-Dichloroethene - BSD	EPA-8260	**116**	**14**		72.5	136	12/09/2016	DLC
Trichloroethene - BS	EPA-8260	**98.2**			74.4	141	12/09/2016	DLC
Trichloroethene - BSD	EPA-8260	**109**	**10**		74.4	141	12/09/2016	DLC
Toluene - BS	EPA-8260	**94.0**			71.7	139	12/09/2016	DLC
Toluene - BSD	EPA-8260	**104**	**10**		71.7	139	12/09/2016	DLC
Chlorobenzene - BS	EPA-8260	**94.9**			73	131	12/09/2016	DLC
Chlorobenzene - BSD	EPA-8260	**111**	**15**		73	131	12/09/2016	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 #: EV1612005 5

Project: Beckwith + Kuffel

Received Date: 12/12/16 Received Time: 12:15 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? ___ Where? ___			
Custody seal date: ___ Seal name: ___			
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:

Sample Number	Reagent	Analyte

Were VOA vials checked for absence of air bubbles?	X	___	___
Bubbles present in sample #: Bubble in 1 voa			

Temperature of cooler upon receipt: 2.4°C on Ice (Cold) Cool Ambient N/A

Explain any discrepancies: ___

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

Outcome of call: ___

EV1612 0055

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 12/11/16

Page 1 of 1

Project Name Brickwith + Kuffel Project No. 164S001.010.013

Project Location/Event 1313 S. 96th St

Sampler's Name CMJ

Project Contact Coby Johnson

Send Results To " "

Testing Parameters

Turnaround Time
- [ ] Standard
- [x] Accelerated
- [x] Need by EOD Thursday Dec 15

	Sample I.D.	Date	Time	Matrix	No. of Containers	VOC's	TPH-G/BTEX	TPH-Dx	Observations/Comments
1	LB-1-10	12/11/16	933	SA	6	X	X	X	
2	LB-1-25		1030		3	X			
3	LB-2-10		1450		6	X	X	X	
4	LB-2-25		1616		3	X			
5	LB-3-10		1435		6	X	X	X	
6	LB-3-25		1707		3	X			
7	LB-4-10		1752		6	X	X	X	
8	LB-4-25		1835		3	X			
9	LB-4-30		1850		3	X			
10	LB-10-16		1135		3	X			
11	LB-10-27		1215		3	X			
12	Trip Blank			W	2	X			

- [x] Allow water samples to settle, collect aliquot from clear portion
- [ ] NWTPH-Dx - run acid wash silica gel cleanup
- [ ] Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
- [ ] non-preserved
- [ ] preserved w/methanol
- [ ] preserved w/sodium bisulfate
- [ ] Freeze upon receipt
- [ ] Dissolved metal water samples field filtered

Other _____

Special Shipment/Handling or Storage Requirements

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Coby Johnson	Printed Name Katie McClintock	Printed Name	Printed Name
Company LAA	Company ALS	Company	Company
Date 12/11/16 Time 2005	Date 12.12.16 Time 12:15	Date Time	Date Time

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

12/2014

December 19, 2016

Mr. Cody Johnson
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Johnson,

On December 14th, 9 samples were received by our laboratory and assigned our laboratory project number EV16120075. The project was identified as your Beckwith & Kuffel - 1645001.010.013. 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:	12/19/2016
		ALS JOB#:	EV16120075
		ALS SAMPLE#:	EV16120075-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 10:55:00 AM
CLIENT SAMPLE ID	LB-5-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/14/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Toluene	EPA-8021	**1.4**	1.0	1	UG/L	12/14/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/14/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	**150**	130	1	UG/L	12/14/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	**320**	250	1	UG/L	12/14/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/19/2016 EV16120075 EV16120075-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 10:55:00 AM
CLIENT SAMPLE ID	LB-5-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**82.2**	12/14/2016	PAB
TFT	EPA-8021	**86.1**	12/14/2016	PAB
C25	NWTPH-DX w/ SGA	**73.4**	12/14/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**105**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**106**	12/14/2016	DLC

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified diesel range product and lube oil.

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#:	12/19/2016 EV16120075 EV16120075-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 12:10:00 PM
CLIENT SAMPLE ID	LB-6-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/14/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/14/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/15/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/15/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/19/2016 EV16120075 EV16120075-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 12:10:00 PM
CLIENT SAMPLE ID	LB-6-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**87.7**	12/14/2016	PAB
TFT	EPA-8021	**95.6**	12/14/2016	PAB
C25	NWTPH-DX w/ SGA	**83.2**	12/15/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**106**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**103**	12/14/2016	DLC

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

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#:	12/19/2016 EV16120075 EV16120075-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 3:45:00 PM
CLIENT SAMPLE ID	LB-7-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/14/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/14/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/15/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/15/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/19/2016 EV16120075 EV16120075-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 3:45:00 PM
CLIENT SAMPLE ID	LB-7-10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**89.3**	12/14/2016	PAB
TFT	EPA-8021	**98.0**	12/14/2016	PAB
C25	NWTPH-DX w/ SGA	**87.6**	12/15/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**99.2**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.1**	12/14/2016	DLC

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

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:	12/19/2016
		ALS JOB#:	EV16120075
		ALS SAMPLE#:	EV16120075-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 2:15:00 PM
CLIENT SAMPLE ID	LB-8-15	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/14/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/14/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/15/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/15/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	**3.1**	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	12/19/2016
		ALS JOB#:	EV16120075
		ALS SAMPLE#:	EV16120075-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 2:15:00 PM
CLIENT SAMPLE ID	LB-8-15	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**91.3**	12/14/2016	PAB
TFT	EPA-8021	**94.7**	12/14/2016	PAB
C25	NWTPH-DX w/ SGA	**106**	12/15/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**105**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**100**	12/14/2016	DLC

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

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#:	12/19/2016 EV16120075 EV16120075-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 2:30:00 PM
CLIENT SAMPLE ID	LB-8-20	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	50	1	UG/L	12/14/2016	PAB
Benzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Toluene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/14/2016	PAB
Xylenes	EPA-8021	U	3.0	1	UG/L	12/14/2016	PAB
TPH-Diesel Range (C12-C24)	NWTPH-DX w/ SGA	U	130	1	UG/L	12/15/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX w/ SGA	U	250	1	UG/L	12/15/2016	EBS
Dichlorodifluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	**2.6**	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	12/19/2016 EV16120075 EV16120075-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/12/2016 2:30:00 PM
CLIENT SAMPLE ID	LB-8-20	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**91.5**	12/14/2016	PAB
TFT	EPA-8021	**95.9**	12/14/2016	PAB
C25	NWTPH-DX w/ SGA	**114**	12/15/2016	EBS
1,2-Dichloroethane-d4	EPA-8260	**104**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**102**	12/14/2016	DLC

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

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#:	12/19/2016 EV16120075 EV16120075-06
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/13/2016 3:45:00 PM
CLIENT SAMPLE ID	LB-9-10	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	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	**2.3**	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	**6.2**	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	**16**	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	**3.2**	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	**69**	20	10	UG/L	12/15/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	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#:	12/19/2016 EV16120075 EV16120075-06
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/13/2016 3:45:00 PM
CLIENT SAMPLE ID	LB-9-10	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	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**98.7**	12/14/2016	DLC
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	**100**	12/15/2016	DLC
4-Bromofluorobenzene	EPA-8260	**99.2**	12/14/2016	DLC
4-Bromofluorobenzene 10X Dilution	EPA-8260	**98.9**	12/15/2016	DLC

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

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#:	12/19/2016 EV16120075 EV16120075-07
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/13/2016 4:40:00 PM
CLIENT SAMPLE ID	LB-9-25	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	12/14/2016	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	12/14/2016	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	12/14/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	**2.8**	2.0	1	UG/L	12/14/2016	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trichloroethene	EPA-8260	**5.4**	2.0	1	UG/L	12/14/2016	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	12/14/2016	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	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#:	12/19/2016 EV16120075 EV16120075-07
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	12/14/2016
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013	COLLECTION DATE:	12/13/2016 4:40:00 PM
CLIENT SAMPLE ID	LB-9-25	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	12/14/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	12/14/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	12/14/2016	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**102**	12/14/2016	DLC
4-Bromofluorobenzene	EPA-8260	**105**	12/14/2016	DLC

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

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:	12/19/2016
		ALS SDG#:	EV16120075
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013		

LABORATORY BLANK RESULTS

MBG-121316W - Batch 110801 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12)	NWTPH-GX	U	UG/L	50	12/13/2016	PAB

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

MB-121316W - Batch 110801 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	UG/L	1.0	12/13/2016	PAB
Toluene	EPA-8021	U	UG/L	1.0	12/13/2016	PAB
Ethylbenzene	EPA-8021	U	UG/L	1.0	12/13/2016	PAB
Xylenes	EPA-8021	U	UG/L	3.0	12/13/2016	PAB

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

MB-121416W - Batch 110796 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24)	NWTPH-DX	U	UG/L	130	12/14/2016	EBS
TPH-Oil Range (C24-C40)	NWTPH-DX	U	UG/L	250	12/14/2016	EBS

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

MB-121316W - Batch 110740 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	12/13/2016	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	12/13/2016	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Chloroform	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	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 SDG#: WDOE ACCREDITATION:	12/19/2016 EV16120075 C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	Beckwith & Kuffel - 1645001.010.013		

LABORATORY BLANK RESULTS

MB-121316W - Batch 110740 - Water by EPA-8260

1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Toluene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	12/13/2016	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Bromoform	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	12/13/2016	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	12/13/2016	DLC

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

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: 12/19/2016
ALS SDG#: EV16120075
WDOE ACCREDITATION: C601

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: Beckwith & Kuffel - 1645001.010.013

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 110801 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range (C7-C12) - BS	NWTPH-GX	**84.7**			66.5	122.7	12/14/2016	PAB
TPH-Volatile Range (C7-C12) - BSD	NWTPH-GX	**91.2**	**7**		66.5	122.7	12/13/2016	PAB

ALS Test Batch ID: 110801 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**106**			83	120	12/13/2016	PAB
Benzene - BSD	EPA-8021	**109**	**3**		83	120	12/13/2016	PAB
Toluene - BS	EPA-8021	**99.7**			85	115	12/13/2016	PAB
Toluene - BSD	EPA-8021	**104**	**4**		85	115	12/13/2016	PAB
Ethylbenzene - BS	EPA-8021	**104**			85	113	12/13/2016	PAB
Ethylbenzene - BSD	EPA-8021	**106**	**2**		85	113	12/13/2016	PAB
Xylenes - BS	EPA-8021	**106**			85	116	12/13/2016	PAB
Xylenes - BSD	EPA-8021	**109**	**3**		85	116	12/13/2016	PAB

ALS Test Batch ID: 110796 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range (C12-C24) - BS	NWTPH-DX	**87.7**			67	125.2	12/14/2016	EBS
TPH-Diesel Range (C12-C24) - BSD	NWTPH-DX	**97.8**	**11**		67	125.2	12/14/2016	EBS

ALS Test Batch ID: 110740 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**97.8**			72.5	136	12/13/2016	DLC
1,1-Dichloroethene - BSD	EPA-8260	**96.7**	**1**		72.5	136	12/13/2016	DLC
Trichloroethene - BS	EPA-8260	**101**			74.4	141	12/13/2016	DLC
Trichloroethene - BSD	EPA-8260	**99.7**	**2**		74.4	141	12/13/2016	DLC
Toluene - BS	EPA-8260	**96.9**			71.7	139	12/13/2016	DLC
Toluene - BSD	EPA-8260	**93.6**	**4**		71.7	139	12/13/2016	DLC
Chlorobenzene - BS	EPA-8260	**98.2**			73	131	12/13/2016	DLC
Chlorobenzene - BSD	EPA-8260	**101**	**3**		73	131	12/13/2016	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 #: EV1612007S

Project: Beckwith & Kuffel

Received Date: 12/14/16 Received Time: 1345 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? ____ Where? ____			
Custody seal date: ____ Seal name: ____			
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:

Sample Number	Reagent	Analyte

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

Temperature of cooler upon receipt: 5.1°C on file (Cold) Cool Ambient N/A

Explain any discrepancies: ____

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

Outcome of call: ____

EV1612007S

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 12/14/16

Page 1 of 1

Project Name Beckwith Local 1 Project No. 1645001.010.013

Project Location/Event B+K RI

Sampler's Name Cody Johnson

Project Contact Cody Johnson

Send Results To Cody Johnson

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

	Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters: HVOCs	TPH-Dx	TPH-G/BTEX	Observations/Comments
1	LB-5-10	12/12/16	1055	WA	6	X	X	X	
2	LB-6-10		1210		6	X	X	X	
3	LB-7-10		1545		6	X	X	X	
4	LB-8-15		1415		6	X	X	X	
5	LB-8-20		1430		6	X	X	X	
6	LB-9-10	12/13/16	1545		3	X			
7	LB-9-25		1640		3	X			
8	LB-14-10		1345		3	HOLD			
9	LB-14-25		1415		3	HOLD			

Observations/Comments:
- [x] Allow water samples to settle, collect aliquot from clear portion
- [x] NWTPH-Dx - run acid wash silica gel cleanup
- [ ] Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
- [ ] non-preserved
- [ ] preserved w/methanol
- [ ] preserved w/sodium bisulfate
- [ ] Freeze upon receipt
- [ ] Dissolved metal water samples field filtered

Other _____

Special Shipment/Handling or Storage Requirements

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Cody Johnson	Printed Name ~~Rick Bagan~~ Rick Bagan	Printed Name	Printed Name
Company LAI	Company ~~LAI~~ ALS	Company	Company
Date 12/14/16 Time 1001	Date 12/14/16 Time 1:45	Date Time	Date Time

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

12/2014

February 8, 2017

Mr. Cody Johnson
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Johnson,

On January 30th, 6 samples were received by our laboratory and assigned our laboratory project number EV17010159. The project was identified as your Beckwith & Kuffel. 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#:	2/8/2017 EV17010159 EV17010159-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 1:55:00 PM
CLIENT SAMPLE ID	LB-15-16	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	02/06/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Vinyl Chloride	EPA-8260	**0.24**	0.20	1	UG/L	02/06/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	**170**	40	20	UG/L	02/07/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichloroethene	EPA-8260	**370**	40	20	UG/L	02/07/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	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:	2/8/2017
		ALS JOB#:	EV17010159
		ALS SAMPLE#:	EV17010159-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 1:55:00 PM
CLIENT SAMPLE ID	LB-15-16	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	02/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**100**	02/06/2017	DLC
1,2-Dichloroethane-d4 20X Dilution	EPA-8260	**103**	02/07/2017	DLC
4-Bromofluorobenzene	EPA-8260	**94.8**	02/06/2017	DLC
4-Bromofluorobenzene 20X Dilution	EPA-8260	**95.1**	02/07/2017	DLC

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

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#:	2/8/2017 EV17010159 EV17010159-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 4:55:00 PM
CLIENT SAMPLE ID	LB-15-28	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	02/06/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	02/06/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	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#:	2/8/2017 EV17010159 EV17010159-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 4:55:00 PM
CLIENT SAMPLE ID	LB-15-28	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	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**104**	02/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	**94.9**	02/06/2017	DLC

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

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:	2/8/2017
		ALS JOB#:	EV17010159
		ALS SAMPLE#:	EV17010159-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 5:25:00 PM
CLIENT SAMPLE ID	LB-16-16	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	02/06/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	02/06/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	**2.4**	2.0	1	UG/L	02/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichloroethene	EPA-8260	**8.2**	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	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#:	2/8/2017 EV17010159 EV17010159-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 5:25:00 PM
CLIENT SAMPLE ID	LB-16-16	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	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	02/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	**97.4**	02/06/2017	DLC

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

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#:	2/8/2017 EV17010159 EV17010159-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 3:55:00 PM
CLIENT SAMPLE ID	LB-16-28	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	02/06/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	02/06/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE:	2/8/2017
		ALS JOB#:	EV17010159
		ALS SAMPLE#:	EV17010159-04
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 3:55:00 PM
CLIENT SAMPLE ID	LB-16-28	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	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	02/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	**94.4**	02/06/2017	DLC

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

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:	2/8/2017
		ALS JOB#:	EV17010159
		ALS SAMPLE#:	EV17010159-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 5:30:00 PM
CLIENT SAMPLE ID	LB-17-16	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	02/06/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	02/06/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	**2.3**	2.0	1	UG/L	02/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichloroethene	EPA-8260	**3.3**	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	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#:	2/8/2017 EV17010159 EV17010159-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 5:30:00 PM
CLIENT SAMPLE ID	LB-17-16	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	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	02/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	**94.1**	02/06/2017	DLC

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

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:	2/8/2017
		ALS JOB#:	EV17010159
		ALS SAMPLE#:	EV17010159-06
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 7:05:00 PM
CLIENT SAMPLE ID	LB-17-28	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	02/06/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	02/06/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	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:	2/8/2017
		ALS JOB#:	EV17010159
		ALS SAMPLE#:	EV17010159-06
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	01/30/2017
CLIENT PROJECT:	Beckwith & Kuffel	COLLECTION DATE:	1/28/2017 7:05:00 PM
CLIENT SAMPLE ID	LB-17-28	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	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	02/06/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**107**	02/06/2017	DLC
4-Bromofluorobenzene	EPA-8260	**93.8**	02/06/2017	DLC

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

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

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: Beckwith & Kuffel

DATE: 2/8/2017
ALS SDG#: EV17010159
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-020617W - Batch 112123 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	02/06/2017	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	02/06/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Chloroform	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Toluene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	02/06/2017	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Bromoform	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	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:	2/8/2017
		ALS SDG#:	EV17010159
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	Beckwith & Kuffel		

LABORATORY BLANK RESULTS

MB-020617W - Batch 112123 - Water by EPA-8260

1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	02/06/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	02/06/2017	DLC

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

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

CLIENT CONTACT: Cody Johnson

CLIENT PROJECT: Beckwith & Kuffel

DATE: 2/8/2017

ALS SDG#: EV17010159

WDOE ACCREDITATION: C601

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 112123 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**111**			72.5	136	02/06/2017	DLC
1,1-Dichloroethene - BSD	EPA-8260	**109**	**1**		72.5	136	02/06/2017	DLC
Trichloroethene - BS	EPA-8260	**121**			74.4	141	02/06/2017	DLC
Trichloroethene - BSD	EPA-8260	**119**	**2**		74.4	141	02/06/2017	DLC
Toluene - BS	EPA-8260	**112**			71.7	139	02/06/2017	DLC
Toluene - BSD	EPA-8260	**110**	**2**		71.7	139	02/06/2017	DLC
Chlorobenzene - BS	EPA-8260	**114**			73	131	02/06/2017	DLC
Chlorobenzene - BSD	EPA-8260	**113**	**1**		73	131	02/06/2017	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 #: EV17010159

Project: Beckwith + Kuffel

Received Date: 01·30·17 Received Time: 3:27 pm By: KM

Type of shipping container: Cooler X Box ____ Other ____

Shipped via: FedEx Ground ____ UPS ____ Mail ____ Courier KM Hand Delivered ____
FedEx Express ____

	Yes	No	N/A
Were custody seals on outside of shipping container?	____	X	____
If yes, how many? ____ Where? ____			
Custody seal date: ____ Seal name: ____			
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:

Sample Number	Reagent	Analyte

Were VOA vials checked for absence of air bubbles?	X	____	____		
Bubbles present in sample #: ____					

Temperature of cooler upon receipt: 8.6 °C on ice (Cold) Cool Ambient N/A

Explain any discrepancies: ____

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

Outcome of call: ____

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV 1701 0159

Date _____ Page _____ Of _____

PROJECT ID: Beckwith Icicle
REPORT TO COMPANY: Landau Assoc
PROJECT MANAGER: Coby Johnson
ADDRESS:
PHONE: 206-877-2173 FAX:
P.O. #: 164500.010.014 E-MAIL: cjohnson@landauinc.com
INVOICE TO COMPANY: LAI
ATTENTION: Coby Johnson
ADDRESS:

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. LB-15-16	1/28/17	1355	WA	1						X											3	
2. LB-15-28		1655	WA	2						X												
3. LB-16-16		1455	WA	3						X												
4. LB-16-28		1555		4						X												
5. LB-17-16		1730		5						X												
6. LB-17-28		1905		6						X												
7.																						
8.																						
9.																						
10.																						

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: _____ LAI 1/30/17 1115
   Received By: Kaitlan McCormick 1/30/17 ALS 3:27
2. Relinquished By: _____
   Received By: _____

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ~~10~~ Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify: _____

*Turnaround request less than standard may incur Rush Charges

March 17, 2017

Mr. Cody Johnson
Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Johnson,

On March 14th, 8 samples were received by our laboratory and assigned our laboratory project number EV17030104. The project was identified as your B & K. 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#:	3/17/2017 EV17030104 EV17030104-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 9:45:00 AM
CLIENT SAMPLE ID	LB-18-15	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	03/14/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	03/14/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	03/14/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	**13**	2.0	1	UG/L	03/14/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichloroethene	EPA-8260	**76**	20	10	UG/L	03/15/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/14/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	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#:	3/17/2017 EV17030104 EV17030104-01
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 9:45:00 AM
CLIENT SAMPLE ID	LB-18-15	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	03/14/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	03/14/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	03/14/2017	DLC
1,2-Dichloroethane-d4 10X Dilution	EPA-8260	**106**	03/15/2017	DLC
4-Bromofluorobenzene	EPA-8260	**104**	03/14/2017	DLC
4-Bromofluorobenzene 10X Dilution	EPA-8260	**105**	03/15/2017	DLC

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

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#:	3/17/2017 EV17030104 EV17030104-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 11:45:00 AM
CLIENT SAMPLE ID	LB-18-28	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	03/14/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	03/14/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	03/14/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichloroethene	EPA-8260	**3.7**	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/14/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	3/17/2017 EV17030104 EV17030104-02
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 11:45:00 AM
CLIENT SAMPLE ID	LB-18-28	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	03/14/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	03/14/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	03/14/2017	DLC
4-Bromofluorobenzene	EPA-8260	**105**	03/14/2017	DLC

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

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#:	3/17/2017 EV17030104 EV17030104-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 12:40:00 PM
CLIENT SAMPLE ID	LB-20-15	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	03/16/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	03/16/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	03/16/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/16/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	3/17/2017 EV17030104 EV17030104-03
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 12:40:00 PM
CLIENT SAMPLE ID	LB-20-15	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	03/16/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	03/16/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	03/16/2017	DLC
4-Bromofluorobenzene	EPA-8260	**106**	03/16/2017	DLC

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

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#:	3/17/2017 EV17030104 EV17030104-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 2:40:00 PM
CLIENT SAMPLE ID	LB-21-15	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	03/16/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	03/16/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	03/16/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/16/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	Landau Associates, Inc. 130 - 2nd Ave. S. Edmonds, WA 98020	DATE: ALS JOB#: ALS SAMPLE#:	3/17/2017 EV17030104 EV17030104-05
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 2:40:00 PM
CLIENT SAMPLE ID	LB-21-15	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	03/16/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	03/16/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/16/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	03/16/2017	DLC
4-Bromofluorobenzene	EPA-8260	**104**	03/16/2017	DLC

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

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#:	3/17/2017 EV17030104 EV17030104-07
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 4:25:00 PM
CLIENT SAMPLE ID	LB-19-15	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	03/14/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	03/14/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	03/14/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/14/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	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#:	3/17/2017 EV17030104 EV17030104-07
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 4:25:00 PM
CLIENT SAMPLE ID	LB-19-15	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	03/14/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	03/14/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**106**	03/14/2017	DLC
4-Bromofluorobenzene	EPA-8260	**105**	03/14/2017	DLC

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

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#:	3/17/2017 EV17030104 EV17030104-08
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 5:10:00 PM
CLIENT SAMPLE ID	LB-19-28	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	03/14/2017	DLC
Chloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Vinyl Chloride	EPA-8260	U	0.20	1	UG/L	03/14/2017	DLC
Bromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Carbon Tetrachloride	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichlorofluoromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Methylene Chloride	EPA-8260	U	5.0	1	UG/L	03/14/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Chloroform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trichloroethene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromomethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromodichloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Tetrachloroethylene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Dibromochloromethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2-Dibromoethane	EPA-8260	U	0.010	1	UG/L	03/14/2017	DLC
Chlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromoform	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Bromobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
2-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
4-Chlorotoluene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	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#:	3/17/2017 EV17030104 EV17030104-08
CLIENT CONTACT:	Cody Johnson	DATE RECEIVED:	03/14/2017
CLIENT PROJECT:	B & K	COLLECTION DATE:	3/12/2017 5:10:00 PM
CLIENT SAMPLE ID	LB-19-28	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	03/14/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	10	1	UG/L	03/14/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
Hexachlorobutadiene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	2.0	1	UG/L	03/14/2017	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
1,2-Dichloroethane-d4	EPA-8260	**105**	03/14/2017	DLC
4-Bromofluorobenzene	EPA-8260	**106**	03/14/2017	DLC

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

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

CLIENT CONTACT: Cody Johnson

CLIENT PROJECT: B & K

DATE: 3/17/2017

ALS SDG#: EV17030104

WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-031017W - Batch 114221 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	03/10/2017	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	03/10/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Chloroform	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Toluene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	03/10/2017	DLC
Chlorobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Bromoform	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B & K

DATE: 3/17/2017
ALS SDG#: EV17030104
WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-031017W - Batch 114221 - Water by EPA-8260

1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	03/10/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	03/10/2017	DLC

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

MB-031517W - Batch 114371 - Water by EPA-8260

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Dichlorodifluoromethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Chloromethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Vinyl Chloride	EPA-8260	U	UG/L	0.20	03/15/2017	DLC
Bromomethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Chloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Carbon Tetrachloride	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Trichlorofluoromethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1-Dichloroethene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Methylene Chloride	EPA-8260	U	UG/L	5.0	03/15/2017	DLC
Trans-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1-Dichloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Cis-1,2-Dichloroethene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
2,2-Dichloropropane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Bromochloromethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Chloroform	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1,1-Trichloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1-Dichloropropene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2-Dichloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Trichloroethene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2-Dichloropropane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Dibromomethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Bromodichloromethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Trans-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Toluene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Cis-1,3-Dichloropropene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1,2-Trichloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,3-Dichloropropane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Tetrachloroethylene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Dibromochloromethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2-Dibromoethane	EPA-8260	U	UG/L	0.010	03/15/2017	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

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020

CLIENT CONTACT: Cody Johnson

CLIENT PROJECT: B & K

DATE: 3/17/2017

ALS SDG#: EV17030104

WDOE ACCREDITATION: C601

LABORATORY BLANK RESULTS

MB-031517W - Batch 114371 - Water by EPA-8260

Chlorobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1,1,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Bromoform	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,1,2,2-Tetrachloroethane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2,3-Trichloropropane	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Bromobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
2-Chlorotoluene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
4-Chlorotoluene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,3-Dichlorobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,4-Dichlorobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2-Dichlorobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2-Dibromo 3-Chloropropane	EPA-8260	U	UG/L	10	03/15/2017	DLC
1,2,4-Trichlorobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
Hexachlorobutadiene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC
1,2,3-Trichlorobenzene	EPA-8260	U	UG/L	2.0	03/15/2017	DLC

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

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:	3/17/2017
		ALS SDG#:	EV17030104
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Cody Johnson		
CLIENT PROJECT:	B & K		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 114221 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**117**			72.5	136	03/10/2017	DLC
1,1-Dichloroethene - BSD	EPA-8260	**114**	**2**		72.5	136	03/10/2017	DLC
Trichloroethene - BS	EPA-8260	**106**			74.4	141	03/10/2017	DLC
Trichloroethene - BSD	EPA-8260	**105**	**1**		74.4	141	03/10/2017	DLC
Toluene - BS	EPA-8260	**105**			71.7	139	03/10/2017	DLC
Toluene - BSD	EPA-8260	**104**	**1**		71.7	139	03/10/2017	DLC
Chlorobenzene - BS	EPA-8260	**110**			73	131	03/10/2017	DLC
Chlorobenzene - BSD	EPA-8260	**109**	**1**		73	131	03/10/2017	DLC

ALS Test Batch ID: 114371 - Water by EPA-8260

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
1,1-Dichloroethene - BS	EPA-8260	**118**			72.5	136	03/15/2017	DLC
1,1-Dichloroethene - BSD	EPA-8260	**111**	**6**		72.5	136	03/15/2017	DLC
Trichloroethene - BS	EPA-8260	**119**			74.4	141	03/15/2017	DLC
Trichloroethene - BSD	EPA-8260	**112**	**6**		74.4	141	03/15/2017	DLC
Toluene - BS	EPA-8260	**111**			71.7	139	03/15/2017	DLC
Toluene - BSD	EPA-8260	**105**	**5**		71.7	139	03/15/2017	DLC
Chlorobenzene - BS	EPA-8260	**115**			73	131	03/15/2017	DLC
Chlorobenzene - BSD	EPA-8260	**109**	**5**		73	131	03/15/2017	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
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV1703010 4

Date _____ Page _____ Of _____

PROJECT ID: B+K
REPORT TO COMPANY: Landau Assoc.
PROJECT MANAGER: Cody Johnson
ADDRESS:
PHONE: FAX:
P.O. #: 164501.010.013 E-MAIL: cjohnson@landauinc.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☐ BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. LB-18-15	3/12/17	945	WA	1						X											3	
2. LB-18-28	3/12/17	1145		2						X											3	
3. LB-20-15		1240		3						⊗											3	
4. LB-20-28		1355		4																	3	
5. LB-21-15		1440		5						⊗											3	
6. LB-21-28		1545		6																	2	
7. LB-19-15		1625		7						X											3	
8. LB-19-28		1710		8						X											3	
9.																						
10.																						

SPECIAL INSTRUCTIONS: ⊗ Cody added #3 on Stadard TAT ⊗ + #5 on 3/16/17

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: _____ LAZ 3/13/17 1200
   Received By: Katie McCutcheon /ALS/ 3/14/17 /11:15 AM
2. Relinquished By: _____
   Received By: _____

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER: Specify: _____

*Turnaround request less than standard may incur Rush Charges