# 2017-2018 Bioremediation Injection and Groundwater Monitoring Status Report
# Beckwith & Kuffel, Inc. Site
# 1313 South 96th Street
# Seattle, Washington
# VCP ID No. SW1273

June 20, 2019

Prepared for

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| Date: | June 20, 2019 |
| Project No.: | 1645001.010 |
| File path: | P:\1645\001\R\Injection Summary and GW Monitoring Report |
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# LIST OF ABBREVIATIONS AND ACRONYMS

µg/L ..... micrograms per liter
B&K ..... Beckwith & Kuffel, Inc.
bgs ..... below ground surface
btoc ..... below top of casing
cDCE ..... cis-1,2-dichloroethene
CUL ..... cleanup level
Ecology ..... Washington State Department of Ecology
ESA ..... environmental site assessment
FMH ..... FMH Material Handling Solutions
ft ..... foot/feet
HVOC ..... halogenated volatile organic compound
LAI ..... Landau Associates, Inc.
lbs ..... pounds
mg/L ..... milligrams per liter
MTCA ..... Model Toxics Control Act
RGI ..... Riley Group, Inc.
Sea Mar ..... Sea Mar Community Health Centers
Site ..... 1313 South 96th Street, Seattle, Washington
SWI ..... Shannon & Wilson, Inc.
TCE ..... trichloroethene
TOC ..... total organic carbon
VC ..... vinyl chloride
VCP ..... Voluntary Cleanup Program
WB ..... Wooldridge Boats

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# 1.0 INTRODUCTION

Landau Associates, Inc. (LAI) has prepared this status report to summarize bioremediation injection and groundwater monitoring activities conducted at the Beckwith & Kuffel, Inc. (B&K) property (Site) in 2017 and 2018. The Site is located at 1313 South 96th Street in Seattle, Washington (Figure 1). Voluntary cleanup activities are ongoing and are being conducted by B&K in the southeast corner of the Site where residual groundwater contamination from a historical release of halogenated volatile organic compounds (HVOCs) is present (VCP ID No. SW1273). The purpose of this report is to document injection of electron donor fluids intended to enhance natural biodegradation of HVOCs in the Site groundwater, and the results of pre- and post-injection groundwater sampling events. Newly installed monitoring and injection wells are also described.

This report briefly summarizes the project background, well installation, baseline and post-injection groundwater monitoring activities, and the bioremediation injection event conducted at the Site in January 2018. Additional project background information related to past soil and groundwater sampling, Site geology, and historical monitoring results is provided in the Remedial Investigation/Interim Remedial Action (RI/IRA) Report by Shannon & Wilson, Inc. (Shannon & Wilson 2014) and the Supplemental Remedial Investigation Report by LAI (2017) submitted to the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program and is not repeated in detail herein.

## 1.1 Background

Prior to purchase of the Site in 2013, B&K contracted with Shannon & Wilson, Inc. (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 and then by forklift maintenance companies (Clarklift of Washington and later FMH Material Handling Solutions [FMH]). In 2010, Industrial Materials Handling, which had previously purchased FMH, vacated the Site. The Site was vacant until B&K purchased it in 2013. B&K sells, distributes, and maintains pumps, blowers, and compressors.

Sampling conducted during Phase II ESA activities indicated that HVOCs including trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC) were present in groundwater at the southeast end of the Site in the vicinity of an old concrete wash pad with a severely cracked surface (Shannon & Wilson 2014). Based on the sampling results and the Site's prior use, it was assumed that the source of the HVOC contamination was TCE degreasing solvents used by the former Site occupants to clean forklift parts on the cracked surface of the wash pad; cDCE and VC are biodegradation breakdown products of TCE.

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 18 feet (ft) below

ground surface (bgs) within the approximate extents shown on Figure 2. The northern half of the excavation was backfilled with pea gravel and the southern half with sand and gravel fill. Approximately 1,100 pounds (lbs) of Regenesis' 3D Microemulsion® electron donor product was added to the excavation during backfilling to enhance natural biodegradation of the HVOCs in groundwater at the Site post-excavation (Shannon & Wilson 2014).

Groundwater monitoring following the remedial excavation activities indicated a temporary reduction in HVOC concentrations in the immediate vicinity of the remedial excavation, followed by concentration rebound about 9 months after completion. Groundwater monitoring was suspended by SWI after the August 2014 groundwater monitoring event.

In the spring of 2016, the Riley Group, Inc. (RGI) conducted environmental explorations at the adjacent property to the east of the B&K Site and sampled selected wells on the B&K Site. This adjacent property is owned by Sea Mar Community Health Centers (Sea Mar). According to RGI's Phase II Subsurface Investigation Report (Riley Group 2016), the Sea Mar site explorations were conducted following a Phase I ESA that identified the HVOC plume at the B&K Site as a potential source of contamination for the Sea Mar property (in addition to legacy hydrocarbon contamination associated with a service station formerly located at the north end of the Sea Mar site). RGI's explorations included sampling of existing onsite monitoring wells at the Sea Mar property, installation and sampling of seven new monitoring wells in the vicinity of the HVOC plume (SM-MW-8, SM-MW-14, SM-MW-15, and SM-MW-17 through SM-MW-20), and sampling of four direct-push explorations. The groundwater samples collected during this investigation indicated that HVOCs were present in groundwater at the Sea Mar site within approximately 10 to 20 ft to the east of the property boundary with the B&K Site and up to 40 ft north of the remedial excavation at concentrations greater than the applicable Model Toxics Control Act (MTCA) Method A cleanup levels (CULs).

Between November 2016 and March 2017, LAI conducted additional RI activities on the B&K Site, Sea Mar property, and Wooldridge Boats (WB) property (located adjacent to the south of the B&K Site) to further evaluate the lateral and vertical extents of the HVOC groundwater plume. These investigation activities consisted of sampling selected B&K wells not previously sampled by RGI, and collecting groundwater samples from 21 direct-push explorations as documented in the supplemental RI report (LAI 2017).

## 1.2 Extent of Contamination

The results of the supplemental RI indicate a fairly shallow plume localized to the southeast corner of the B&K Site that extends onto the adjacent Sea Mar and WB properties.

Depth-discrete sampling results (LAI 2017) indicate that the HVOC contamination in groundwater is generally limited to the uppermost 20 ft in a silt/clay unit that underlies fill material at the Site. Low-level HVOC detections have also been observed in an underlying sand layer encountered at

approximately 22 ft bgs at the north end of the Site in direct-push exploration LB-1, 15 ft bgs near the former underground storage tank excavation in monitoring wells MW-5, MW-7, and MW-8, and 28 ft bgs at the south end in LB-10 and LB-18. The only detections observed in this sand unit were in LB-10 and LB-18 during the supplemental RI activities in 2017. One sample was collected from MW-4 (decommissioned in November 2013) in September 2013, which was screened from approximately 35 to 40 ft bgs in a deeper silt/clay unit. No HVOCs were detected in the sample collected from this deeper well.

The HVOC plume extends laterally south onto the Wooldridge property and east onto the Sea Mar property. Prior to the 2013 remedial excavation activities, the highest concentration of TCE in groundwater (1,320 micrograms per liter [µg/L]) was detected in monitoring well MW-5, formerly located within the footprint of the remedial excavation and within approximately 5 ft of existing well MW-7. After the remedial excavation, the highest concentration of TCE (1,100 µg/L) occurred in a sample collected from direct-push exploration LB-10 located near existing well MW-11 at the WB site, just south of the B&K Site boundary. This elevated concentration of TCE at the WB property suggests a current and/or historical groundwater mound or divide near the B&K and WB property boundary that resulted in HVOC distribution to both the north and south of the former wash pad source. Groundwater mounding may have resulted from leaking washwater at the wash pad through the pavement or associated drain or supply piping. A plume map based on supplemental RI data and additional groundwater data from the reporting period is presented in Figure 6.

## 1.3 Geology

Geologic logging has been conducted at multiple explorations at the Site and at the Sea Mar and Wooldridge properties by LAI, RGI, and SWI. Much of the three properties is covered with asphalt pavement or buildings. Pavement and building at the three properties are underlain by up to several feet of sand, silt, and clay fill, with portions of the north end of the B&K Site also filled with cement kiln dust. The following native soil units were observed at the Site:

- At the north end of the Site, the fill material is underlain by up to 10 ft of peat, organic silt, and clay. This peat and organic silt/clay unit decreases in thickness to the south and appears to pinch out approximately 170 ft south of the northern Site boundary (approximately 30 ft north of the wash pad excavation area). The presence of the peat and organic soils at the north end of the Site is consistent with the 1949 US Geological Survey Seattle South topographic map (USGS 1949), which shows a depression at the north end of the Site, and a 1969 aerial photograph, which reportedly shows standing water across most of the Site (Shannon & Wilson 2012). Peat and soils with high organic content result in the naturally reduced aquifer redox conditions required for biodegradation of the TCE to breakdown products and may be a factor in the limited plume extent in the northern direction of groundwater flow (Section 1.4).
- Beneath the peat and organic soil (north end) and beneath the fill (south end near the backfilled excavation), soils consist of interbedded silts and clays with occasional silty sand

layers. This interbedded unit ranges in thickness from 6 ft at the north end of the Site, to 25 ft at the Wooldridge property. HVOC groundwater contamination is present in this unit.

- A sandy unit consisting of silty sands to poorly-graded medium to fine sands was identified beneath the interbedded silt and clay unit at the east edge of the Site at thicknesses of 8 to 9 ft. Low-level HVOC groundwater contamination is present in this unit.
- A dense, low-permeability silt/clay unit, which functions as an aquitard, was encountered beneath the sand layer in explorations at the east end of the Site. This unit begins at depths of 24 to 32 ft bgs and ranges from 5 ft thick at the southeast end of the Site to at least 11 ft thick at the northeast end.
- Another saturated sand unit was observed at 29 to 34 ft bgs in the deepest well at the southeast end of the Site underlain by another silt/clay unit. HVOC groundwater contamination has not been detected in this unit.

## 1.4 Hydrogeology

Saturated conditions were generally encountered within the upper 8 to 10 ft at most explorations, typically within the interbedded silt/clay underlying the fill. This silt/clay and underlying saturated sand unit is identified as the shallow water-bearing zone at the Site. The next deeper sand unit beneath the silt/clay aquitard is identified as the deeper water-bearing zone.

The depth to groundwater measured in Site and Sea Mar 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 in an under-confined, or semi-confined, condition because the potentiometric surface represented by the groundwater elevations in the wells is 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 may 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 Sea Mar 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. However, this is based on a single set of measurements and may not be representative of the general groundwater conditions.

Based on the groundwater elevation data collected in November 2016 (LAI 2017), groundwater flow in the shallow water-bearing zone is generally to the north-northeast. This is consistent with the surface topography and the presence of the Duwamish Waterway located to the north and east (Figure 1) of the Site. Because only one well at the Site has been screened in the deeper water-bearing zone, the flow direction in the deeper zone is unknown.

# 2.0 MONITORING/INJECTION WELL INSTALLATION

Four new monitoring wells (MW-10 through MW-13 on Figures 3 through 6) were installed on September 11, 2017. These wells were installed to monitor plume conditions crossgradient to the west of the source zone (MW-10) and upgradient on the WB property (MW-11 through MW-13). MW-11 through MW-13 were each installed in the vicinity of direct-push explorations that had detections of HVOCs in groundwater (LB-10, LB-17 and LB-18) during the supplemental RI activities. The four wells were screened within the shallow water-bearing zone.

LAI provided coordination and oversight during installation of the monitoring wells. Drilling and installation were completed using hollow-stem auger drilling equipment operated by ESN Northwest under subcontract to LAI. Because these wells were installed near previously completed and logged subsurface explorations, the soil lithology was not logged during well installation. The wells were completed with a seal of cement-bentonite slurry and threaded well caps so that they may be more easily used for injection of electron donor solution should the need arise.

Wells MW-10 and MW-13 were screened between 12 and 22 ft bgs, and wells MW-11 and MW-12 were screened between 10 and 20 ft bgs, based on groundwater encountered in direct-push borings. Well completion diagrams for the wells are provided in Appendix A.

The new wells were developed on September 21, 2017 to remove formation material (silt and sand) from the well casing and filter pack prior to groundwater sampling. Nine to 13 gallons (approximately three to five well volumes) of purge water were removed from each well using a combination of surge block and a non-dedicated air displacement pump. All development water was treated and discharged to the sanitary sewer during the injection event discussed in Section 4.0.

# 3.0 BIOREMEDIATION IMPLEMENTATION

Enhanced bioremediation of HVOCs in groundwater is underway through injection of electron donor substrate (LactOil®) to the backfilled remedial excavation area shown on Figure 2. The addition of LactOil provides the electron donor necessary for natural aquifer bacteria to degrade the HVOCs through the process of reductive dechlorination. Reductive dechlorination occurs through microbially mediated reactions whereby micro-organisms obtain energy through oxidation-reduction (redox) reactions. LactOil is fermented to hydrogen and volatile fatty acids, which are used by microbes together with various electron acceptors (oxygen, nitrate, manganese [IV], ferric iron, sulfate, and carbon dioxide) to obtain energy.

LactOil was injected on January 25, 2018 to existing monitoring well MW-7, located within the footprint of the backfilled remedial excavation as shown on Figure 2. Prior to injection, the water within the backfilled excavation was extracted to provide capacity within the excavation backfill for the injection volume. The injection to MW-7 was intended to distribute donor solution throughout the permeable excavation backfill with subsequent infiltration and spreading to native aquifer material surrounding and beneath the excavation. Extracted groundwater was treated to remove HVOCs using two 55-gallon granular-activated carbon vessels (one of which was impregnated with potassium permanganate to better reduce VC concentrations), and discharged to a catch basin connected to the sanitary sewer. Discharge to the sanitary sewer was permitted under a discharge authorization from King County Industrial Waste and the Valley View Sewer District. LAI had intended to use the extracted groundwater to mix with LactOil and reinject, but the post-treatment HVOC concentrations were found to exceed the allowable levels for reuse provided in Chapter 173-200 of the Washington Administrative Code (Water Quality Standards for Ground Waters of the State of Washington).

The injection solution was generated by mixing approximately 8,000 gallons of tap water with 2 totes (480 gallons, 4,400 lbs) of LactOil in two batches, each approximately 4,480 gallons in volume. Both batches of 11 percent by volume LactOil solution were injected into the subsurface through MW-7. The first batch was injected within 2 hours of extracting groundwater from the remedial excavation. The solution was injected into the subsurface under gravity-flow conditions and was completely injected within 1 hour with no “daylighting” of product at the ground surface. The second batch was injected approximately 3 hours after the first batch. The second batch was injected under pressure using a 3-inch trash pump over 1 hour. Slight “daylighting” of solution was observed at the joint between the concrete patch for the remedial excavation and the surrounding pavement during injection of the final 300 gallons of solution. Pumping was halted as soon as “daylighting” was observed so the volume of “daylighting” solution was minor and did not enter any onsite storm drains; it was allowed to dry on the pavement surface. Injection was suspended when “daylighting” was observed to allow for the mounded groundwater to subside, then completed. The injection of the second batch occurred over approximately 90 minutes.

Precautions were taken to protect stormwater during injection. Potential impacts to stormwater were addressed at two separate locations, as follows:

- Prior to injection, the nearby B&K storm drain was plugged at a catch basin (Figure 2). This preemptive plug was to prevent any LactOil solution that "daylighted" through cracks in the paved surface, or entered the storm drain through seams/penetrations in the storm drain line from being transported off site to the public storm drain system. No LactOil solution was observed in this storm drain during injection and for at least 24 hours following injection after which the plug was removed.

LAI also monitored an offsite storm drain manhole/vault near the northeast end of the Site that receives stormwater from a storm drain located along the eastern end of the property on the Sea Mar site as well as curb drains along South 96$^{th}$ Street and Des Moines Memorial Way (Figure 2). Based on a storm drain inspection conducted prior to injection, the storm drain pipe was known to be damaged at a location approximately 50 ft north of the injection area. The damaged section appeared to be at an elevation where it intercepted the groundwater table and was, therefore, a concern for potential infiltration of injection fluid from the nearby excavation backfill targeted by the injection. LactOil injection solution was observed to enter this vault within approximately 30 minutes of completing the second injection batch. Dilute LactOil solution continued to enter the vault for approximately 20 hours after injection. Because this vault could not be plugged without causing flooding of the associated public storm drain inlets, LAI repeatedly pumped down the vault to prevent LactOil solution from leaving the vault. Pumped water was discharged to the sanitary sewer connection.

# 4.0 GROUNDWATER MONITORING

LAI conducted a pre-injection groundwater monitoring event in November 2017 and two post-injection events in April and July 2018. The monitoring event results are discussed in the following sections. The analytical results are summarized in Table 1 and the analytical laboratory reports are provided in Appendix B. The HVOC results from each sampling event are shown with baseline TCE iso-concentration contours on Figure 6.

## 4.1 Pre-Injection Monitoring

Pre-injection groundwater monitoring in November 2017 was used to evaluate contaminant conditions prior to the planned bioremediation injection event. During this event, wells 13 wells were sampled: MW-6, MW-7, MW-9, MW-10, and MW-14 on the B&K Site; MW-11, MW-12, and MW-13 on the WB site; and SM-MW-8, SM-MW-14, SM-MW-18, SM-MW-19, and SM-MW-21 on the Sea Mar property. Samples were collected using low-flow sampling techniques and submitted to ALS Laboratories of Everett, Washington for laboratory analysis of HVOCs, total organic carbon (TOC), nitrate, sulfate, acetylene, methane, ethane, and ethane. Depth-to-groundwater measurements were also collected at all accessible wells on the B&K, WB, and Sea Mar properties for development of a groundwater elevation contour map (Figure 3).

### 4.1.1 Baseline Sampling Results

Baseline sampling detected HVOCs in all wells except MW-10 and MW-13 to the west of the HVOC plume, and SM-MW-19 to the east. Baseline results are summarized below.

- TCE was detected in samples collection from 7 of 11 wells, with 6 of 7 results exceeding the MTCA Method A CUL[1] of 5 μg/L. Detections above the CUL ranged from 6.6 μg/L to 1,100 μg/l. The highest TCE concentrations were observed in MW-11 on the WB property, and SM-MW-21 (490 μg/L) installed approximately 50 ft north-northeast and downgradient of the remedial excavation area. TCE was not detected in MW-7, located between these two wells and within the footprint of the remedial excavation.
- Cis 1,2-DCE was detected in 6 of 11 wells ranging from 4.5 μg/L to 250 μg/L. Cis 1,2-DCE does not have a MTCA Method A CUL.
- VC was detected in 4 of 11 wells ranging from 0.29 μg/L to 19 μg/L. All detections exceeded the MTCA Method A CUL of 0.2 μg/L.
- Ethane and ethene, the non-toxic end products of TCE biodegradation were not detected. Acetylene, the intermediary bioproduct of abiotic (i.e., chemical) degradation of TCE, was also not detected; however, acetylene is highly reactive and commonly not detected at sites where abiotic degradation is known to occur.
- TOC was detected in all 11 wells ranging from 1.5 milligrams per liter (mg/L) to 9.8 mg/L. TOC is indicative of natural or injected carbon that can be used as electron donor for reductive dechlorination. TOC concentrations greater than 10 mg/L are generally considered adequate

[1] For unrestricted land-use.

for substantial reductive dechlorination (Major et al. 2003). These results indicate that baseline TOC was less than optimum for substantial reductive dechlorination.

- Nitrate was detected in 6 of 11 wells, ranging from 0.5 mg/L to 17 mg/L.. Nitrate is not a Site contaminant, but is measured to evaluate groundwater redox conditions. Nitrate is quickly reduced in an anaerobic environment; therefore, nitrate detections indicate areas of aerobic groundwater.
- Sulfate was detected in all 11 wells, ranging from 29 mg/L to 310 mg/L. Low to undetected results for sulfate would be indicative of the sulfate-reducing redox condition that is required for reductive dechlorination of cDCE to VC.
- Methane was detected in 3 of 11 wells, ranging from 0.05 mg/L to 4 mg/L. Elevated methane concentrations indicate the highly reduced methanogenic aquifer redox condition required for further reductive dechlorination of VC to the non-toxic end products ethene and ethane.

The baseline groundwater results generally confirmed the findings of the supplemental RI. The highest concentrations of HVOCs were present in well MW-11 (located near supplemental RI exploration LB-10, just to the south of the B&K/WB property boundary). HVOC concentrations generally fall off to the east-northeast of the B&K/Sea Mar property boundary. The TCE concentration detected at SM-MW-21 (490 µg/L), located downgradient of the remedial excavation area, suggests remaining contamination in the area of the excavation. The presence of TCE biodegradation breakdown products cDCE and VC indicate biodegradation resulting from naturally occurring organic carbon (including peat near the north end of the plume) and/or the electron donor placed in the excavation in 2013.

## 4.2 Post-Injection Monitoring

To evaluate HVOC treatment progress, LAI collected groundwater samples on March 22 and 23, 2018 and July 2 and 3, 2018. The samples were collected from the same group of wells as the baseline monitoring event with the addition SM-MW-14 and SM-MW-17A to better evaluate the plume extents to the east and north, respectively. The samples were collected using the same low-flow sampling techniques and submitted to ALS Laboratories for the same analytical suite as the baseline sampling event.

Prior to sampling, groundwater levels were measured across the Site, the WB site, and the Sea Mar site at all accessible monitoring wells (SM-MW-11 and -12 were removed or covered prior to the March 2018 sampling event). Measurements were used to determine groundwater elevations and develop groundwater surface contour maps (Figures 4 and 5). Groundwater contours are consistent with previous observations and indicate a groundwater gradient to the northeast.

### 4.2.1 March and July 2018 Sampling Results

The only substantial changes observed post-injection were at injection well MW-7. TOC concentrations increased significantly (10,000 mg/L in March decreasing to 180 mg/L in July). Nitrate and sulfate concentrations decreased, indicating a more reduced aquifer condition. TCE concentrations increased, reflecting aquifer disturbance and enhanced desorption resulting from

injection. Concentrations of cDCE and VC increased, indicating biodegradation of TCE. Biodegradation end products ethene and ethane were not detected, and acetylene was not detected.

Unfortunately, no significant changes were observed compared to baseline conditions at the other wells surrounding the injected former excavation. No significant changes in TOC, aquifer redox conditions, or concentrations of TCE and its breakdown products were observed that would indicate treatment had been enhanced beyond the excavation.

Despite no indications of beneficial injection effects beyond the former excavation, significant reductions in HVOC concentrations occurred at the monitoring well with the highest concentrations, MW-11 on the WB property. TCE concentrations decreased significantly from the November 2017 baseline (1,100 μg/L) to March 2018 (930 μg/L) and July 2018 (760 μg/L). Concentrations of cDCE also decreased from 250 μg/L baseline to post-injection results of 140 μg/L and 160 μg/L.

TCE and its breakdown products were not detected in added well SM-MW-14. At added well SM-WM-17A, TCE was not detected, while low levels of cDCE and VC breakdown products were detected. Baseline (pre-injection) results are not available for these wells.

# 5.0 CONCLUSIONS AND FUTURE PLANNED ACTIVITIES

The extent of HVOC impacts to groundwater has been adequately characterized through the supplemental RI (LAI 2017) and results from additional monitoring wells sampled during the reporting period.

With the exception of HVOC concentration decreases at well MW-11, no significant changes were observed post-injection that would indicate that biodegradation had been stimulated beyond the injected former excavation. Based on these results, in LAI's opinion, injection to the permeable backfill of the former excavation is not effective for distributing the injection fluid to the wider plume for enhancement of biodegradation.

Evaluation of alternate methods for amending the impacted aquifer with electron donor is therefore recommended. We recommend the following:

- Clear water injection testing at wells MW-11, MW-12, and MW-13 to evaluate if reasonable injection rates can be achieved.
- If the clear water injection test indicates that electron donor injection to these wells is infeasible due to low injection rates, we recommend use of solid electron donor substrate (e.g., EHC®). EHC is a product containing fine particles of slow-release electron donor and of zero valent iron for stimulation of biodegradation and complementary abiotic degradation of TCE. EHC would be injected as a slurry to a grid of direct-push injection borings within the target treatment area. With this approach, injected borings would likely be on a 3 to 5 ft grid spacing to achieve the optimum treatment
- Alternately, extending the remedial excavation to the south past monitoring well MW-11 may result in a more rapid cleanup. Under this alternative, the 2013 remedial excavation would be extended to the south past monitoring well MW-11 to remove contaminated soil impacting the surrounding groundwater. The remedial excavation would be backfilled with material amended with a slow-release electron donor to provide for enhanced bioremediation of the remaining residual downgradient groundwater contamination.

Additional groundwater monitoring and clear water injection testing are planned for July 2019. Depending on the results of injection testing, additional electron donor injection (liquid LactOil or solid substrate depending on the results of the clear water test) will be performed in August or September 2019. Additional groundwater monitoring events will be scheduled after completion of the electron donor injection.

# 6.0 USE OF THIS REPORT

This Bioremediation Injection and Groundwater Monitoring Status Report has been prepared for the exclusive use of B&K for specific application to the HVOC bioremediation cleanup action at the B&K facility in Seattle, Washington. 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.

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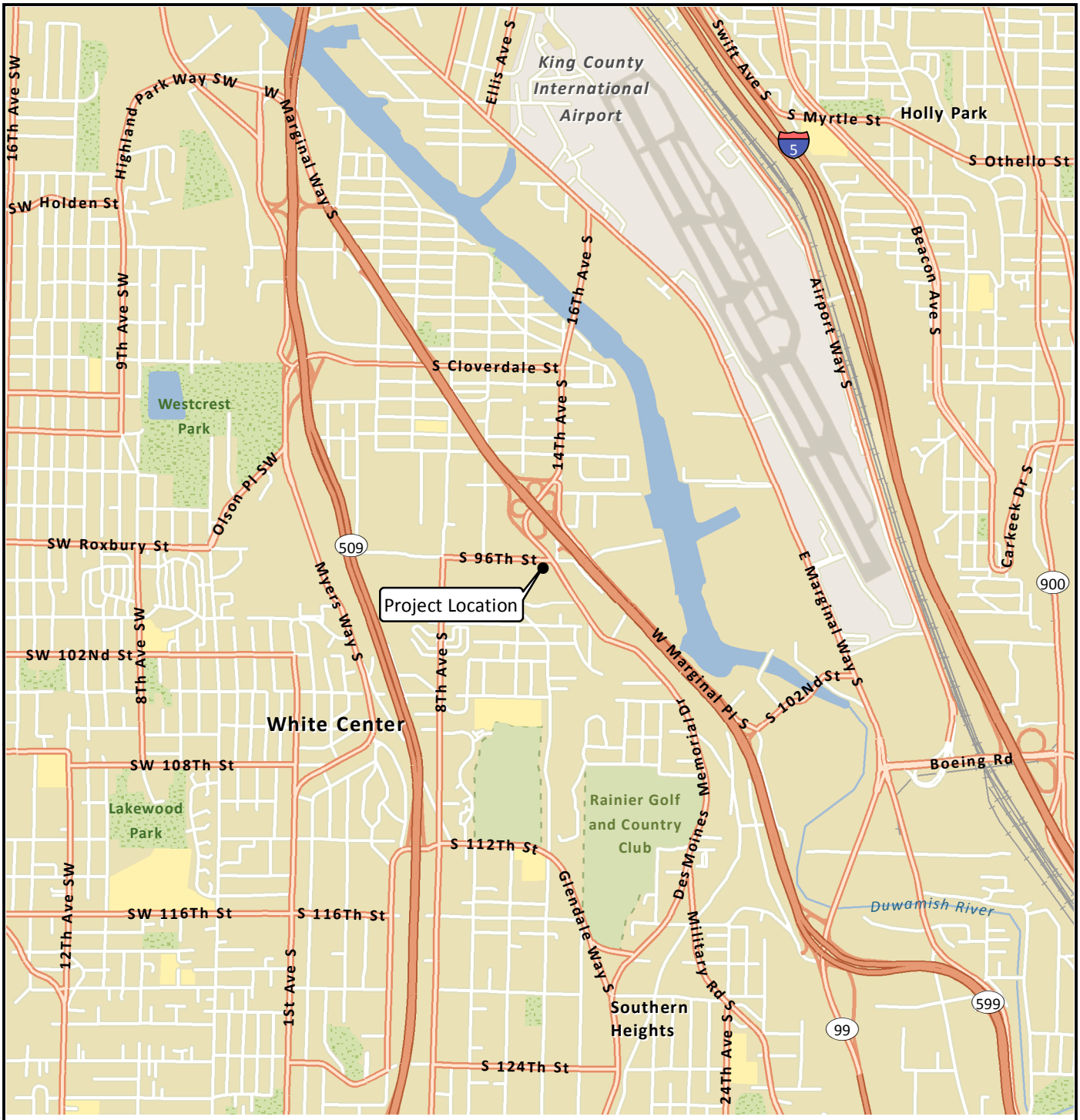



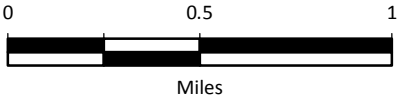



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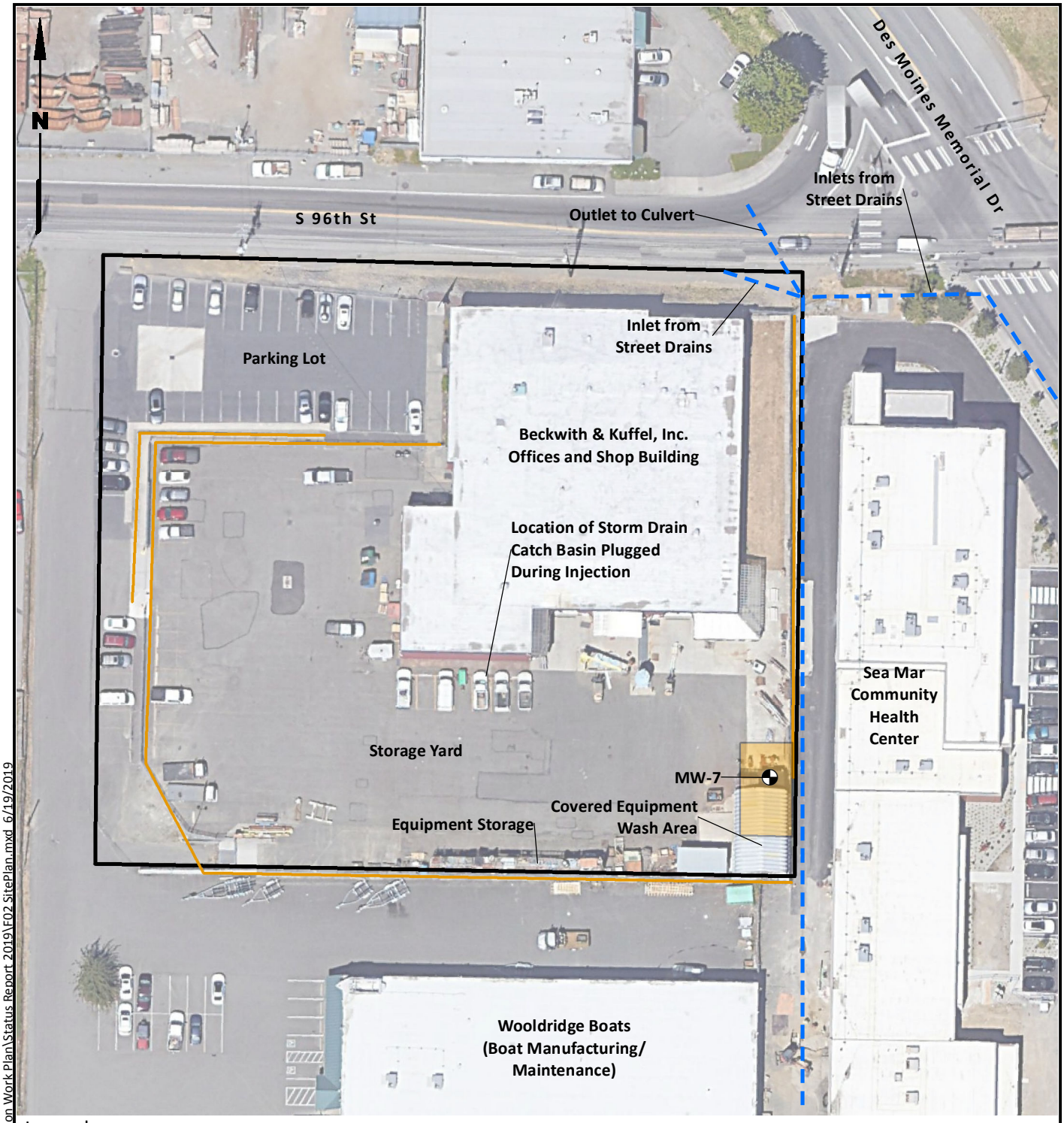
| Beckwith & Kuffel<br>Seattle, Washington | **Vicinity Map** | Figure<br>1 |




Legend

- Monitoring Well (LAI)
- Storm Drain Vault Monitored During Injection
- Storm Drain on Adjacent Property
- Retaining Wall
- Approximate Extent of Remedial Excavation
- Subject Property

Note

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

0 70 140

Scale in Feet

Data Sources: King County GIS; Google Earth Imagery.

G:\Projects\1645\001\010\014\Bioremediation Work Plan\Status Report 2019\F02 SitePlan.mxd 6/19/2019

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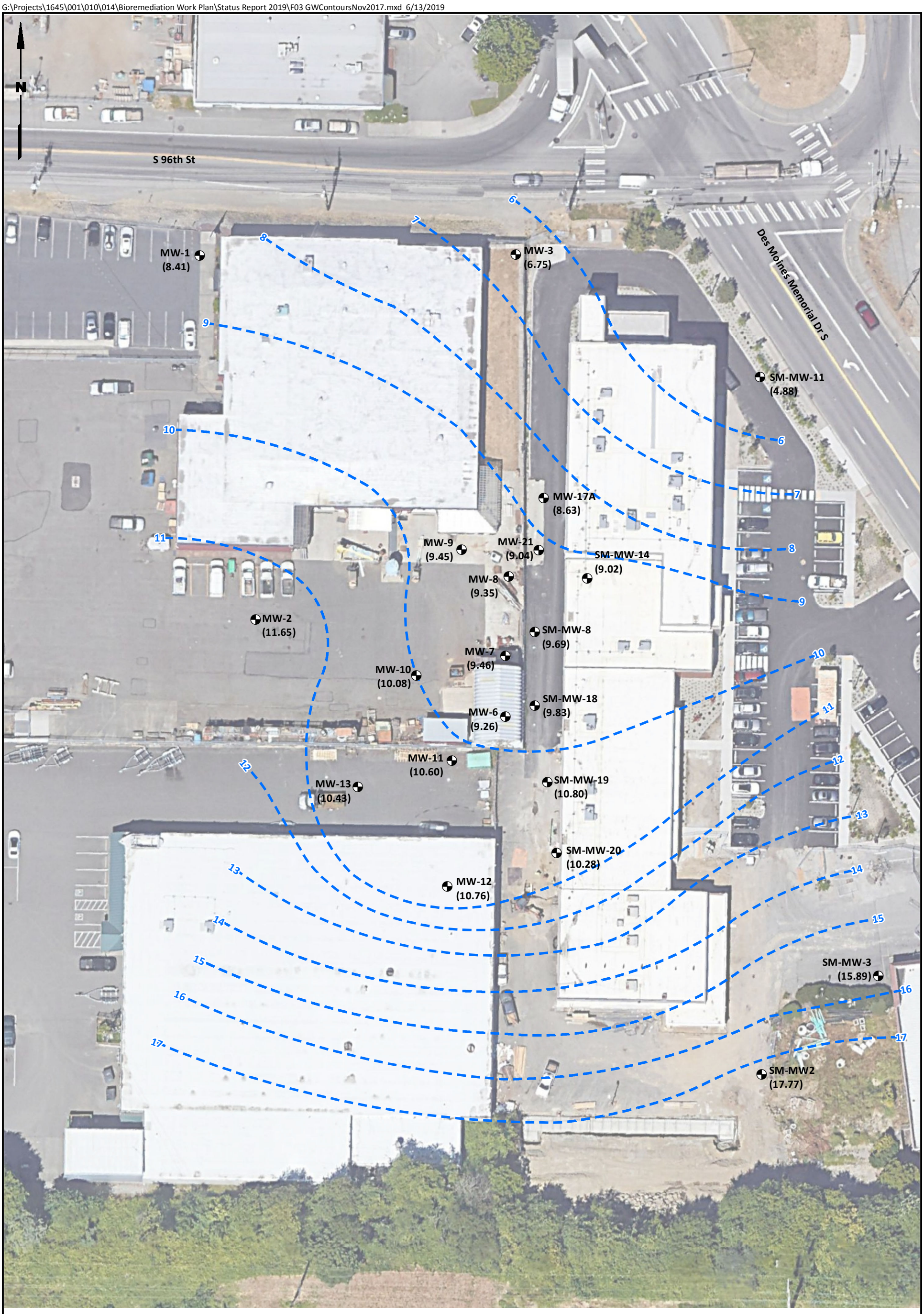
| Beckwith & Kuffel, Inc.<br>Seattle, Washington | **Site Plan** | Figure<br>2 |
|---|---|---|

G:\Projects\1645\001\010\014\Bioremediation Work Plan\Status Report 2019\F03 GWContoursNov2017.mxd 6/13/2019




Legend

- Monitoring Well (November 2017)
- Groundwater Contour

0 50 100

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.

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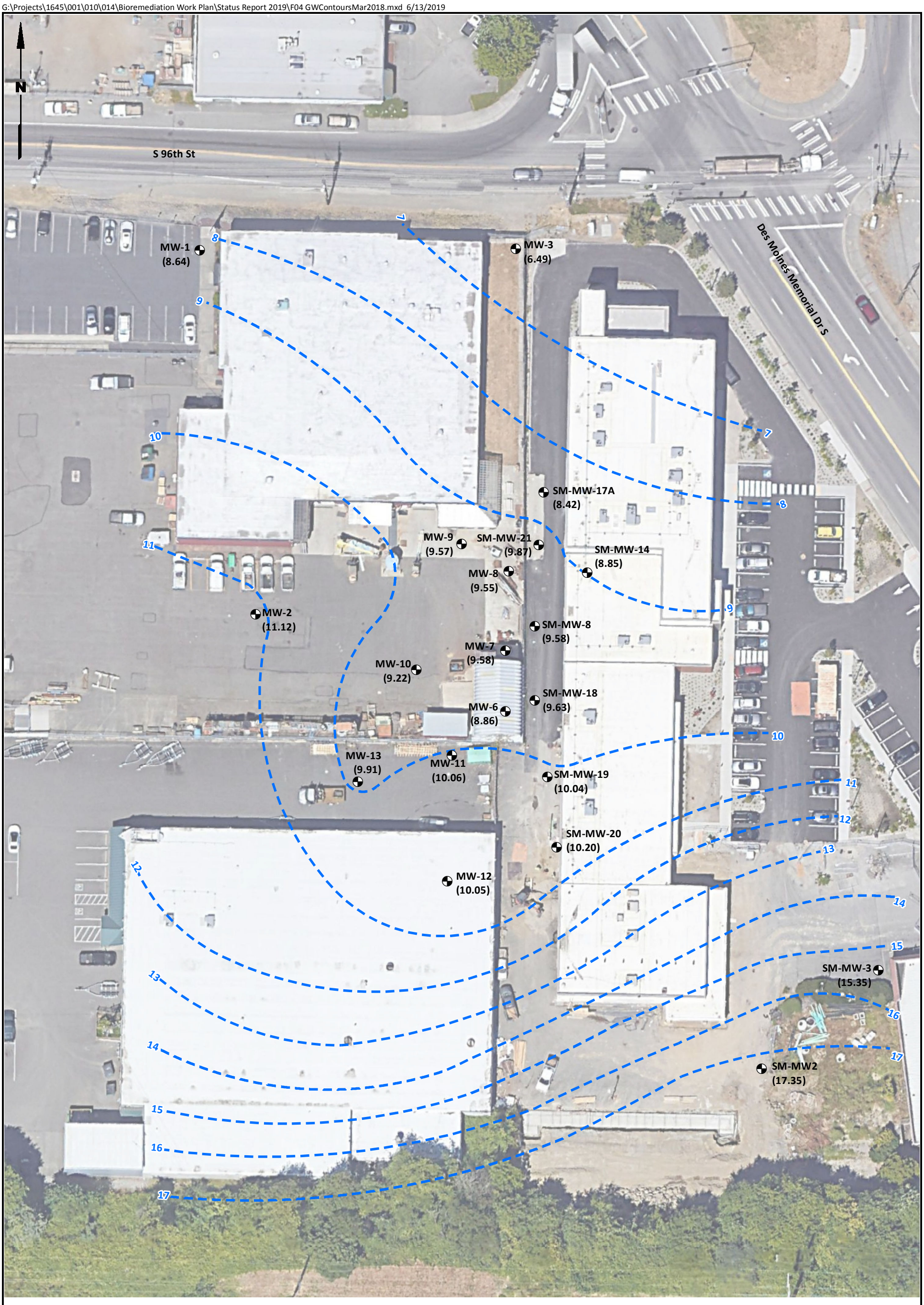
| | | |
|---|---|---|
| Status Report<br>Beckwith & Kuffel, Inc.<br>Seattle, Washington | **Groundwater Contours<br>November 2017** | Figure<br>3 |

G:\Projects\1645\001\010\014\Bioremediation Work Plan\Status Report 2019\F04 GWContoursMar2018.mxd 6/13/2019




Legend

- Monitoring Well (March 2018)
- Groundwater Contour

0 50 100

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.

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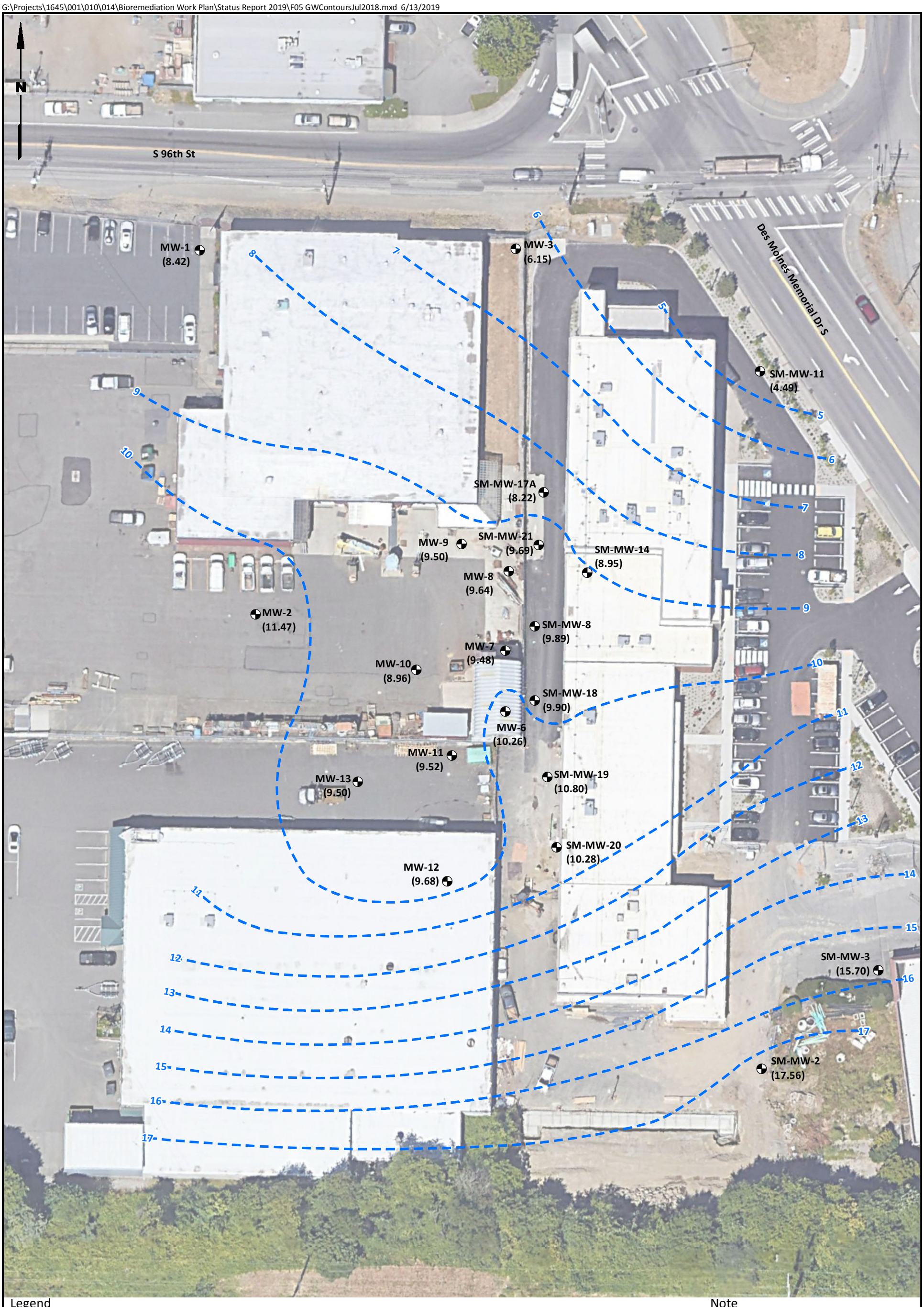
| | | |
|---|---|---|
| Status Report<br>Beckwith & Kuffel, Inc.<br>Seattle, Washington | **Groundwater Contours<br>March 2018** | Figure<br>4 |

G:\Projects\1645\001\010\014\Bioremediation Work Plan\Status Report 2019\F05 GWContoursJul2018.mxd 6/13/2019




Legend

- Monitoring Well (July 2018)
- Groundwater Contour

NM = Not Measured

0 50 100

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.

| | | |
|---|---|---|
| Status Report<br>Beckwith & Kuffel, Inc.<br>Seattle, Washington | **Groundwater Contours<br>July 2018** | Figure<br>5 |

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G:\Projects\1645\001\010\014\Bioremediation Work Plan\Status Report 2019\F06 HVOCSamplingResults.mxd 6/20/2019

N

S 96th St

Des Moines Memorial Dr S

| SM-MW-17A | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | NS | ND | ND |
| Cis 1,2-DCE | NS | ND | 4.8 |
| VC | NS | 0.27 | 6.8 |

| MW-9 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 6.6 | 12 | 34 |
| Cis 1,2-DCE | 30 | 17 | 11 |
| VC | 0.29 | ND | 0.24 |

| MW-7 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | ND | 24 | 16 |
| Cis 1,2-DCE | 4.5 | 74 | 56 |
| VC | 3.7 | 15 | 8.2 |

| MW-10 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | ND | ND | ND |
| Cis 1,2-DCE | ND | ND | ND |
| VC | ND | ND | ND |

| MW-13 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | ND | ND | ND |
| Cis 1,2-DCE | ND | ND | ND |
| VC | ND | ND | ND |

| MW-11 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 1,100 | 930 | 760 |
| Cis 1,2-DCE | 250 | 140 | 160 |
| VC | 0.53 | 0.47 | 0.57 |

| MW-12 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 73 | 78 | 62 |
| Cis 1,2-DCE | 18 | 16 | 17 |
| VC | ND | ND | ND |

| SM-MW-21 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 490 | 550 | 440 |
| Cis 1,2-DCE | 74 | 55 | 50 |
| VC | 19 | 9.1 | 8.3 |

| SM-MW-14 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | NS | ND | ND |
| Cis 1,2-DCE | NS | ND | ND |
| VC | NS | ND | ND |

| SM-MW-8 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 36 | 39 | 27 |
| Cis 1,2-DCE | 8.1 | 6.6 | 6.8 |
| VC | ND | ND | ND |

| SM-MW-18 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 2.9 | 2.4 | 9.3 |
| Cis 1,2-DCE | ND | ND | ND |
| VC | ND | ND | ND |

| MW-6 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 9.4 | 21 | 11 |
| Cis 1,2-DCE | ND | ND | ND |
| VC | ND | ND | ND |

| SM-MW-19 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | ND | ND | ND |
| Cis 1,2-DCE | ND | ND | ND |
| VC | ND | ND | ND |

MW-1 (NS)
GP-2
GP-15
GP-22 ()
LB-11
MW-3
LB-13 (NS)
SM-MW-6/OS-3
SM-MW-12
LB-14 (NS)
GP-7
SM-MW-11 (NS)
LB-1 (ND)
LB-2 (ND)
LB-3 (ND)
LB-4 (ND)
GP-23
MW-8
50 µg/L
MW-5
MW-4
MW-2 (NS)
LB-12 (NS)
LB-7 (ND)
LB-5 (ND)
LB-8 (2.6)
LB-6 (ND)
LB-10 (1,100)
LB-17 (3.3)
500 µg/L
LB-9 (69)
LB-16 (8.2)
LB-15 (370)
LB-18 (76)
SM-MW-20
LB-19 (ND)
50 µg/L
5 µg/L
LB-20 (ND)
LB-21 (ND)
SM-MW-3 (NS)
SM-MW-2 (NS)

## Legend

- MW-12 — Monitoring Well (LAI)
- SM-MW-11 (NS) — Monitoring Well (Sea Mar)
- MW-4 — Former Monitoring Well (Decommissioned 2013)
- LB-1 — Supplemental RI Direct-Push Borings (2017)
- TCE Baseline Iso-Concentration Contour (Approx.)
- TCE Baseline Iso-Concentration Contour

| MW-12 | Nov-17 | Mar-18 | Jul-18 |
|---|---|---|---|
| TCE | 73 | 78 | 62 |

- MW-12 - Monitoring Well Designation
- Nov-17 / Mar-18 / Jul-18 - Date
- TCE - Detected Concentration
- Detected Analyte

0 50 100

Scale in Feet

Data Source: Sea Mar; Google Earth Imagery.

## Notes

1. Iso-concentration contours also informed by prior results from temporary groundwater borings not shown.
2. All detected concentrations are reported in micrograms per liter (µg/L).
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

cis-1,2-DCE = cis-1,2-dichloroethene
ND = not detected
NS = not sampled
RI = remedial investigation
TCE = trichoroethene
VC = vinyl chloride

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Beckwith & Kuffel, Inc.
Seattle, Washington

**Halogenated Volatile Organic Compound Sampling Results**

Figure 6

# Table 1
## Groundwater Analytical Results
## 2017-2018 Bioremediation Injection and Groundwater Monitoring
## Beckwith & Kuffel, Inc. Site
## Seattle, Washington

| Analyte | MTCA Method A Cleanup Level | Sampling Location, Field Sample ID, Laboratory Sample ID, Sampling Date | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MW-6<br>MW-6<br>EV17110052-02<br>11/7/2017 | MW-6<br>MW-6<br>EV18030152-02<br>3/22/2018 | MW-6<br>MW-6<br>EV18070011-01<br>7/2/2018 | MW-7<br>MW-7<br>EV17110052-03<br>11/7/2017 | MW-7<br>MW-14 (Dup)<br>EV17110052-10<br>11/7/2017 | MW-7<br>MW-7<br>EV18030152-06<br>3/22/2018 | MW-7<br>MW-7<br>EV18070011-02<br>7/2/2018 | MW-9<br>MW-9<br>EV17110052-05<br>11/7/2017 | MW-9<br>MW-9<br>EV18030152-04<br>3/22/2018 | MW-9<br>MW-9<br>EV18070011-03<br>7/2/2018 | MW-10<br>MW-10<br>EV17110052-06<br>11/7/2017 | MW-10<br>MW-10<br>EV18030152-03<br>3/22/2018 | MW-10<br>MW-10<br>EV18070011-04<br>7/2/2018 | MW-11<br>MW-11<br>EV17110052-07<br>11/7/2017 |
| **General Chemistry (mg/L; EPA 300.0/SM5310C)** | | | | | | | | | | | | | | | |
| Nitrogen, Nitrate (as N) | NA | 0.15 U | **0.50** | **0.26** | **6.1** | **6.0** | **1.4** | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | 0.15 U | **0.50** |
| Sulfate | NA | **29** | **31** | **35** | **53** | **54** | **18** | **20** | **40** | **45** | **42** | **74** | **49** | **65** | **140** |
| Total Organic Carbon | NA | **2.4** | **4.0** | **3.2** | **9.8** | **9.9** | **10,000** | **180** | **6.6** | **6.4** | **2.0** | **6.9** | **5.0** | **5.4** | **5.4** |
| | | | | | | | | | | | | | | | |
| **Dissolved Gases (mg/L; RSK-175)** | | | | | | | | | | | | | | | |
| Acetylene | NA | 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 | 0.010 U | 0.010 U | 0.010 U |
| Ethane | NA | 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 | 0.010 U | 0.010 U | 0.010 U |
| Ethene | NA | 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 | 0.010 U | 0.010 U | 0.010 U |
| Methane | NA | 0.010 U | 0.010 U | 0.010 U | **4.0** | **3.5** | **1.7** | **2.0** | **0.25** | **0.12** | **0.070** | 0.010 U | 0.010 U | **0.020** | 0.010 U |
| | | | | | | | | | | | | | | | |
| **Volatile Organic Compounds (µg/L; SW-846 8260C)** | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | 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 |
| 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 | **3.7** |
| 1,2-Dichloroethane | NA | 2.0 U | -- | 2.0 U | 2.0 U | 2.0 U | -- | **3.5** | 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 | **4.5** | **5.1** | **74** | **56** | **30** | **17** | **11** | 2.0 U | 2.0 U | 2.0 U | **250** |
| trans-1,2-Dichloroethene | NA | 2.0 U | -- | 2.0 U | 2.0 U | 2.0 U | -- | **2.1** | 2.0 U | -- | 2.0 U | 2.0 U | -- | 2.0 U | **5.5** |
| Trichloroethene | 5 | **9.4** | **21** | **11** | 2.0 U | 2.0 U | **24** | **16** | **6.6** | **12** | **34** | 2.0 U | 2.0 U | 2.0 U | **1,100** |
| 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 |
| Vinyl Chloride | 0.2 | 0.20 U | 0.20 U | 0.20 U | **3.7** | **4.0** | **15** | **8.2** | **0.29** | 0.20 U | **0.24** | 0.20 U | 0.20 U | 0.20 U | **0.53** |

# Table 1
## Groundwater Analytical Results
## 2017-2018 Bioremediation Injection and Groundwater Monitoring
## Beckwith & Kuffel, Inc. Site
## Seattle, Washington

| Analyte | MTCA Method A Cleanup Level | Sampling Location, Field Sample ID, Laboratory Sample ID, Sampling Date | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MW-11<br>MW-11<br>EV18030152-07<br>3/22/2018 | MW-11<br>DUP1<br>EV18030152-01<br>3/22/2018 | MW-11<br>MW-11<br>EV18070011-05<br>7/3/2018 | MW-11<br>DUP<br>EV18070011-14<br>7/2/2018 | MW-12<br>MW-12<br>EV17110052-08<br>11/7/2017 | MW-12<br>MW-12<br>EV18030152-05<br>3/22/2018 | MW-12<br>MW-12<br>EV18070011-06<br>7/2/2018 | MW-13<br>MW-13<br>EV18030152-11<br>3/22/2018 | MW-13<br>MW-13<br>EV17110052-09<br>11/7/2017 | MW-13<br>MW-13<br>EV18070011-07<br>7/2/2018 | MW-8<br>SM-MW-8<br>EV17110185-01<br>11/28/2017 | SM-MW-8<br>SM-MW-8<br>EV18030152-08<br>3/22/2018 | SM-MW-8<br>SM-MW-8<br>EV18070011-10<br>7/2/2018 | SM-MW-14<br>SM-MW-14<br>EV18030153-03<br>3/23/2018 |
| **General Chemistry (mg/L; EPA 300.0/SM5310C)** | | | | | | | | | | | | | | | |
| Nitrogen, Nitrate (as N) | NA | **0.70** | **0.69** | **0.87 J** | 0.15 UJ | **1.0** | **1.1** | **1.1** | 0.15 U | 0.15 U | 0.15 U | **1.4** | **1.9** | **1.5** | 0.15 U |
| Sulfate | NA | **110** | **110** | **84 J** | **110 J** | **53** | **48** | **51** | **93** | **130** | **120** | **120** | **130** | **120** | **74** |
| Total Organic Carbon | NA | **3.2** | **3.4** | **3.1** | **2.8** | **3.6** | **4.1** | **3.8** | **3.6** | **2.8** | **4.3** | **1.6** | **2.4** | **1.6** | **2.9** |
| | | | | | | | | | | | | | | | |
| **Dissolved Gases (mg/L; RSK-175)** | | | | | | | | | | | | | | | |
| Acetylene | NA | 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 | 0.010 U | 0.010 U | 0.010 U |
| Ethane | NA | 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 | 0.010 U | 0.010 U | 0.010 U |
| Ethene | NA | 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 | 0.010 U | 0.010 U | 0.010 U |
| Methane | NA | 0.010 U | 0.010 U | **0.050 J** | 0.010 UJ | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | **0.020** | 0.010 U | 0.010 U | 0.010 U | 0.010 U |
| | | | | | | | | | | | | | | | |
| **Volatile Organic Compounds (µg/L; SW-846 8260C)** | | | | | | | | | | | | | | | |
| 1,1-Dichloroethane | NA | -- | -- | 2.0 U | 2.0 U | 2.0 U | -- | 2.0 U | -- | 2.0 U | 2.0 U | **2.3** | -- | **2.1** | -- |
| 1,1-Dichloroethene | NA | -- | -- | **2.7** | **2.7** | 2.0 U | -- | 2.0 U | -- | 2.0 U | 2.0 U | 2.0 U | -- | 2.0 U | -- |
| 1,2-Dichloroethane | 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 | -- |
| cis-1,2-Dichloroethene | NA | **140** | **130** | **160** | **160** | **18** | **16** | **17** | 2.0 U | 2.0 U | 2.0 U | **8.1** | **6.6** | **6.8** | 2.0 U |
| trans-1,2-Dichloroethene | NA | -- | -- | **4.0** | **3.9** | 2.0 U | -- | 2.0 U | -- | 2.0 U | 2.0 U | 2.0 U | -- | 2.0 U | -- |
| Trichloroethene | 5 | **930** | **930** | **760** | **790** | **73** | **78** | **62** | 2.0 U | 2.0 U | 2.0 U | **36** | **39** | **27** | 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 | -- |
| Vinyl Chloride | 0.2 | **0.47** | **0.50** | **0.57** | **0.54** | 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 |

# Table 1
## Groundwater Analytical Results
## 2017-2018 Bioremediation Injection and Groundwater Monitoring
## Beckwith & Kuffel, Inc. Site
## Seattle, Washington

| Analyte | MTCA Method A Cleanup Level | Sampling Location, Field Sample ID, Laboratory Sample ID, Sampling Date | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SM-MW-14<br>SM-MW-14<br>EV18070011-09<br>7/2/2018 | MW-17A<br>MW-17A<br>EV18030153-01<br>3/23/2018 | SM-MW-17A<br>SM-MW-17A<br>EV18070011-08<br>7/2/2018 | MW-18<br>SM-MW-18<br>EV17110185-02<br>11/28/2017 | SM-MW-18<br>SM-MW-18<br>EV18030152-09<br>3/22/2018 | SM-MW-18<br>SM-MW-18<br>EV18070011-11<br>7/2/2018 | MW-19<br>MW-19<br>EV17110052-11<br>11/7/2017 | SM-MW-19<br>SM-MW-19<br>EV18030152-10<br>3/22/2018 | SM-MW-19<br>SM-MW-19<br>EV18070011-12<br>7/2/2018 | MW-21<br>SM-MW-21<br>EV17110185-03<br>11/28/2017 | MW-21<br>MW-21<br>EV18030153-02<br>3/23/2018 | SM-MW-21<br>SM-MW-21<br>EV18070011-13<br>7/2/2018 |
| **General Chemistry (mg/L; EPA 300.0/SM5310C)** | | | | | | | | | | | | | |
| Nitrogen, Nitrate (as N) | NA | 0.15 U | 0.15 U | 0.15 U | **14** | **12** | **9.1** | **17** | **12** | **18** | 0.15 U | 0.15 U | **0.19** |
| Sulfate | NA | **65** | **14** | **13** | **310** | **330** | **360** | **220** | **160** | **180** | **48** | **54** | **65** |
| Total Organic Carbon | NA | **2.2** | **2.8** | **3.0** | **1.8** | **1.6** | **1.8** | **1.5** | **1.9** | **6.1** | **2.6** | **2.6** | **2.6** |
| | | | | | | | | | | | | | |
| **Dissolved Gases (mg/L; RSK-175)** | | | | | | | | | | | | | |
| Acetylene | NA | 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 | 0.010 U |
| Ethane | NA | 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 | 0.010 U |
| Ethene | NA | 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 | 0.010 U |
| Methane | NA | 0.010 U | **0.78** | **0.90** | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | 0.010 U | **0.050** | **0.070** | **0.070** |
| | | | | | | | | | | | | | |
| **Volatile Organic Compounds (µg/L; SW-846 8260C)** | | | | | | | | | | | | | |
| 1,1-Dichloroethane | NA | 2.0 U | -- | 2.0 U | 2.0 U | -- | 2.0 U | **2.2** | -- | 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 | **3.1** | -- | **2.6** |
| 1,2-Dichloroethane | NA | 2.0 U | -- | 2.0 U | 2.0 U | -- | 2.0 U | 2.0 U | -- | 2.0 U | 2.0 U | -- | **6.3** |
| cis-1,2-Dichloroethene | NA | 2.0 U | 2.0 U | **4.8** | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U | **74** | **55** | **50** |
| 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 |
| Trichloroethene | 5 | 2.0 U | 2.0 U | 2.0 U | **2.9** | **2.4** | **9.3** | 2.0 U | 2.0 U | 2.0 U | **490** | **550** | **440** |
| 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 |
| Vinyl Chloride | 0.2 | 0.20 U | **0.27** | **6.8** | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U | **19** | **9.1** | **8.3** |

**Notes:**

Only VOCs with detections are shown. For all results, see the laboratory analytical reports in Appendix A.

-- = not analyzed
U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate, and may be inaccurate or imprecise.
**Bold** = detected compound
**Green Box** = detected concentration is greater than cleanup level

**Abbreviations/Acronyms:**

µg/L = microgram per liter
EPA = US Environmental Protection Agency
ID = identification
mg/L = milligram per liter
MTCA = Model Toxics Control Act
NA = not applicable
VOC = volatile organic compound

APPENDIX A

# Monitoring Well 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. |

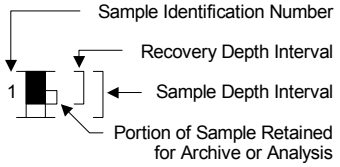
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

## 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 after drilling/excavation/well

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc. Site
Seattle, Washington

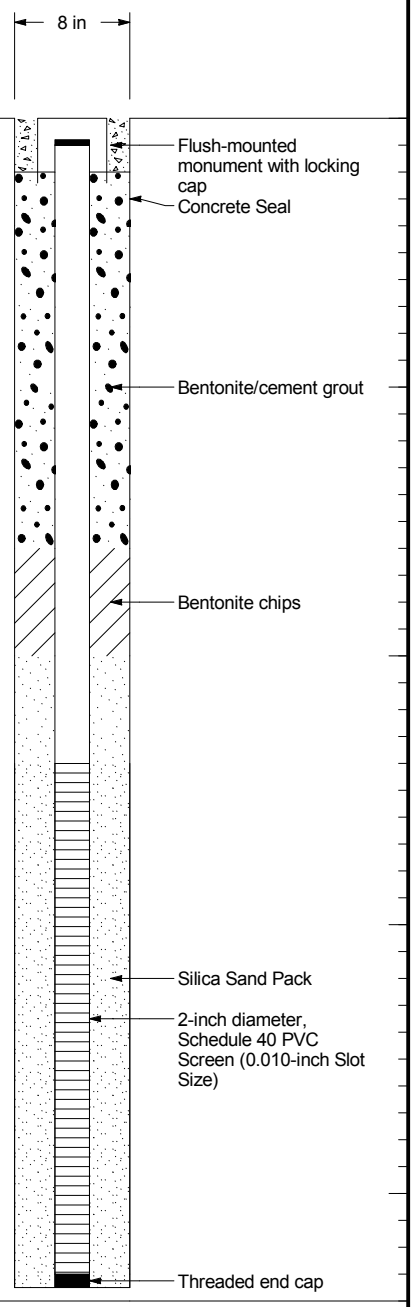
Soil Classification System and Key

Figure
A-1

# MW-10

| SAMPLE DATA | | | | SOIL PROFILE | | | GROUNDWATER |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Sample Number & Interval | Sampler Type | Blows/Foot | Test Data | Graphic Symbol | USCS Symbol | Drilling Method:<br>Ground Elevation (ft): | Water Level |

Detail
(DOE#: BKX558)




0
5
10
15
20
25

No Lithology Taken

Boring Completed 09/11/17
Total Depth of Boring = 22.0 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.

1645001.010.011 6/20/19 N:\PROJECTS\1645001.010.011.GPJ WELL LOG

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc. Site
Seattle, Washington

Log of MW-10

Figure
A-2

# MW-11

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

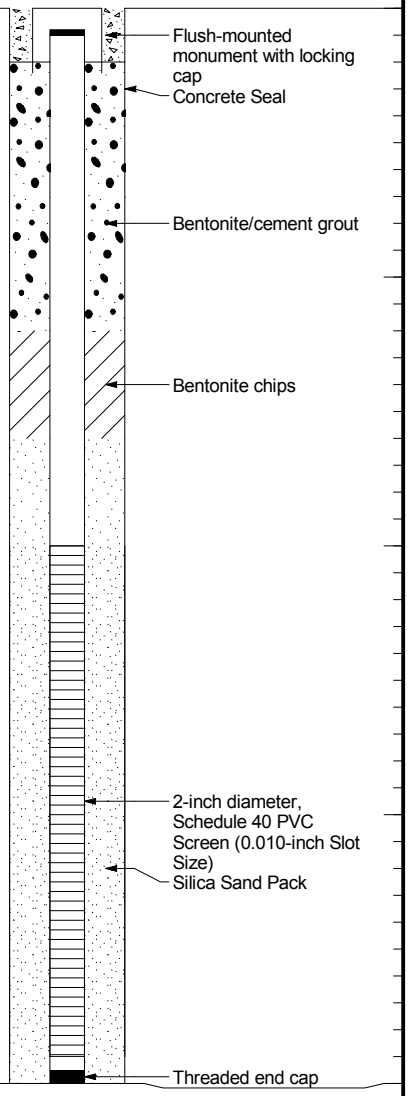
Depth (ft) | Sample Number & Interval | Sampler Type | Blows/Foot | Test Data | Graphic Symbol | USCS Symbol | Drilling Method: | Ground Elevation (ft): | Water Level

Detail (DOE#: BKX557)

8 in

Groundwater not encountered.

No Lithology Taken




Boring Completed 09/11/17
Total Depth of Boring = 20.0 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.

1645001.010.011 6/20/19 N:\PROJECTS\1645001.010.011.GPJ WELL LOG

LANDAU ASSOCIATES

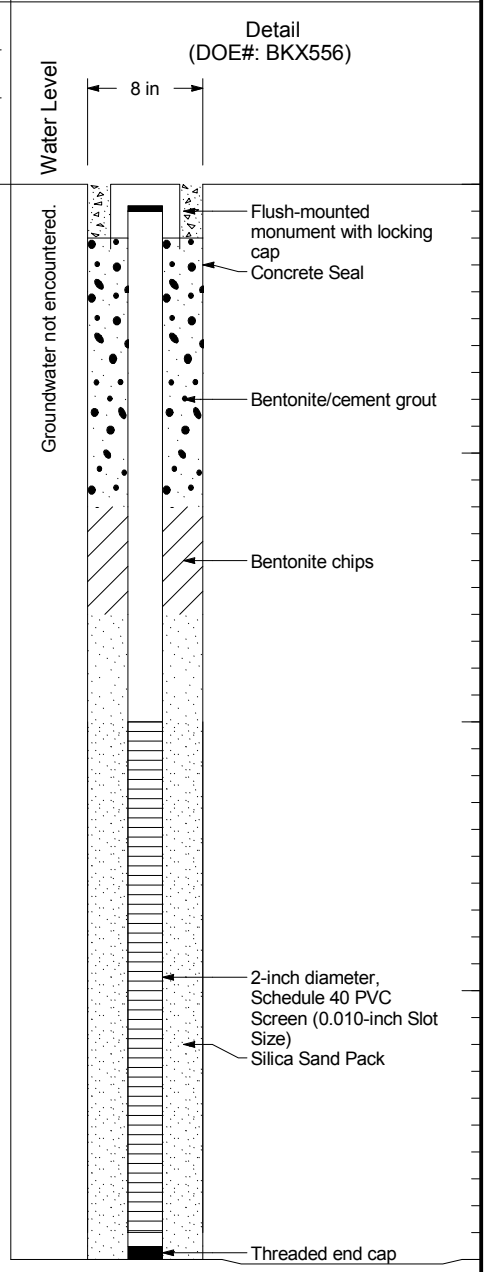
Beckwith & Kuffel, Inc. Site
Seattle, Washington

Log of MW-11

Figure
A-3

# MW-12

| SAMPLE DATA | | | | SOIL PROFILE | | | GROUNDWATER |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Sample Number & Interval | Sampler Type | Blows/Foot | Test Data | Graphic Symbol | USCS Symbol | Drilling Method:<br>Ground Elevation (ft): | Water Level |




No Lithology Taken

Boring Completed 09/11/17
Total Depth of Boring = 20.0 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.

1645001.010.011 6/20/19 N:\PROJECTS\1645001.010.011.GPJ WELL LOG

LANDAU ASSOCIATES

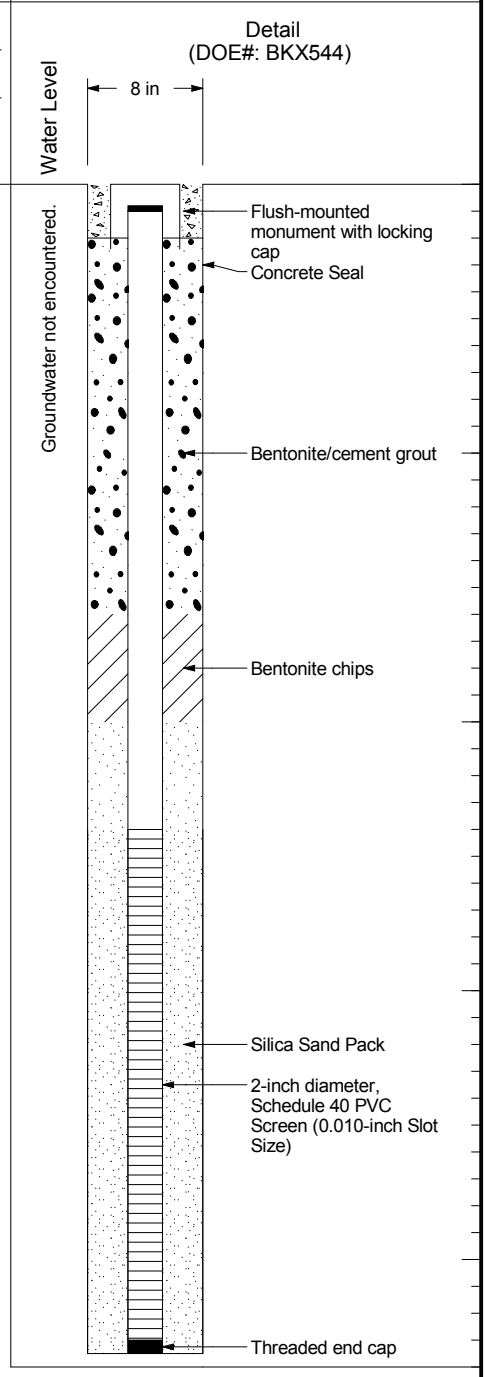
Beckwith & Kuffel, Inc. Site
Seattle, Washington

Log of MW-12

Figure
A-4

# MW-13

| SAMPLE DATA | | | | SOIL PROFILE | | | GROUNDWATER |
|---|---|---|---|---|---|---|---|
| Depth (ft) | Sample Number & Interval | Sampler Type | Blows/Foot | Test Data | Graphic Symbol | USCS Symbol | Drilling Method:<br>Ground Elevation (ft): | Water Level |




0
5
10
15
20
25

No Lithology Taken

Boring Completed 09/11/17
Total Depth of Boring = 22.0 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.

1645001.010.011 6/20/19 N:\PROJECTS\1645001.010.011.GPJ WELL LOG

LANDAU ASSOCIATES

Beckwith & Kuffel, Inc. Site
Seattle, Washington

Log of MW-13

Figure
A-5

APPENDIX B

# Laboratory Analytical Reports

November 20, 2017

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

Dear Mr. Johnson,

On November 8th, 11 samples were received by our laboratory and assigned our laboratory project number EV17110052. The project was identified as your B&K - Baseline. 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.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-01 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 |
| CLIENT SAMPLE ID | Trip Blank-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | 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.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-01 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 |
| CLIENT SAMPLE ID | Trip Blank-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **104** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **93.8** | 11/08/2017 | 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.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-02 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 12:10:00 PM |
| CLIENT SAMPLE ID | MW-6-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | **9.4** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-02 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 12:10:00 PM |
| CLIENT SAMPLE ID | MW-6-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **29** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **2.4** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **99.2** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **94.5** | 11/08/2017 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-03 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 1:15:00 PM |
| CLIENT SAMPLE ID | MW-7-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | **3.7** | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **4.5** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-03 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 1:15:00 PM |
| CLIENT SAMPLE ID | MW-7-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | **4.0** | 0.050 | 5 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | **6.1** | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **53** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **9.8** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **111** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **97.4** | 11/08/2017 | DLC |

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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-04 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 12:37:00 PM |
| CLIENT SAMPLE ID | MW-8-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | **0.82** | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | **2.1** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **31** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | **11** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | **440** | 200 | 100 | UG/L | 11/09/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-04 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 12:37:00 PM |
| CLIENT SAMPLE ID | MW-8-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | **0.020** | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **78** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **3.1** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **95.3** | 11/08/2017 | DLC |
| 1,2-Dichloroethane-d4 100X Dilution | EPA-8260 | **105** | 11/09/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **96.6** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene 100X Dilution | EPA-8260 | **96.2** | 11/09/2017 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-05 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 11:51:00 AM |
| CLIENT SAMPLE ID | MW-9-20171107 | 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 | 11/09/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Vinyl Chloride | EPA-8260 | **0.29** | 0.20 | 1 | UG/L | 11/09/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **30** | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trichloroethene | EPA-8260 | **6.6** | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/09/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-05 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 11:51:00 AM |
| CLIENT SAMPLE ID | MW-9-20171107 | 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 | 11/09/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Methane | RSK-175 | **0.25** | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **40** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **6.6** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **106** | 11/09/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **97.1** | 11/09/2017 | DLC |

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



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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-06 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 11:12:00 AM |
| CLIENT SAMPLE ID | MW-10-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-06 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 11:12:00 AM |
| CLIENT SAMPLE ID | MW-10-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **74** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **6.9** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **105** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **98.2** | 11/08/2017 | DLC |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-07 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 10:20:00 AM |
| CLIENT SAMPLE ID | MW-11-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | **0.53** | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | **3.7** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | **5.5** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **250** | 200 | 100 | UG/L | 11/09/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | **1100** | 200 | 100 | UG/L | 11/09/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-07 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 10:20:00 AM |
| CLIENT SAMPLE ID | MW-11-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | **0.50** | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **140** | 26 | 100 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **5.4** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **97.4** | 11/08/2017 | DLC |
| 1,2-Dichloroethane-d4 100X Dilution | EPA-8260 | **106** | 11/09/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **96.2** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene 100X Dilution | EPA-8260 | **95.2** | 11/09/2017 | DLC |

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| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-08 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 10:25:00 AM |
| CLIENT SAMPLE ID | MW-12-20171107 | 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 | 11/09/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 11/09/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **18** | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trichloroethene | EPA-8260 | **73** | 20 | 10 | UG/L | 11/09/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/09/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-08 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 10:25:00 AM |
| CLIENT SAMPLE ID | MW-12-20171107 | 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 | 11/09/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/09/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | **1.0** | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **53** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **3.6** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **105** | 11/09/2017 | DLC |
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 11/09/2017 | DLC |
| 4-Bromofluorobenzene 10X Dilution | EPA-8260 | **96.8** | 11/09/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **94.1** | 11/09/2017 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-09 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 9:40:00 AM |
| CLIENT SAMPLE ID | MW-13-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-09 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 9:40:00 AM |
| CLIENT SAMPLE ID | MW-13-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **130** | 26 | 100 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **2.8** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **105** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **96.4** | 11/08/2017 | DLC |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-10 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 2:20:00 PM |
| CLIENT SAMPLE ID | MW-14-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | **4.0** | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **5.1** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-10 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 2:20:00 PM |
| CLIENT SAMPLE ID | MW-14-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | **3.5** | 0.050 | 5 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | **6.0** | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **54** | 2.6 | 10 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **9.9** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **105** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **98.9** | 11/08/2017 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-11 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 1:31:00 PM |
| CLIENT SAMPLE ID | MW-19-20171107 | 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 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | **2.2** | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |



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ALS Group USA, Corp dba ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 11/20/2017<br>EV17110052<br>EV17110052-11 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 11/08/2017 |
| CLIENT PROJECT: | B&K - Baseline | COLLECTION DATE: | 11/7/2017 1:31:00 PM |
| CLIENT SAMPLE ID | MW-19-20171107 | 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 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 11/08/2017 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 11/08/2017 | CCN |
| Nitrate | EPA-300.0 | **17** | 0.15 | 1 | MG/L | 11/08/2017 | PAB |
| Sulfate | EPA-300.0 | **220** | 26 | 100 | MG/L | 11/13/2017 | PAB |
| Total Organic Carbon (TOC) | SM5310C | **1.5** | 1.0 | 1 | MG/L | 11/16/2017 | ALFT |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **100** | 11/08/2017 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **96.9** | 11/08/2017 | DLC |

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



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ALS Environmental

## CERTIFICATE OF ANALYSIS

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

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K - Baseline

DATE: 11/20/2017
ALS SDG#: EV17110052
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-110817W - Batch 122050 - Water by EPA-8260

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Chloromethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Vinyl Chloride | EPA-8260 | U | UG/L | 0.20 | 11/08/2017 | DLC |
| Bromomethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Chloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Methylene Chloride | EPA-8260 | U | UG/L | 5.0 | 11/08/2017 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Bromochloromethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Chloroform | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Trichloroethene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Dibromomethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Bromodichloromethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Toluene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Tetrachloroethylene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Dibromochloromethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | UG/L | 0.010 | 11/08/2017 | DLC |
| Chlorobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Bromoform | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Bromobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |



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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020
CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K - Baseline

DATE: 11/20/2017
ALS SDG#: EV17110052
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-110817W - Batch 122050 - Water by EPA-8260

| | | | | | | |
|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | UG/L | 10 | 11/08/2017 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 11/08/2017 | DLC |

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

### MBLK-R305130 - Batch R305130 - Water by RSK-175

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Methane | RSK-175 | U | MG/L | 0.010 | 11/08/2017 | CCN |
| Ethane | RSK-175 | U | MG/L | 0.010 | 11/08/2017 | CCN |
| Ethene | RSK-175 | U | MG/L | 0.010 | 11/08/2017 | CCN |
| Acetylene | RSK-175 | U | MG/L | 0.010 | 11/08/2017 | CCN |

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

### MBLK-305536 - Batch R305536 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Sulfate | EPA-300.0 | U | MG/L | 0.26 | 11/13/2017 | PAB |

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

### MBLK-305537 - Batch R305537 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Nitrate | EPA-300.0 | U | MG/L | 0.15 | 11/08/2017 | PAB |

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

### MBLK-305745 - Batch R305745 - Water by SM5310C

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Total Organic Carbon (TOC) | SM5310C | U | MG/L | 1.0 | 11/16/2017 | ALFT |

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



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS SDG#:<br>WDOE ACCREDITATION: | 11/20/2017<br>EV17110052<br>C601 |
| CLIENT CONTACT: | Cody Johnson | | |
| CLIENT PROJECT: | B&K - Baseline | | |

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: 122050 - Water by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene - BS | EPA-8260 | **121** | | | 72.5 | 136 | 11/08/2017 | DLC |
| 1,1-Dichloroethene - BSD | EPA-8260 | **116** | **4** | | 72.5 | 136 | 11/08/2017 | DLC |
| Trichloroethene - BS | EPA-8260 | **119** | | | 74.4 | 141 | 11/08/2017 | DLC |
| Trichloroethene - BSD | EPA-8260 | **115** | **4** | | 74.4 | 141 | 11/08/2017 | DLC |
| Toluene - BS | EPA-8260 | **120** | | | 71.7 | 139 | 11/08/2017 | DLC |
| Toluene - BSD | EPA-8260 | **115** | **4** | | 71.7 | 139 | 11/08/2017 | DLC |
| Chlorobenzene - BS | EPA-8260 | **117** | | | 73 | 131 | 11/08/2017 | DLC |
| Chlorobenzene - BSD | EPA-8260 | **112** | **4** | | 73 | 131 | 11/08/2017 | DLC |

### ALS Test Batch ID: R305130 - Water by RSK-175

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Methane - BS | RSK-175 | **92.0** | | | 80 | 120 | 11/08/2017 | CCN |
| Methane - BSD | RSK-175 | **95.3** | **4** | | 80 | 120 | 11/08/2017 | CCN |
| Ethane - BS | RSK-175 | **92.2** | | | 80 | 120 | 11/08/2017 | CCN |
| Ethane - BSD | RSK-175 | **95.8** | **4** | | 80 | 120 | 11/08/2017 | CCN |
| Ethene - BS | RSK-175 | **96.5** | | | 80 | 120 | 11/08/2017 | CCN |
| Ethene - BSD | RSK-175 | **101** | **5** | | 80 | 120 | 11/08/2017 | CCN |
| Acetylene - BS | RSK-175 | **87.9** | | | 80 | 120 | 11/08/2017 | CCN |
| Acetylene - BSD | RSK-175 | **91.0** | **3** | | 80 | 120 | 11/08/2017 | CCN |

### ALS Test Batch ID: R305536 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Sulfate - BS | EPA-300.0 | **95.5** | | | 80 | 120 | 11/13/2017 | PAB |
| Sulfate - BSD | EPA-300.0 | **96.5** | **1** | | 80 | 120 | 11/13/2017 | PAB |

### ALS Test Batch ID: R305537 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Nitrate - BS | EPA-300.0 | **106** | | | 80 | 120 | 11/08/2017 | PAB |
| Nitrate - BSD | EPA-300.0 | **108** | **2** | | 80 | 120 | 11/08/2017 | PAB |

### ALS Test Batch ID: R305745 - Water by SM5310C

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (TOC) - BS | SM5310C | **101** | | | 85 | 115 | 11/16/2017 | ALFT |



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CERTIFICATE OF ANALYSIS

APPROVED BY

Laboratory Director



ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
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# ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau Associates ALS Job #: EV1711052

Project: B+K - Baseline

Received Date: 11/8/17 Received Time: 10:30 By: SR

Type of shipping container: Cooler X Box ___ Other ___

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

| | 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: 2.9°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): EV1711052

Date 11/8/17 Page 1 Of 2

PROJECT ID: B+K - Baseline
REPORT TO COMPANY: LAT
PROJECT MANAGER: Cal Johnson
ADDRESS: 150 2nd Ave
Edmond, WA
PHONE: 425-329-0323 P.O. #: 1645.001.010.016
E-MAIL: cjohnson@landau-inc.com
INVOICE TO COMPANY:
ATTENTION:
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): TOC | N. Iron / Sulfide | Acetone, Methanol, ethanol | | | | | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. TripBlank-20171107 | — | — | Aq | 1 | | | | | | X | | | | | | | | | | | | X | | | | | 2 | |
| 2. MW-6-20171107 | 11/7/17 | 1210 | | 2 | | | | | | X | | | | | | | | | | X | X | X | | | | | | |
| 3. MW-7-20171107 | | 1315 | | 3 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 4. MW-8-20171107 | | 1237 | | 4 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 5. MW-9-20171107 | | 1151 | | 5 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 6. MW-10-20171107 | | 1112 | | 6 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 7. MW-11-20171107 | | 1020 | | 7 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 8. MW-12-20171107 | | 1025 | | 8 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 9. MW-13-20171107 | | 940 | | 9 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 10. MW-14-20171107 | | 1420 | | 10 | | | | | | X | | | | | | | | | | | | | | | | | | |

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: LAT, 11/8/17, 915
   Received By: ALS 11/8/17 9:40
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**
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): EV1711 0052

Date 11/8/17 Page 2 Of 2

PROJECT ID: BHC - Bowlin
REPORT TO COMPANY: LAI
PROJECT MANAGER:
ADDRESS: Sea PS 4
PHONE: P.O. #: 164501.010.016
E-MAIL:
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED

OTHER (Specify)

| 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 ☐ | TPH | Nitrate/Sulfate | Acetone, Methylene chloride, ethanol | | | | | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. MW-19-20171107 | 11/7/17 | 1331 | Ag | 11 | | | | | | X | | | | | | | | | X | X | X | | | | | 7 | |
| 2. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: LAI, 11/8/17, 915
   Received By: ALS 11/8/17 9:40
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

April 9, 2018

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

Dear Mr. Johnson,

On March 23rd, 12 samples were received by our laboratory and assigned our laboratory project number EV18030152. The project was identified as your Beckwith & Kuffel - 1645001.010.020. 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

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-01 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 8:00:00 AM |
| CLIENT SAMPLE ID | DUP1-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | **0.50** | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | **130** | 20 | 10 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | **930** | 400 | 200 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **0.69** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **110** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **3.4** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **109** | 04/02/2018 | CCN |
| 1,2-Dichloroethane-d4 200X Dilution | EPA-8260 | **121** | 04/03/2018 | CCN |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **120** | 04/03/2018 | CCN |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-02 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 9:55:00 AM |
| CLIENT SAMPLE ID | MW-6-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/03/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | **21** | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **0.50** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **31** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **4.0** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **119** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-03 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 10:44:00 AM |
| CLIENT SAMPLE ID | MW-10-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **49** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **5.0** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **110** | 04/02/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-04 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 11:25:00 AM |
| CLIENT SAMPLE ID | MW-9-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | **17** | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Trichloroethene | EPA-8260 | **12** | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Methane | RSK-175 | **0.12** | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **45** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **6.4** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **109** | 04/02/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-05 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 12:11:00 PM |
| CLIENT SAMPLE ID | MW-12-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | **16** | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Trichloroethene | EPA-8260 | **78** | 20 | 10 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **1.1** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **48** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **4.1** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **110** | 04/02/2018 | CCN |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **122** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-06 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 12:33:00 PM |
| CLIENT SAMPLE ID | MW-7-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | **15** | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | **74** | 20 | 10 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | **24** | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Methane | RSK-175 | **1.7** | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **1.4** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **18** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **10000** | 250 | 500 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **109** | 04/02/2018 | CCN |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **121** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-07 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 1:01:00 PM |
| CLIENT SAMPLE ID | MW-11-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | **0.47** | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | **140** | 20 | 10 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | **930** | 400 | 200 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **0.70** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **110** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **3.2** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **107** | 04/02/2018 | CCN |
| 1,2-Dichloroethane-d4 200X Dilution | EPA-8260 | **121** | 04/03/2018 | CCN |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **121** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-08 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 1:40:00 PM |
| CLIENT SAMPLE ID | SM-MW-8-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/03/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | **6.6** | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | **39** | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **1.9** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **130** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **2.4** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **121** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-09 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 2:51:00 PM |
| CLIENT SAMPLE ID | SM-MW-18-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/03/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | **2.4** | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **12** | 1.5 | 10 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **330** | 2.6 | 10 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **1.6** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **122** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-10 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 3:01:00 PM |
| CLIENT SAMPLE ID | SM-MW-19-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/03/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/03/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | **12** | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **160** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **1.9** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **121** | 04/03/2018 | CCN |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-11 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 2:01:00 PM |
| CLIENT SAMPLE ID | MW-13-180322 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 03/29/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | **93** | 0.26 | 1 | MG/L | 03/23/2018 | GAP |
| Total Organic Carbon (TOC) | SM5310C | **3.6** | 0.50 | 1 | MG/L | 03/29/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **111** | 04/02/2018 | CCN |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 4/9/2018<br>EV18030152<br>EV18030152-12 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 03/23/2018 |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | COLLECTION DATE: | 3/22/2018 |
| CLIENT SAMPLE ID | Trip Blanks | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/02/2018 | CCN |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 04/02/2018 | CCN |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **112** | 04/02/2018 | CCN |

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



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ALS Environmental

## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS SDG#:<br>WDOE ACCREDITATION: | 4/9/2018<br>EV18030152<br>C601 |
| CLIENT CONTACT: | Cody Johnson | | |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | | |

## LABORATORY BLANK RESULTS

### MB-040218W - Batch 126925 - Water by EPA-8260

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Vinyl Chloride | EPA-8260 | U | UG/L | 0.20 | 04/02/2018 | CCN |
| 1,1-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 04/02/2018 | CCN |
| Trichloroethene | EPA-8260 | U | UG/L | 2.0 | 04/02/2018 | CCN |
| Toluene | EPA-8260 | U | UG/L | 2.0 | 04/02/2018 | CCN |

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

### MBLK-R313356 - Batch R313356 - Water by RSK-175

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Methane | RSK-175 | U | MG/L | 0.010 | 03/29/2018 | CCN |
| Ethane | RSK-175 | U | MG/L | 0.010 | 03/29/2018 | CCN |
| Ethene | RSK-175 | U | MG/L | 0.010 | 03/29/2018 | CCN |
| Acetylene | RSK-175 | U | MG/L | 0.010 | 03/29/2018 | CCN |

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

### MBLK-R313345 - Batch R313345 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Nitrate | EPA-300.0 | U | MG/L | 0.15 | 03/23/2018 | GAP |
| Sulfate | EPA-300.0 | U | MG/L | 0.26 | 03/23/2018 | GAP |

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

### MBLK-313970 - Batch R313970 - Water by SM5310C

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Total Organic Carbon (TOC) | SM5310C | U | MG/L | 0.50 | 03/29/2018 | CAS |

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



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS SDG#:<br>WDOE ACCREDITATION: | 4/9/2018<br>EV18030152<br>C601 |
| CLIENT CONTACT: | Cody Johnson | | |
| CLIENT PROJECT: | Beckwith & Kuffel - 1645001.010.020 | | |

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: 126925 - Water by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride - BS | EPA-8260 | **88.1** | | | 50 | 150 | 04/02/2018 | CCN |
| Vinyl Chloride - BSD | EPA-8260 | **104** | **17** | | 50 | 150 | 04/02/2018 | CCN |
| 1,1-Dichloroethene - BS | EPA-8260 | **81.0** | | | 72.5 | 136 | 04/02/2018 | CCN |
| 1,1-Dichloroethene - BSD | EPA-8260 | **93.9** | **15** | | 72.5 | 136 | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene - BS | EPA-8260 | **91.6** | | | 50 | 150 | 04/02/2018 | CCN |
| Cis-1,2-Dichloroethene - BSD | EPA-8260 | **106** | **14** | | 50 | 150 | 04/02/2018 | CCN |
| Trichloroethene - BS | EPA-8260 | **95.7** | | | 74.4 | 141 | 04/02/2018 | CCN |
| Trichloroethene - BSD | EPA-8260 | **108** | **12** | | 74.4 | 141 | 04/02/2018 | CCN |
| Toluene - BS | EPA-8260 | **92.4** | | | 71.7 | 139 | 04/02/2018 | CCN |
| Toluene - BSD | EPA-8260 | **103** | **11** | | 71.7 | 139 | 04/02/2018 | CCN |

### ALS Test Batch ID: R313356 - Water by RSK-175

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Methane - BS | RSK-175 | **93.8** | | | 80 | 120 | 03/29/2018 | CCN |
| Methane - BSD | RSK-175 | **95.6** | **2** | | 80 | 120 | 03/29/2018 | CCN |
| Ethane - BS | RSK-175 | **97.9** | | | 80 | 120 | 03/29/2018 | CCN |
| Ethane - BSD | RSK-175 | **97.6** | **0** | | 80 | 120 | 03/29/2018 | CCN |
| Ethene - BS | RSK-175 | **94.4** | | | 80 | 120 | 03/29/2018 | CCN |
| Ethene - BSD | RSK-175 | **96.4** | **2** | | 80 | 120 | 03/29/2018 | CCN |
| Acetylene - BS | RSK-175 | **90.6** | | | 80 | 120 | 03/29/2018 | CCN |
| Acetylene - BSD | RSK-175 | **94.8** | **5** | | 80 | 120 | 03/29/2018 | CCN |

### ALS Test Batch ID: R313345 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Nitrate - BS | EPA-300.0 | **93.5** | | | 80 | 120 | 03/23/2018 | GAP |
| Nitrate - BSD | EPA-300.0 | **95.0** | **2** | | 80 | 120 | 03/23/2018 | GAP |
| Sulfate - BS | EPA-300.0 | **104** | | | 80 | 120 | 03/23/2018 | GAP |
| Sulfate - BSD | EPA-300.0 | **108** | **4** | | 80 | 120 | 03/23/2018 | GAP |

### ALS Test Batch ID: R313970 - Water by SM5310C

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (TOC) - BS | SM5310C | **102** | | | 83 | 117 | 03/29/2018 | CAS |



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CERTIFICATE OF ANALYSIS

APPROVED BY

Laboratory Director



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# ALS ENVIRONMENTAL

Sample Receiving Checklist

Client: Landau ALS Job #: EV1803015 2

Project: Beckwith + Kuffel # 1645001.010.020

Received Date: 3/23/18 Received Time: 11:10 AM By: RB

Type of shipping container: Cooler X Box ____ Other ____

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

| | Yes | No | N/A |
|---|---|---|---|
| Were custody seals on outside of shipping container? | X | | |
| If yes, how many? 1 Where? outside cooler | | | |
| Custody seal date: 3/23/18 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 #: ____ | | | |

Temperature of cooler upon receipt: 4.4°C Cold Cool Ambient N/A

On Ice

Explain any discrepancies: ____

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

Outcome of call: ____

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 3/22/18

Page 1 of 1

EV1803015 2

Project Name Beckwith & Kuffel Project No. 164500l.010.020

Project Location/Event Seattle, WA / March 2018

Sampler's Name Jeovani Huerta & Katie Gaughitz

Project Contact Cody Johnson

Send Results To Cody Johnson & Danille Jorgensen

Testing Parameters

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

| | Sample I.D. | Date | Time | Matrix | No. of Containers | ICE, VOC (8260) | TOC (SM5310) | Nitrate/Sulfate (300.0) | Ammonia (125K-175) | Observations/Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dup1-180322 | 3/22/18 | 800 | AQ | 7 | X | X | X | X | |
| 2 | MW-6-180322 | 3/22/18 | 955 | AQ | 7 | X | X | X | X | |
| 3 | MW-10-180322 | 3/22/18 | 1044 | AQ | 7 | X | X | X | X | |
| 4 | MW-9-180322 | 3/22/18 | 1125 | AQ | 7 | X | X | X | X | |
| 5 | MW-12-180322 | 3/22/18 | 1211 | AQ | 7 | X | X | X | X | |
| 6 | MW-7-180322 | 3/22/18 | 1233 | AQ | 7 | X | X | X | X | |
| 7 | MW-11-180322 | 3/22/18 | 1301 | AQ | 7 | X | X | X | X | |
| 8 | SM-MW-8-180322 | 3/22/18 | 1340 | AQ | 7 | X | X | X | X | |
| 9 | SM-MW-16-180322 | 3/22/18 | 1451 | AQ | 7 | X | X | X | X | |
| 10 | SM-MW-19-180322 | 3/22/18 | 1501 | AQ | 7 | X | X | X | X | |
| 11 | MW-13-180322 | 3/22/18 | 1401 | AQ | 7 | X | X | X | X | |
| 12 | Trip blanks | — | — | AQ | 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
- [X] 45-hr hold time on nitrate
- [ ] Acetylene, methane, ethene, ethane

Special Shipment/Handling or Storage Requirements On ice

Method of Shipment Lab Pick up

| Relinquished by | Received by | Relinquished by | Received by |
|---|---|---|---|
| Signature | Signature | Signature | Signature |
| Printed Name Jeovani Huerta | Printed Name ALS Rick Bagan | Printed Name | Printed Name |
| Company Landau Associates | Company ALS | Company | Company |
| Date 3/22/18 Time 1745 | Date 3/23/18 Time 11:10 | Date Time | Date Time |

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

12/2014

July 24, 2018

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

Dear Mr. Johnson,

On July 3rd, 15 samples were received by our laboratory and assigned our laboratory project number EV18070011. 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



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ALS Group USA, Corp dba ALS Environmental

ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-01 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:50:00 AM |
| CLIENT SAMPLE ID | MW-6-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **11** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-01 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:50:00 AM |
| CLIENT SAMPLE ID | MW-6-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **0.26** | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **35** | 13 | 50 | MG/L | 07/06/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **3.2** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **104** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **107** | 07/05/2018 | DLC |

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



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ALS Environmental

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| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-02 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 10:00:00 AM |
| CLIENT SAMPLE ID | MW-7-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **8.2** | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | **2.1** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **56** | 20 | 10 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | **3.5** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **16** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-02 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 10:00:00 AM |
| CLIENT SAMPLE ID | MW-7-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | **2.0** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **20** | 5.2 | 20 | MG/L | 07/06/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **180** | 2.0 | 4 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **102** | 07/05/2018 | DLC |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **103** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **101** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene 10X Dilution | EPA-8260 | **102** | 07/05/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-03 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 10:35:00 AM |
| CLIENT SAMPLE ID | MW-9-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **0.24** | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **11** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **34** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-03 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 10:35:00 AM |
| CLIENT SAMPLE ID | MW-9-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | **0.070** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **42** | 13 | 50 | MG/L | 07/06/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **2.0** | 0.50 | 1 | MG/L | 07/18/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **108** | 07/05/2018 | DLC |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-04 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:05:00 AM |
| CLIENT SAMPLE ID | MW-10-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-04 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:05:00 AM |
| CLIENT SAMPLE ID | MW-10-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | **0.020** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **65** | 26 | 100 | MG/L | 07/06/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **5.4** | 0.50 | 1 | MG/L | 07/18/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **104** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **106** | 07/05/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-05 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/3/2018 9:30:00 AM |
| CLIENT SAMPLE ID | MW-11-070318 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **0.57** | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | **2.7** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | **4.0** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **160** | 40 | 20 | UG/L | 07/06/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **760** | 40 | 20 | UG/L | 07/06/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-05 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/3/2018 9:30:00 AM |
| CLIENT SAMPLE ID | MW-11-070318 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | **0.050** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **0.87** | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **84** | 52 | 200 | MG/L | 07/06/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **3.1** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **102** | 07/05/2018 | DLC |
| 1,2-Dichloroethane-d4 20X Dilution | EPA-8260 | **104** | 07/06/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **106** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene 20X Dilution | EPA-8260 | **106** | 07/06/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-06 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:45:00 AM |
| CLIENT SAMPLE ID | MW-12-070318 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **17** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **62** | 20 | 10 | UG/L | 07/06/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-06 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:45:00 AM |
| CLIENT SAMPLE ID | MW-12-070318 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **1.1** | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **51** | 26 | 100 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **3.8** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 07/05/2018 | DLC |
| 1,2-Dichloroethane-d4 10X Dilution | EPA-8260 | **104** | 07/06/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **105** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene 10X Dilution | EPA-8260 | **106** | 07/06/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-07 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:00:00 AM |
| CLIENT SAMPLE ID | MW-13-070318 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-07 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 8:00:00 AM |
| CLIENT SAMPLE ID | MW-13-070318 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | **0.020** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **120** | 52 | 200 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **4.3** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **105** | 07/05/2018 | DLC |

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-08 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 3:55:00 PM |
| CLIENT SAMPLE ID | SM-MW-17A-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **6.8** | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **4.8** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-08 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 3:55:00 PM |
| CLIENT SAMPLE ID | SM-MW-17A-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | **0.90** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/03/2018 | JMJ |
| Sulfate | EPA-300.0 | **13** | 5.2 | 20 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **3.0** | 0.50 | 1 | MG/L | 07/19/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **104** | 07/05/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-09 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 2:35:00 PM |
| CLIENT SAMPLE ID | SM-MW-14-070218 | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | **3.1** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-09 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 2:35:00 PM |
| CLIENT SAMPLE ID | SM-MW-14-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/04/2018 | JMJ |
| Sulfate | EPA-300.0 | **65** | 26 | 100 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **2.2** | 0.50 | 1 | MG/L | 07/19/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **104** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **107** | 07/05/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-10 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 4:15:00 PM |
| CLIENT SAMPLE ID | SM-MW-8-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | **2.1** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **6.8** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **27** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-10 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 4:15:00 PM |
| CLIENT SAMPLE ID | SM-MW-8-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **1.5** | 0.15 | 1 | MG/L | 07/04/2018 | JMJ |
| Sulfate | EPA-300.0 | **120** | 52 | 200 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **1.6** | 0.50 | 1 | MG/L | 07/19/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **102** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **105** | 07/05/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-11 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 12:30:00 PM |
| CLIENT SAMPLE ID | SM-MW-18-070218 | 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 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | **9.3** | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-11 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 12:30:00 PM |
| CLIENT SAMPLE ID | SM-MW-18-070218 | 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 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/05/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **9.1** | 0.15 | 1 | MG/L | 07/04/2018 | JMJ |
| Sulfate | EPA-300.0 | **360** | 130 | 500 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **1.8** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **105** | 07/05/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **106** | 07/05/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-12 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 11:30:00 AM |
| CLIENT SAMPLE ID | SM-MW-19-070218 | 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 | 07/06/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/06/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/06/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-12 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 11:30:00 AM |
| CLIENT SAMPLE ID | SM-MW-19-070218 | 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 | 07/06/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **18** | 0.15 | 1 | MG/L | 07/04/2018 | JMJ |
| Sulfate | EPA-300.0 | **180** | 52 | 200 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **6.1** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **105** | 07/06/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **107** | 07/06/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-13 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 1:35:00 PM |
| CLIENT SAMPLE ID | SM-MW-21-070218 | 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 | 07/06/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **8.3** | 0.20 | 1 | UG/L | 07/06/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | **2.6** | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **50** | 40 | 20 | UG/L | 07/09/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | **6.3** | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trichloroethene | EPA-8260 | **440** | 40 | 20 | UG/L | 07/09/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/06/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-13 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 1:35:00 PM |
| CLIENT SAMPLE ID | SM-MW-21-070218 | 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 | 07/06/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Methane | RSK-175 | **0.070** | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | **0.19** | 0.15 | 1 | MG/L | 07/04/2018 | JMJ |
| Sulfate | EPA-300.0 | **65** | 2.6 | 10 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **2.6** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **103** | 07/06/2018 | DLC |
| 1,2-Dichloroethane-d4 20X Dilution | EPA-8260 | **107** | 07/09/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **107** | 07/06/2018 | DLC |
| 4-Bromofluorobenzene 20X Dilution | EPA-8260 | **106** | 07/09/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-14 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 7:00:00 PM |
| CLIENT SAMPLE ID | DUP-070218 | 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 | 07/06/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Vinyl Chloride | EPA-8260 | **0.54** | 0.20 | 1 | UG/L | 07/06/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | **2.7** | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | **3.9** | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | **160** | 40 | 20 | UG/L | 07/09/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trichloroethene | EPA-8260 | **790** | 40 | 20 | UG/L | 07/09/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/06/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-14 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 7:00:00 PM |
| CLIENT SAMPLE ID | DUP-070218 | 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 | 07/06/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/06/2018 | DLC |
| Methane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | 0.010 | 1 | MG/L | 07/05/2018 | CCN |
| Nitrate | EPA-300.0 | U | 0.15 | 1 | MG/L | 07/04/2018 | JMJ |
| Sulfate | EPA-300.0 | **110** | 2.6 | 10 | MG/L | 07/16/2018 | JMJ |
| Total Organic Carbon (TOC) | SM5310C | **2.8** | 0.50 | 1 | MG/L | 07/13/2018 | CAS |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **105** | 07/06/2018 | DLC |
| 1,2-Dichloroethane-d4 20X Dilution | EPA-8260 | **107** | 07/09/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **103** | 07/06/2018 | DLC |
| 4-Bromofluorobenzene 20X Dilution | EPA-8260 | **105** | 07/09/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-15 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 |
| CLIENT SAMPLE ID | Trip Blanks | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Chloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | 0.20 | 1 | UG/L | 07/09/2018 | DLC |
| Bromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Chloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | 5.0 | 1 | UG/L | 07/09/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Chloroform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Trichloroethene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Dibromomethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | 0.010 | 1 | UG/L | 07/09/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Bromoform | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Bromobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS JOB#:<br>ALS SAMPLE#: | 7/24/2018<br>EV18070011<br>EV18070011-15 |
| CLIENT CONTACT: | Cody Johnson | DATE RECEIVED: | 07/03/2018 |
| CLIENT PROJECT: | B&K | COLLECTION DATE: | 7/2/2018 |
| CLIENT SAMPLE ID | Trip Blanks | WDOE ACCREDITATION: | C601 |

## SAMPLE DATA RESULTS

| ANALYTE | METHOD | RESULTS | REPORTING LIMITS | DILUTION FACTOR | UNITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | 10 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | 2.0 | 1 | UG/L | 07/09/2018 | DLC |

| SURROGATE | METHOD | %REC | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|
| 1,2-Dichloroethane-d4 | EPA-8260 | **108** | 07/09/2018 | DLC |
| 4-Bromofluorobenzene | EPA-8260 | **105** | 07/09/2018 | DLC |

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## CERTIFICATE OF ANALYSIS

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

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-070518W - Batch 130214 - Water by EPA-8260

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Chloromethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | UG/L | 0.20 | 07/05/2018 | DLC |
| Bromomethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Chloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | UG/L | 5.0 | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Chloroform | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Trichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Dibromomethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Toluene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | UG/L | 0.010 | 07/05/2018 | DLC |
| Chlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Bromoform | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Bromobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

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

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

## LABORATORY BLANK RESULTS

### MB-070518W - Batch 130214 - Water by EPA-8260

| | | | | | | |
|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | UG/L | 10 | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/05/2018 | DLC |

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

### MB-070618W - Batch 130211 - Water by EPA-8260

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Dichlorodifluoromethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Chloromethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Vinyl Chloride | EPA-8260 | U | UG/L | 0.20 | 07/06/2018 | DLC |
| Bromomethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Chloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Carbon Tetrachloride | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Trichlorofluoromethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Methylene Chloride | EPA-8260 | U | UG/L | 5.0 | 07/06/2018 | DLC |
| Trans-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Cis-1,2-Dichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 2,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Bromochloromethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Chloroform | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1,1-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2-Dichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Trichloroethene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Dibromomethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Bromodichloromethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Trans-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Toluene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Cis-1,3-Dichloropropene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1,2-Trichloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,3-Dichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Tetrachloroethylene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Dibromochloromethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2-Dibromoethane | EPA-8260 | U | UG/L | 0.010 | 07/06/2018 | DLC |



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## CERTIFICATE OF ANALYSIS

CLIENT: Landau Associates, Inc.
130 - 2nd Ave. S.
Edmonds, WA 98020
CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

## LABORATORY BLANK RESULTS

### MB-070618W - Batch 130211 - Water by EPA-8260

| | | | | | | |
|---|---|---|---|---|---|---|
| Chlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1,1,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Bromoform | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,1,2,2-Tetrachloroethane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2,3-Trichloropropane | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Bromobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 2-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 4-Chlorotoluene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,3-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,4-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2-Dichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane | EPA-8260 | U | UG/L | 10 | 07/06/2018 | DLC |
| 1,2,4-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| Hexachlorobutadiene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |
| 1,2,3-Trichlorobenzene | EPA-8260 | U | UG/L | 2.0 | 07/06/2018 | DLC |

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

### MBLK-R319215 - Batch R319215 - Water by RSK-175

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Methane | RSK-175 | U | MG/L | 0.010 | 07/05/2018 | CCN |
| Ethane | RSK-175 | U | MG/L | 0.010 | 07/05/2018 | CCN |
| Ethene | RSK-175 | U | MG/L | 0.010 | 07/05/2018 | CCN |
| Acetylene | RSK-175 | U | MG/L | 0.010 | 07/05/2018 | CCN |

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

### MBLK-319465 - Batch R319465 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Nitrate | EPA-300.0 | U | MG/L | 0.15 | 07/04/2018 | JMJ |

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

### MBLK-R319916 - Batch R319916 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Nitrate | EPA-300.0 | U | MG/L | 0.15 | 07/03/2018 | JMJ |

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



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ALS Group USA, Corp dba ALS Environmental

## CERTIFICATE OF ANALYSIS

| | | | |
|---|---|---|---|
| CLIENT: | Landau Associates, Inc.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE: | 7/24/2018 |
| | | ALS SDG#: | EV18070011 |
| | | WDOE ACCREDITATION: | C601 |
| CLIENT CONTACT: | Cody Johnson | | |
| CLIENT PROJECT: | B&K | | |

## LABORATORY BLANK RESULTS

### MBLK-R319919 - Batch R319919 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Sulfate | EPA-300.0 | U | MG/L | 0.26 | 07/06/2018 | JMJ |

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

### MBLK-R319921 - Batch R319921 - Water by EPA-300.0

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Sulfate | EPA-300.0 | U | MG/L | 0.26 | 07/16/2018 | JMJ |

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

### MBLK-320351 - Batch R320351 - Water by SM5310C

| ANALYTE | METHOD | RESULTS | UNITS | REPORTING LIMITS | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|
| Total Organic Carbon (TOC) | SM5310C | U | MG/L | 0.50 | 07/12/2018 | CAS |

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



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130 - 2nd Ave. S.
Edmonds, WA 98020

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: 130211 - Water by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane - BS | EPA-8260 | **83.9** | | | 50 | 150 | 07/06/2018 | DLC |
| Dichlorodifluoromethane - BSD | EPA-8260 | **88.9** | **6** | | 50 | 150 | 07/06/2018 | DLC |
| Chloromethane - BS | EPA-8260 | **102** | | | 50 | 150 | 07/06/2018 | DLC |
| Chloromethane - BSD | EPA-8260 | **113** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| Vinyl Chloride - BS | EPA-8260 | **86.4** | | | 50 | 150 | 07/06/2018 | DLC |
| Vinyl Chloride - BSD | EPA-8260 | **95.2** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| Bromomethane - BS | EPA-8260 | **138** | | | 50 | 150 | 07/06/2018 | DLC |
| Bromomethane - BSD | EPA-8260 | **153** | **10** | SQ1 | 50 | 150 | 07/06/2018 | DLC |
| Chloroethane - BS | EPA-8260 | **86.0** | | | 50 | 150 | 07/06/2018 | DLC |
| Chloroethane - BSD | EPA-8260 | **94.8** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| Carbon Tetrachloride - BS | EPA-8260 | **85.9** | | | 50 | 150 | 07/06/2018 | DLC |
| Carbon Tetrachloride - BSD | EPA-8260 | **94.2** | **9** | | 50 | 150 | 07/06/2018 | DLC |
| Trichlorofluoromethane - BS | EPA-8260 | **83.9** | | | 50 | 150 | 07/06/2018 | DLC |
| Trichlorofluoromethane - BSD | EPA-8260 | **90.0** | **7** | | 50 | 150 | 07/06/2018 | DLC |
| 1,1-Dichloroethene - BS | EPA-8260 | **80.1** | | | 72.5 | 136 | 07/06/2018 | DLC |
| 1,1-Dichloroethene - BSD | EPA-8260 | **87.9** | **9** | | 72.5 | 136 | 07/06/2018 | DLC |
| Methylene Chloride - BS | EPA-8260 | **76.4** | | | 50 | 150 | 07/06/2018 | DLC |
| Methylene Chloride - BSD | EPA-8260 | **93.5** | **20** | | 50 | 150 | 07/06/2018 | DLC |
| Trans-1,2-Dichloroethene - BS | EPA-8260 | **89.7** | | | 50 | 150 | 07/06/2018 | DLC |
| Trans-1,2-Dichloroethene - BSD | EPA-8260 | **99.3** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| 1,1-Dichloroethane - BS | EPA-8260 | **90.7** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,1-Dichloroethane - BSD | EPA-8260 | **101** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| Cis-1,2-Dichloroethene - BS | EPA-8260 | **86.2** | | | 50 | 150 | 07/06/2018 | DLC |
| Cis-1,2-Dichloroethene - BSD | EPA-8260 | **96.3** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| 2,2-Dichloropropane - BS | EPA-8260 | **117** | | | 50 | 150 | 07/06/2018 | DLC |
| 2,2-Dichloropropane - BSD | EPA-8260 | **126** | **8** | | 50 | 150 | 07/06/2018 | DLC |
| Bromochloromethane - BS | EPA-8260 | **98.5** | | | 50 | 150 | 07/06/2018 | DLC |
| Bromochloromethane - BSD | EPA-8260 | **111** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| Chloroform - BS | EPA-8260 | **89.5** | | | 50 | 150 | 07/06/2018 | DLC |
| Chloroform - BSD | EPA-8260 | **100** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,1-Trichloroethane - BS | EPA-8260 | **83.7** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,1-Trichloroethane - BSD | EPA-8260 | **92.8** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| 1,1-Dichloropropene - BS | EPA-8260 | **88.0** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,1-Dichloropropene - BSD | EPA-8260 | **96.6** | **9** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dichloroethane - BS | EPA-8260 | **96.1** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dichloroethane - BSD | EPA-8260 | **107** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| Trichloroethene - BS | EPA-8260 | **80.8** | | | 74.4 | 141 | 07/06/2018 | DLC |
| Trichloroethene - BSD | EPA-8260 | **88.9** | **9** | | 74.4 | 141 | 07/06/2018 | DLC |
| 1,2-Dichloropropane - BS | EPA-8260 | **87.5** | | | 50 | 150 | 07/06/2018 | DLC |



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CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloropropane - BSD | EPA-8260 | **97.0** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| Dibromomethane - BS | EPA-8260 | **88.3** | | | 50 | 150 | 07/06/2018 | DLC |
| Dibromomethane - BSD | EPA-8260 | **98.7** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| Bromodichloromethane - BS | EPA-8260 | **86.5** | | | 50 | 150 | 07/06/2018 | DLC |
| Bromodichloromethane - BSD | EPA-8260 | **96.3** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| Trans-1,3-Dichloropropene - BS | EPA-8260 | **84.4** | | | 50 | 150 | 07/06/2018 | DLC |
| Trans-1,3-Dichloropropene - BSD | EPA-8260 | **95.0** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| Toluene - BS | EPA-8260 | **85.1** | | | 71.7 | 139 | 07/06/2018 | DLC |
| Toluene - BSD | EPA-8260 | **93.8** | **10** | | 71.7 | 139 | 07/06/2018 | DLC |
| Cis-1,3-Dichloropropene - BS | EPA-8260 | **89.3** | | | 50 | 150 | 07/06/2018 | DLC |
| Cis-1,3-Dichloropropene - BSD | EPA-8260 | **99.4** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,2-Trichloroethane - BS | EPA-8260 | **82.9** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,2-Trichloroethane - BSD | EPA-8260 | **93.7** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| 1,3-Dichloropropane - BS | EPA-8260 | **81.3** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,3-Dichloropropane - BSD | EPA-8260 | **91.8** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| Tetrachloroethylene - BS | EPA-8260 | **74.7** | | | 50 | 150 | 07/06/2018 | DLC |
| Tetrachloroethylene - BSD | EPA-8260 | **82.3** | **10** | | 50 | 150 | 07/06/2018 | DLC |
| Dibromochloromethane - BS | EPA-8260 | **79.8** | | | 50 | 150 | 07/06/2018 | DLC |
| Dibromochloromethane - BSD | EPA-8260 | **90.1** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dibromoethane - BS | EPA-8260 | **79.5** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dibromoethane - BSD | EPA-8260 | **89.8** | **12** | | 50 | 150 | 07/06/2018 | DLC |
| Chlorobenzene - BS | EPA-8260 | **80.0** | | | 73 | 131 | 07/06/2018 | DLC |
| Chlorobenzene - BSD | EPA-8260 | **89.4** | **11** | | 73 | 131 | 07/06/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BS | EPA-8260 | **82.4** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BSD | EPA-8260 | **92.1** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| Bromoform - BS | EPA-8260 | **78.0** | | | 50 | 150 | 07/06/2018 | DLC |
| Bromoform - BSD | EPA-8260 | **88.7** | **13** | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BS | EPA-8260 | **86.9** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BSD | EPA-8260 | **101** | **15** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2,3-Trichloropropane - BS | EPA-8260 | **95.9** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2,3-Trichloropropane - BSD | EPA-8260 | **112** | **16** | | 50 | 150 | 07/06/2018 | DLC |
| Bromobenzene - BS | EPA-8260 | **83.7** | | | 50 | 150 | 07/06/2018 | DLC |
| Bromobenzene - BSD | EPA-8260 | **96.2** | **14** | | 50 | 150 | 07/06/2018 | DLC |
| 2-Chlorotoluene - BS | EPA-8260 | **85.8** | | | 50 | 150 | 07/06/2018 | DLC |
| 2-Chlorotoluene - BSD | EPA-8260 | **98.1** | **13** | | 50 | 150 | 07/06/2018 | DLC |
| 4-Chlorotoluene - BS | EPA-8260 | **86.7** | | | 50 | 150 | 07/06/2018 | DLC |
| 4-Chlorotoluene - BSD | EPA-8260 | **98.6** | **13** | | 50 | 150 | 07/06/2018 | DLC |
| 1,3-Dichlorobenzene - BS | EPA-8260 | **84.1** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,3-Dichlorobenzene - BSD | EPA-8260 | **96.7** | **14** | | 50 | 150 | 07/06/2018 | DLC |
| 1,4-Dichlorobenzene - BS | EPA-8260 | **84.4** | | | 50 | 150 | 07/06/2018 | DLC |



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CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene - BSD | EPA-8260 | **97.4** | **14** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dichlorobenzene - BS | EPA-8260 | **84.1** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dichlorobenzene - BSD | EPA-8260 | **97.3** | **15** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BS | EPA-8260 | **85.9** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BSD | EPA-8260 | **100** | **15** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2,4-Trichlorobenzene - BS | EPA-8260 | **86.3** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2,4-Trichlorobenzene - BSD | EPA-8260 | **98.7** | **13** | | 50 | 150 | 07/06/2018 | DLC |
| Hexachlorobutadiene - BS | EPA-8260 | **84.3** | | | 50 | 150 | 07/06/2018 | DLC |
| Hexachlorobutadiene - BSD | EPA-8260 | **94.1** | **11** | | 50 | 150 | 07/06/2018 | DLC |
| 1,2,3-Trichlorobenzene - BS | EPA-8260 | **86.3** | | | 50 | 150 | 07/06/2018 | DLC |
| 1,2,3-Trichlorobenzene - BSD | EPA-8260 | **98.7** | **13** | | 50 | 150 | 07/06/2018 | DLC |

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

### ALS Test Batch ID: 130214 - Water by EPA-8260

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Dichlorodifluoromethane - BS | EPA-8260 | **87.7** | | | 50 | 150 | 07/05/2018 | DLC |
| Dichlorodifluoromethane - BSD | EPA-8260 | **69.2** | **24** | | 50 | 150 | 07/05/2018 | DLC |
| Chloromethane - BS | EPA-8260 | **114** | | | 50 | 150 | 07/05/2018 | DLC |
| Chloromethane - BSD | EPA-8260 | **97.7** | **16** | | 50 | 150 | 07/05/2018 | DLC |
| Vinyl Chloride - BS | EPA-8260 | **98.0** | | | 50 | 150 | 07/05/2018 | DLC |
| Vinyl Chloride - BSD | EPA-8260 | **81.0** | **19** | | 50 | 150 | 07/05/2018 | DLC |
| Bromomethane - BS | EPA-8260 | **155** | | SQ1 | 50 | 150 | 07/05/2018 | DLC |
| Bromomethane - BSD | EPA-8260 | **134** | **15** | | 50 | 150 | 07/05/2018 | DLC |
| Chloroethane - BS | EPA-8260 | **94.5** | | | 50 | 150 | 07/05/2018 | DLC |
| Chloroethane - BSD | EPA-8260 | **82.1** | **14** | | 50 | 150 | 07/05/2018 | DLC |
| Carbon Tetrachloride - BS | EPA-8260 | **94.4** | | | 50 | 150 | 07/05/2018 | DLC |
| Carbon Tetrachloride - BSD | EPA-8260 | **79.9** | **17** | | 50 | 150 | 07/05/2018 | DLC |
| Trichlorofluoromethane - BS | EPA-8260 | **89.9** | | | 50 | 150 | 07/05/2018 | DLC |
| Trichlorofluoromethane - BSD | EPA-8260 | **72.1** | **22** | | 50 | 150 | 07/05/2018 | DLC |
| 1,1-Dichloroethene - BS | EPA-8260 | **86.2** | | | 72.5 | 136 | 07/05/2018 | DLC |
| 1,1-Dichloroethene - BSD | EPA-8260 | **74.1** | **15** | | 72.5 | 136 | 07/05/2018 | DLC |
| Methylene Chloride - BS | EPA-8260 | **68.1** | | | 50 | 150 | 07/05/2018 | DLC |
| Methylene Chloride - BSD | EPA-8260 | **56.1** | **19** | | 50 | 150 | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene - BS | EPA-8260 | **97.2** | | | 50 | 150 | 07/05/2018 | DLC |
| Trans-1,2-Dichloroethene - BSD | EPA-8260 | **85.8** | **12** | | 50 | 150 | 07/05/2018 | DLC |
| 1,1-Dichloroethane - BS | EPA-8260 | **97.7** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,1-Dichloroethane - BSD | EPA-8260 | **87.5** | **11** | | 50 | 150 | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene - BS | EPA-8260 | **92.9** | | | 50 | 150 | 07/05/2018 | DLC |
| Cis-1,2-Dichloroethene - BSD | EPA-8260 | **83.7** | **10** | | 50 | 150 | 07/05/2018 | DLC |



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Edmonds, WA 98020

CLIENT CONTACT: Cody Johnson
CLIENT PROJECT: B&K

DATE: 7/24/2018
ALS SDG#: EV18070011
WDOE ACCREDITATION: C601

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| 2,2-Dichloropropane - BS | EPA-8260 | **114** | | | 50 | 150 | 07/05/2018 | DLC |
| 2,2-Dichloropropane - BSD | EPA-8260 | **100** | **13** | | 50 | 150 | 07/05/2018 | DLC |
| Bromochloromethane - BS | EPA-8260 | **104** | | | 50 | 150 | 07/05/2018 | DLC |
| Bromochloromethane - BSD | EPA-8260 | **97.2** | **7** | | 50 | 150 | 07/05/2018 | DLC |
| Chloroform - BS | EPA-8260 | **96.8** | | | 50 | 150 | 07/05/2018 | DLC |
| Chloroform - BSD | EPA-8260 | **87.7** | **10** | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane - BS | EPA-8260 | **90.5** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,1-Trichloroethane - BSD | EPA-8260 | **79.1** | **14** | | 50 | 150 | 07/05/2018 | DLC |
| 1,1-Dichloropropene - BS | EPA-8260 | **95.3** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,1-Dichloropropene - BSD | EPA-8260 | **82.7** | **14** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dichloroethane - BS | EPA-8260 | **98.2** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dichloroethane - BSD | EPA-8260 | **93.0** | **5** | | 50 | 150 | 07/05/2018 | DLC |
| Trichloroethene - BS | EPA-8260 | **86.7** | | | 74.4 | 141 | 07/05/2018 | DLC |
| Trichloroethene - BSD | EPA-8260 | **76.4** | **13** | | 74.4 | 141 | 07/05/2018 | DLC |
| 1,2-Dichloropropane - BS | EPA-8260 | **93.2** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dichloropropane - BSD | EPA-8260 | **84.7** | **10** | | 50 | 150 | 07/05/2018 | DLC |
| Dibromomethane - BS | EPA-8260 | **89.8** | | | 50 | 150 | 07/05/2018 | DLC |
| Dibromomethane - BSD | EPA-8260 | **86.2** | **4** | | 50 | 150 | 07/05/2018 | DLC |
| Bromodichloromethane - BS | EPA-8260 | **91.7** | | | 50 | 150 | 07/05/2018 | DLC |
| Bromodichloromethane - BSD | EPA-8260 | **83.9** | **9** | | 50 | 150 | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene - BS | EPA-8260 | **87.7** | | | 50 | 150 | 07/05/2018 | DLC |
| Trans-1,3-Dichloropropene - BSD | EPA-8260 | **81.6** | **7** | | 50 | 150 | 07/05/2018 | DLC |
| Toluene - BS | EPA-8260 | **91.1** | | | 71.7 | 139 | 07/05/2018 | DLC |
| Toluene - BSD | EPA-8260 | **81.3** | **11** | | 71.7 | 139 | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene - BS | EPA-8260 | **93.1** | | | 50 | 150 | 07/05/2018 | DLC |
| Cis-1,3-Dichloropropene - BSD | EPA-8260 | **85.8** | **8** | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane - BS | EPA-8260 | **85.7** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,2-Trichloroethane - BSD | EPA-8260 | **81.9** | **5** | | 50 | 150 | 07/05/2018 | DLC |
| 1,3-Dichloropropane - BS | EPA-8260 | **84.3** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,3-Dichloropropane - BSD | EPA-8260 | **80.1** | **5** | | 50 | 150 | 07/05/2018 | DLC |
| Tetrachloroethylene - BS | EPA-8260 | **89.7** | | | 50 | 150 | 07/05/2018 | DLC |
| Tetrachloroethylene - BSD | EPA-8260 | **76.4** | **16** | | 50 | 150 | 07/05/2018 | DLC |
| Dibromochloromethane - BS | EPA-8260 | **83.9** | | | 50 | 150 | 07/05/2018 | DLC |
| Dibromochloromethane - BSD | EPA-8260 | **79.0** | **6** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dibromoethane - BS | EPA-8260 | **81.8** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dibromoethane - BSD | EPA-8260 | **78.6** | **4** | | 50 | 150 | 07/05/2018 | DLC |
| Chlorobenzene - BS | EPA-8260 | **87.3** | | | 73 | 131 | 07/05/2018 | DLC |
| Chlorobenzene - BSD | EPA-8260 | **77.3** | **12** | | 73 | 131 | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BS | EPA-8260 | **88.8** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,1,2-Tetrachloroethane - BSD | EPA-8260 | **80.3** | **10** | | 50 | 150 | 07/05/2018 | DLC |



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CLIENT PROJECT: B&K

## LABORATORY CONTROL SAMPLE RESULTS

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Bromoform - BS | EPA-8260 | **79.3** | | | 50 | 150 | 07/05/2018 | DLC |
| Bromoform - BSD | EPA-8260 | **77.9** | **2** | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BS | EPA-8260 | **86.5** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,1,2,2-Tetrachloroethane - BSD | EPA-8260 | **86.9** | **0** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane - BS | EPA-8260 | **96.3** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2,3-Trichloropropane - BSD | EPA-8260 | **96.6** | **0** | | 50 | 150 | 07/05/2018 | DLC |
| Bromobenzene - BS | EPA-8260 | **92.0** | | | 50 | 150 | 07/05/2018 | DLC |
| Bromobenzene - BSD | EPA-8260 | **84.1** | **9** | | 50 | 150 | 07/05/2018 | DLC |
| 2-Chlorotoluene - BS | EPA-8260 | **96.2** | | | 50 | 150 | 07/05/2018 | DLC |
| 2-Chlorotoluene - BSD | EPA-8260 | **83.7** | **14** | | 50 | 150 | 07/05/2018 | DLC |
| 4-Chlorotoluene - BS | EPA-8260 | **96.8** | | | 50 | 150 | 07/05/2018 | DLC |
| 4-Chlorotoluene - BSD | EPA-8260 | **84.8** | **13** | | 50 | 150 | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene - BS | EPA-8260 | **93.8** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,3-Dichlorobenzene - BSD | EPA-8260 | **83.3** | **12** | | 50 | 150 | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene - BS | EPA-8260 | **93.9** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,4-Dichlorobenzene - BSD | EPA-8260 | **83.1** | **12** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dichlorobenzene - BS | EPA-8260 | **91.5** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dichlorobenzene - BSD | EPA-8260 | **83.7** | **9** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BS | EPA-8260 | **82.6** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2-Dibromo 3-Chloropropane - BSD | EPA-8260 | **85.6** | **4** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene - BS | EPA-8260 | **91.2** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2,4-Trichlorobenzene - BSD | EPA-8260 | **81.8** | **11** | | 50 | 150 | 07/05/2018 | DLC |
| Hexachlorobutadiene - BS | EPA-8260 | **90.3** | | | 50 | 150 | 07/05/2018 | DLC |
| Hexachlorobutadiene - BSD | EPA-8260 | **79.2** | **13** | | 50 | 150 | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene - BS | EPA-8260 | **91.2** | | | 50 | 150 | 07/05/2018 | DLC |
| 1,2,3-Trichlorobenzene - BSD | EPA-8260 | **81.8** | **11** | | 50 | 150 | 07/05/2018 | DLC |

SQ1 - Spike outside of control limits with a high bias. Associated compounds non-detect. No corrective action taken.

### ALS Test Batch ID: R319215 - Water by RSK-175

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Methane - BS | RSK-175 | **85.4** | | | 80 | 120 | 07/05/2018 | CCN |
| Methane - BSD | RSK-175 | **88.3** | **3** | | 80 | 120 | 07/05/2018 | CCN |
| Ethane - BS | RSK-175 | **108** | | | 80 | 120 | 07/05/2018 | CCN |
| Ethane - BSD | RSK-175 | **105** | **3** | | 80 | 120 | 07/05/2018 | CCN |
| Ethene - BS | RSK-175 | **93.6** | | | 80 | 120 | 07/05/2018 | CCN |
| Ethene - BSD | RSK-175 | **95.0** | **1** | | 80 | 120 | 07/05/2018 | CCN |
| Acetylene - BS | RSK-175 | **82.3** | | | 80 | 120 | 07/05/2018 | CCN |
| Acetylene - BSD | RSK-175 | **84.0** | **2** | | 80 | 120 | 07/05/2018 | CCN |



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.<br>130 - 2nd Ave. S.<br>Edmonds, WA 98020 | DATE:<br>ALS SDG#:<br>WDOE ACCREDITATION: | 7/24/2018<br>EV18070011<br>C601 |
| CLIENT CONTACT: | Cody Johnson | | |
| CLIENT PROJECT: | B&K | | |

## LABORATORY CONTROL SAMPLE RESULTS

### ALS Test Batch ID: R319465 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Nitrate - BS | EPA-300.0 | **95.0** | | | 80 | 120 | 07/04/2018 | JMJ |
| Nitrate - BSD | EPA-300.0 | **98.0** | **3** | | 80 | 120 | 07/04/2018 | JMJ |

### ALS Test Batch ID: R319916 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Nitrate - BS | EPA-300.0 | **94.5** | | | 80 | 120 | 07/03/2018 | JMJ |
| Nitrate - BSD | EPA-300.0 | **96.0** | **2** | | 80 | 120 | 07/03/2018 | JMJ |

### ALS Test Batch ID: R319919 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Sulfate - BS | EPA-300.0 | **90.5** | | | 80 | 120 | 07/06/2018 | JMJ |
| Sulfate - BSD | EPA-300.0 | **90.0** | **1** | | 80 | 120 | 07/06/2018 | JMJ |

### ALS Test Batch ID: R319921 - Water by EPA-300.0

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Sulfate - BS | EPA-300.0 | **99.0** | | | 80 | 120 | 07/16/2018 | JMJ |
| Sulfate - BSD | EPA-300.0 | **95.5** | **4** | | 80 | 120 | 07/16/2018 | JMJ |

### ALS Test Batch ID: R320351 - Water by SM5310C

| SPIKED COMPOUND | METHOD | %REC | RPD | QUAL | LIMITS MIN | LIMITS MAX | ANALYSIS DATE | ANALYSIS BY |
|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (TOC) - BS | SM5310C | **100** | | | 83 | 117 | 07/13/2018 | CAS |

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: Jordan Associates ALS Job #: EV1807001 1

Project: B+K

Received Date: 3 July 2018 Received Time: 1235 By: G.P

Type of shipping container: Cooler ✓ Box ____ Other ____

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

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

If no, Sample Control added preservative to the following:

| Sample Number | Reagent | Analyte |
|---|---|---|
| | | |
| | | |
| | | |

Were VOA vials checked for absence of air bubbles? ✓ ____ ____

Bubbles present in sample #: None

Temperature of cooler upon receipt: 4.3°C on ice both cooled (Cold) Cool Ambient N/A

Explain any discrepancies:
Sulfuric acid preserved poly MW-9-070218 sampled @1035 labeled as SM-MW-90-070218.

Was client contacted? Yes Who was called? Cody (LM VO voicemail) By whom? Shawn Date: 7/3/18 1:57 pm

Outcome of call: Should be MW-9-070218.

**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): EV1806700 11

Date 7/3/18 Page 1 Of 2

PROJECT ID: B+K
REPORT TO COMPANY: Landau Assoc
PROJECT MANAGER: Cody Johnson
ADDRESS:
PHONE: P.O. #: 164 5001.01V
E-MAIL: cjohnson@landauinc.com
INVOICE TO COMPANY:
ATTENTION:
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? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | HVOCs | TOC | 2 trap Sulfat | | Methane, ethene, ethane | | | | |
| 1. MW-6-070218 | 7/2/18 | 850 | W | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | X | X | X | X | X | | | |
| 2. MW-7-070218 | | 1000 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. MW-9-070218 | | 1035 | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. MW-10-070218 | | 805 | | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. MW-11-070318 | 7/3/18 | 930 | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. MW-12-070318 | | 845 | | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. MW-13-070318 | | 805 | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. SM-MW-17A-070218 | 7/2/18 | 1555 | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. SM-MW-14-070218 | | 1435 | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. SM-MW-8-070218 | | 1615 | | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: [signature] LAI 7/3/18 1235
   Received By: [signature] ALS 7/3/18 12:35
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**
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): EV1807011

Date 7/3/18 Page 2 Of 3

PROJECT ID: BHK
REPORT TO COMPANY: LAE
PROJECT MANAGER: Cody Sahnow
ADDRESS:
PHONE: P.O. #: 164501.010
E-MAIL:
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED

OTHER (Specify)

| 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 ☐ | Nitrate | Sulfate | TOC | Methane, ethane, ethene | | | | | NUMBER OF CONTAINERS | RECEIVED IN GOOD CONDITION? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SM-MW-19-070218 | 7/2/18 | 1230 | W | 11 | | | | | | X | | | | | | | | | X | X | X | X | | | | | | |
| 2. SM-MW-19-070218 | | 1130 | | 12 | | | | | | X | | | | | | | | | | | | X | | | | | | |
| 3. SM-MW-21-070218 | | 1335 | | 13 | | | | | | X | | | | | | | | | | | | X | | | | | | |
| 4. DUP-070218 | | 1900 | | 14 | | | | | | X | | | | | | | | | | | | X | | | | | | |
| 5. Trip Blanks | | | | 15 | | | | | | X | | | | | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: LAE 7/2/18 1235
   Received By: ALS 7/3/18 12:35
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