

Monitoring Well Installation and Sampling Report

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821 3rd Avenue, Longview, WA

Prepared for:
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1.0 INTRODUCTION

1.1 Description of Property

The J.H. Kelly, Inc. (J.H. Kelly) subject site is located at 821 3rd Avenue in Longview, Washington. The site is located in a mixed use area and is surrounded by industrial, commercial, residential, and recreational properties (Figure 1). The Cowlitz River is located approximately 1,060 feet east of the site and Cowlitz County Diking District drainage Ditch Number Five is located along the western property boundary of the site. The site is made up of several large buildings and is mostly paved with asphalt. The property is used for fabrication of pipe and storage of finished and stock materials.

A fueling system for J.H. Kelly vehicles was located near the center of the site. The fueling system consisted of two underground storage tanks (USTs), one 10,000 gallon gasoline UST, and one 4,000 gallon diesel UST. The fuel dispensers were located on the western edge of the UST nest. The UST system was removed in 1989 and is discussed in more detail in the following sections. Figure 2 shows the current site layout and approximate location of the former UST system.

1.2 Site History

Pre-Tank Removal (July & September 1989)

On July 15, 1989, JH Kelly had a pressure test conducted on the USTs (one 10,000 gallon unleaded fuel tank, and one 4,000 gallon diesel tank) and both tanks passed the tightness test. A subsurface investigation was conducted by SRH Environmental Management on August 23, 1989. The test pit was located north of the fuel dispenser island and excavated to a depth of 18 feet below ground surface (bgs). Two soil samples were taken from the test pit and were composited by the lab into one sample for analysis. BTEX and TPH (EPA Method 418.1) were analyzed. BTEX constituents were below laboratory detection limits. A total TPH of 58 mg/Kg was reported. Only benzene had a detection limit greater than the Ecology cleanup level (CUL). The detection limit for benzene was 0.04 mg/Kg. Reportedly, the excavation location was chosen based on a soil gas survey. The soil gas survey was not provided for review.

UST Removal (November 1991)

The USTs were decommissioned in November of 1991 by Pacific Northern Environmental (PNE). Fuel dispensers, USTs, and ancillary equipment were removed. Field screening with a photo-ionization detector (PID) indicated petroleum contaminated soil (PCS) below the dispensers. PCS was also noted around each of the USTs as they were removed. A water sample was taken from the excavation had MTCA Method A cleanup level (CUL) exceedances for diesel range petroleum hydrocarbons (DRPH) (24,000 µg/L), gasoline range petroleum hydrocarbons (GRPH) (130,000 µg/L), benzene (4,100 µg/L), toluene (18,000 µg/L), ethylbenzene (5,300 µg/L), and xylenes (32,000 µg/L).

Four soil samples (one sample from each end of the two USTs) were collected from the soil/groundwater interface and analyzed for total petroleum hydrocarbons (TPH) by EPA Method 3550/8015 Modified. One of the samples (JHK-SS3-12.5') had a oil range petroleum hydrocarbons (ORPH) concentration of 480 mg/Kg which exceeded the CUL at the time of 200 mg/Kg. Two of the four samples were analyzed for BTEX. One of the samples (JHK-SS5-12.5') had a benzene concentration of 1.10 mg/Kg which exceeded the CUL. The area with ORPH exceedance (west end of the UST) and the area with the benzene exceedance (east end of the USTs) were over excavated. Following over excavation activities a sample was taken from the area with the ORPH exceedance (JHK-SS5-12.5'). The sample had DRPH concentration of 120 mg/Kg and a ORPH concentration of 120 mg/Kg. The sample taken for the area with the benzene exceedance was below the laboratory detection limit for all BTEX constituents. The laboratory detection limit for the benzene analysis was 0.1 mg/Kg, which is greater than the current CUL of 0.03 mg/Kg. Historic soil sample results and sample locations are shown on Figures and Tables in Appendix A.

Groundwater Monitoring (December 1991 to 2006)

Prior to backfilling, a monitoring well (MW) was installed in the UST excavation the week of November 22, 1991. The monitoring well consists of a 30 inch diameter steel pipe to a depth of 10 feet bgs with a 24 inch slotted PVC casing inserted inside the steel casing from 9 to 12 feet bgs. The monitoring well location is shown on Figure 2. It should be noted that this well construction does not comply with current Ecology specifications.

The initial sampling results from December 1991 showed exceedances of GRPH (1,010 µg/L), ORPH (3,340 µg/L), and benzene (30 µg/L). Follow up sampling in May 1992 showed no detectible TPH but showed an exceedance for benzene (11.1 µg/L). The next sampling event in June of 1993 detected an exceedance of DRPH (270,000 µg/L) and a quantity of TPH designated as "Other" that was 6,000 µg/L. The DRPH concentration is reported to be flagged as not matching the typical diesel fingerprint chromatogram. "Other" is not defined in the laboratory report. There is also no oil range results reported for TPH. It is not clear from the report if TPHO was not detected, or not analyzed. None of the BTEX constituents exceeded the CUL.

Groundwater sampling was suspended until April 1996. All TPH was below laboratory detection limits except for something designated as "Other". The "Other" result (279 µg/L) is flagged as eluting in the diesel range, but not matching the typical diesel fingerprint chromatogram. All BTEX constituents were below the laboratory detection limits.

Groundwater sampling was suspended again until April 2006. The well and ditch behind the site were analyzed for GRPH and BTEX only. All results were below the laboratory detection limits. Groundwater sampling was again suspended until 2016. The well and ditch were sampled in April and July for BTEX only. All samples were below laboratory detection limits. Groundwater results from the site monitoring well are summarized on a Table in Appendix A.

2017 Phase II ESA

A Phase II ESA was completed based on correspondence from the Washington State Department of Ecology (Ecology) dated October 31, 2016, in response to a request by the property owner for a determination of No Further Action (NFA) for the subject property. On September 26, 2017, Ecology Project Manager for the site, Aaron Fiedler, was contacted to discuss a proposed scope of work for the subject property that could result in a no further action determination (NFA) being issued if no petroleum contamination is identified above MTCA Method A CULs. The scope of work for this Phase II ESA was approved by Ecology and would be sufficient to justify a NFA determination if all conditions were achieved.

On October 11, 2017, HydroCon conducted a subsurface investigation and included a total of five direct push borings (HC01 through HC05) were advanced to a maximum depth of 15 feet bgs at the site 2017 in an effort to evaluate current soil and groundwater conditions in the vicinity of the former UST excavation. Only a low concentration of ORPH was detected in the soil samples collected at 10 feet bgs at HC01 and HC02. The location of these samples are centrally located and along the eastern boundary of the former UST excavation. It is assumed that the likely source of the ORPH in the HC01-10 and HC02-10 samples is from the imported fill material used at the site and not from the release of the former UST system. Boring locations are shown on Figure 2 and soil results are presented on Table 1.

Based on the results of laboratory analysis, concentrations of DRPH were detected in the groundwater samples collected from HC01, HC02, and HC04 above the MTCA Method A cleanup level. In addition, MTBE was detected above the MTCA Method A cleanup level in HC04. Groundwater results are summarized on Table 2.

It should be noted that water samples collected from temporary borings are screening level quality only and should not be solely relied upon for site characterization purposes. The drilling and sampling method used (direct push) produces disturbed (turbid) samples and may not represent groundwater conditions. Groundwater samples collected from properly constructed and developed monitoring wells produces relatively non turbid samples. It's possible that the concentrations of contaminants will be significantly lower in groundwater samples collected from properly constructed and developed monitoring wells than from temporary borings.

Based on historic and current groundwater data, it is HydroCon's opinion that the remaining groundwater contamination has decreased significantly over time and will naturally attenuate to concentrations below the MTCA Method A cleanup level.

1.3 Regional Geology and Hydrogeology

The geology of southwestern Cowlitz County is characterized by sedimentary and volcanic deposits laid down or extruded during the Tertiary and Quaternary periods (Livingston, 1966). The oldest formations (Cowlitz Formation and Goble Volcanics) include Eocene basaltic andesite and volcanoclastic deposits which were deposited 45 to 32 million years ago (Phillips, 1987). Lava flows of the Columbia River Basalt Group overlie the older formations. The next youngest rocks exposed in the area are the Upper Miocene to Lower Pleistocene sand, silt, gravel, and conglomerate of the Troutdale Formation. The valley fill material represents deposits of the ancestral Columbia River. The dissected upland that bound the Columbia River valley is composed of these older Formations. The youngest material exposed in the region is the outburst deposits of glacial Lake Missoula, landslide deposits, and recent alluvium.

Regional hydrogeology in the vicinity of the site is characterized by recharge to bedrock in the upland areas and discharge into the Columbia River. Groundwater flows from the regional bedrock through the thick alluvial sequence in the river valley before discharging into the rivers (Meyers, 1970). Precipitation also infiltrates the surface of the alluvium, recharging local flow systems in the river's floodplain.

1.4 Local Geology and Hydrogeology

Locally the geology consists of fill material down to approximately 9 to 10 feet bgs. The fill consisted of chunks of wood, asphalt, concrete, rebar, and bricks in a matrix of silt, sand, and gravel¹. Below the fill material is native sands and silts. A layer of grass and reeds was observed at the top of the native soils indicating the area had once been ground surface. Groundwater flow direction calculated during the October 2017 Phase II ESA was to the southwest toward Ditch Number Five. Flow direction was estimated using water levels collected on October 11, 2017 from temporary borings in relation to a ground surface elevation survey conducted upon completion of drilling activities. The well lid of the existing monitoring well (MW) was used as the site datum. The datum was assigned an elevation of 100 feet.

1.5 Purpose of Investigation

HydroCon proposed to install four monitoring wells (MW01 through MW04) to delineate the dissolve DRPH and MTBE detected in groundwater during the Phase II ESA. Well construction details and locations were submitted to Ecology for approval. The Ecology Project Manager approved of the well locations in an email dated November 28, 2017.

¹ SRH Environmental Management, *Report on Soil Sampling and Analysis* (September 1, 1989)

2.0 HEALTH AND SAFETY

2.1 Health and Safety Plan

HydroCon prepared a site specific health and safety plan (HASP) to govern health and safety protocols used during this investigation. Work was performed using Occupational Safety and Health Administration (OSHA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots.

2.2 Underground Utility Locates

Prior to the commencement of subsurface activities public utility notification was requested through the Washington One Call service (Locate Ticket Number 17473431). In addition, a private locating company was retained to clear the specific borings locations of potential utility conflicts.

3.0 SUBSURFACE INVESTIGATION

This section provides a discussion of the fieldwork procedures used to complete the subsurface investigation.

3.1 Soil Borings

Cascade Drilling was subcontracted to perform the drilling services. A total of four direct push borings (HC06 through HC09) were advanced to a maximum depth of 20 feet bgs at the site on December 12 and 13, 2017 in an effort to evaluate current soil and groundwater conditions. Borings were advanced at the following locations:

- HC06/MW01 was located 30 feet north of the former UST excavation.
- HC07/MW02 was located along the western edge of a former UST excavation boundary.
- HC08/MW03 was located 65 feet west of the former UST excavation boundary.
- HC09/MW04 was located 35 feet south of the former UST excavation.

The boring locations are illustrated on Figure 2.

Each boring was advanced in five-foot intervals to a completion depth of approximately 20 feet bgs. Continuous soil samples were collected using a five-foot long “macro” core tube sampler equipped with new, clear polyethylene liners. Each sample core was inspected for lithologic composition, presence of water, and field screened for the presence of petroleum hydrocarbons (stain, odor, and organic vapors with a PID). Boring logs detailing the lithology, field screening results, and sample depths are included as Appendix B. Selected soil samples were submitted to the laboratory boring based on sampling objectives (i.e., depth, soil type) and field screening results. The selected soil samples were removed from the polyethylene tubing using a new pair of disposable gloves and placed directly into labeled

laboratory prepared jars and sealed with Teflon-lined lids. Soil samples were placed into laboratory supplied containers and immediately placed in an ice filled cooler along with chain-of-custody documentation for shipment to Apex Labs in Tigard, Oregon. A total of four soil samples were collected for laboratory analysis.

All drilling and sampling tools were decontaminated between boring locations using a hot water pressure washer. All water generated during purging and decontamination procedures was placed in a labeled 55-gallon drum and stored on site pending disposal to a licensed disposal facility.

3.2 Field Screening

Field screening consisted of volatile organic vapor measurements using a photoionization detector (PID), sheen testing, visual observations (staining, etc.), and olfactory observations. A portion of each soil sample was placed in a sealable plastic baggie. The tip of the PID was inserted into the plastic bag in the airspace above the soil sample and the PID measurement was recorded on the attached boring logs (Appendix A). The PID was calibrated before use at the site to a test gas standard consisting of 100 ppmv isobutylene. Sheen testing consisted of placing a small portion of soil in clear water and observing the water for the presence of hydrocarbon sheen. Because several factors can affect PID readings (e.g. moisture, temperature, and background conditions), HydroCon determined that a value of 2 ppm or greater may indicate the presence of organic vapors originating from contaminants at the site.

3.3 Monitoring Well Installation

The borings were completed as 2-inch diameter groundwater monitoring wells at the site (MW01 through MW04). The wells were constructed with a 15-foot length of 0.010-inch slotted pre-packed PVC well screen and a traffic-grade flush monument. Clean silica sand was used as a filter pack around the slotted well screen and then wrapped with stainless steel mesh screen. In addition, 10-20 silica sand was placed in the annular space from the bottom of the borehole to approximately 1 foot above the well screen. Hydrated bentonite was placed on top of the filter pack and used as a seal. A traffic-grade flush monument was cemented in place on top of each well. Monitoring well construction details are summarized on the boring logs (Appendix B).

3.4 Well Development

HydroCon developed monitoring wells MW01 through MW04 on December 14, 2017 using surging and pumping techniques. A clean stainless steel bailer attached to a new length of poly rope was used to surge and bail turbid water from the well. The well was then pumped using new LDPE tubing attached to a peristaltic pump. This process was repeated until no further improvement in water clarity was recorded. Details of well development are included on field forms in Appendix C.

3.5 Groundwater Sampling

The monitoring wells (MW01 through MW04) were sampled on December 18, 2017. The wells were purged prior to sampling using a low flow peristaltic pump equipped with new length of LDPE tubing attached to a new length of silicon tubing. Groundwater quality parameters (pH, temperature, and specific conductivity) were measured and recorded on a Groundwater Sample Collection field form along with the depth to water measurements (Appendix C). Purging was completed when the field parameters had stabilized.

Upon stabilization of the groundwater quality parameters, the groundwater samples were collected and placed in laboratory-prepared sampling containers. The samples were placed in an iced cooled along with the chain-of-custody documentation and transported APEX Laboratory, in Portland Oregon for analysis.

3.6 Surveying

Hampstur Corporation was contracted to survey the location and elevation of the newly installed wells. The vertical and horizontal coordinates of the wells were surveyed relative to established datums in the area. The horizontal coordinates are relative to the Lambert Grid Washington South Zone [equivalent to North American Datum, 1983 (NAD83)] and the vertical coordinates are relative to the North American Vertical Datum, 1988 (NAVD88).

The survey data is recorded on the attached boring logs. The reference elevation of each monitoring well (at the inscribed reference mark on top of the PVC casing) is recorded on Table 3 and is used to calculate the groundwater surface elevation at each respective well.

3.7 Laboratory Analysis

A total of four soil samples and four groundwater samples were collected for laboratory analysis. Each sample was analyzed for the following set of parameters:

- GPRH by Northwest Method NWTPH-Gx.
- DPRH and ORPH by Northwest Method NWTPH-Dx.
- BTEX and MTBE by EPA Method 8260C.
- Groundwater samples were also analyzed for MTBE by EPA Method 8260C.
- Soil samples utilized 5035A preservation.

3.8 Management of Investigation Derived Waste

Soil and water generated during the investigation were placed in a labeled 55-gallon drum. The drum is being temporarily stored at the northwest corner of the building south of the investigation area.

4.0 INVESTIGATION RESULTS

4.1 Subsurface Conditions

A large portion of the subject site is paved with asphalt and or concrete. Below the pavement is fill material to approximately 9 to 10 feet bgs. The fill consisted of wood, asphalt, concrete, rebar, and bricks in a matrix of silt, sand, and gravel. Below the fill material is native and sands and silts. A layer of grass and reeds was observed at the top of the native soils indicating the area had once been the ground surface.

The static water levels in the monitoring wells varied between 6.40 and 7.54 feet bgs. Depth to water and groundwater stabilization parameter measurements are documented on the Groundwater Sample Collection Forms included in Appendix B. Depth to water and groundwater elevations are presented on Table 3.

A groundwater elevation contour map was generated from depth to water data collected on December 18 2017. The groundwater flow direction north of the former UST excavation was generally towards the south-southwest. The groundwater flow direction south of the former UST excavation is toward the north and northwest. The groundwater gradient was calculated in the southern portion of the site is approximately 0.017 foot/foot. The groundwater gradient in the northern portion of the site is approximately 0.003 foot/foot. The groundwater elevations and groundwater contours are shown on Figure 3.

The groundwater appears to be mounded in the vicinity of MW04. The groundwater elevation calculated for MW04 is approximately 0.5 foot greater in elevation than monitoring wells MW01 through MW03. The groundwater parameters recorded for MW04 during purging do not indicate the same characteristics as the field parameters recorded for monitoring wells MW01 through MW03. Monitoring well MW04 had lower specific conductivity and higher dissolved oxygen readings relative to the remaining wells in the monitoring network. This may indicate that a water line leak may be present in the area of MW04.

4.2 Field Screening Results

The field screening results are summarized on the attached boring logs. There were no elevated PID readings (i.e. above 2.0 ppm) detected in any of the soil borings. There was no visible petroleum soil staining, hydrocarbon odor, or visible sheen observed in any of the soil samples collected.

4.3 Analytical Results

The laboratory results were compared to the Ecology Model Toxics Cleanup Act (MTCA) Method A Cleanup Levels. The following sections describe the results of the testing. The complete laboratory report is included as Appendix D.

4.3.1 Soil Analytical Results

Soil analytical results are reported as milligrams per kilograms (mg/kg) and are summarized in Table 1 and Figure 4. The results indicated that none of the samples had a detection of a constituent of concern (COC) above the MTCA Method A cleanup level and only the following samples had detections above the method reporting limit (MRL):

- The sample collected from HC07 at 11 feet bgs had ORPH at a concentration of 629 mg/kg and GRPH at 21.3 mg/kg.
- The sample collected from HC08 at 10 feet bgs had ORPH at a concentration of 298 mg/kg.
- The sample collected from HC09 at 11 feet bgs had ORPH at a concentration of 190 mg/kg.

4.3.2 Groundwater Analytical Results

Groundwater analytical results are reported as micrograms per liter ($\mu\text{g/L}$) and are summarized in Table 3 and Figure 5. The results indicated that the sample collected from MW01 had a detection of DRPH above the MTCA Method A cleanup level (500 $\mu\text{g/L}$).

- The sample collected from MW01 had DRPH at a concentration of 851 $\mu\text{g/L}$.
- The sample collected from MW02 had DRPH and GRPH at concentrations of 375 $\mu\text{g/L}$ and 117 $\mu\text{g/L}$ respectively. MTBE was also detected at a concentration of 3.21 $\mu\text{g/L}$.
- The sample collected from MW03 had DRPH at a concentration of 416 $\mu\text{g/L}$.
- The sample collected from MW04 had ORPH at a concentration of 179 $\mu\text{g/L}$.

5.0 DISCUSSION

5.1 Soil Conditions

Based on the results of field screening and laboratory analysis, a low concentration of ORPH was observed in the soil samples collected at 10 and 11 feet bgs at HC07, HC08 and HC09. GRPH was also detected in the soil sample collected from HC011. It's HydroCon's opinion that the likely source of the ORPH in the soil samples is from the imported fill material used at the site and not from the release of the former UST system. The GRPH detected in soil boring HC07 is located near the western limit of the UST remedial excavation. GRPH detected in this soil sample is below the MTCA Method A cleanup limit.

5.2 Groundwater Conditions

DRPH was detected in the groundwater sample collected from MW01 above the MTCA Method A cleanup level and is located upgradient of the former UST excavation. This detection may not be associated with the UST release but may be associated with the fill material placed in this area. Petroleum hydrocarbon detections in the remaining wells were all below the MTCA Method A cleanup levels.

6.0 RECOMMENDATIONS

Based on the results of the soil and groundwater sampling, HydroCon makes the following recommendations:

- Redevelop monitoring well MW01 to remove sediments that may bias the sampling results for DRPH.
- Perform quarterly groundwater monitoring to monitor natural attenuation of the remaining groundwater contamination and verify that the remaining groundwater plume is stable or shrinking.
- Determine the source of the groundwater mounding near MW04.

7.0 QUALIFICATIONS

HydroCon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. HydroCon makes no warranties, either expressed or implied, regarding the findings, conclusions or recommendations. Please note that HydroCon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report.

Findings and conclusions resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this monitoring. Subsurface conditions may vary from those encountered at specific sampling locations or during other surveys, tests, assessments, investigations, or exploratory services; the data, interpretations and findings are based solely upon data obtained at the time and within the scope of these services.

This report is intended for the sole use of JH Kelly. This report may not be used or relied upon by any other party without the written consent of HydroCon. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

The conclusions presented in this report are, in part, based upon subsurface sampling performed at selected locations and depths. There may be conditions between borings or samples that differ significantly from those presented in this report and which cannot be predicted by this study.

Signature:

Report Prepared By:

Report Reviewed By:



Brian Pletcher
Project Manager

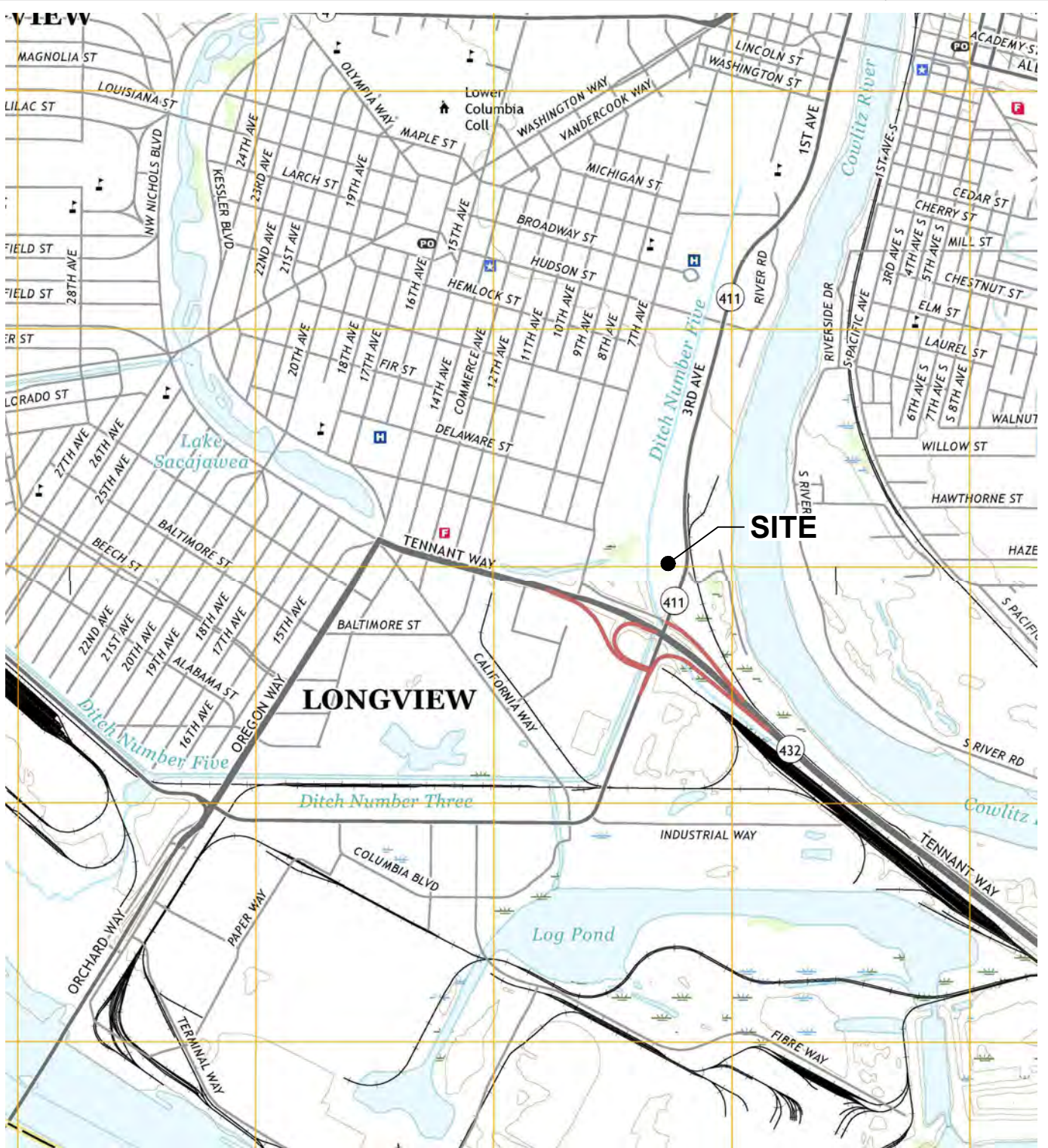


Craig Hultgren, LHG
Principal Geologist

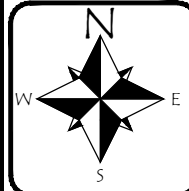
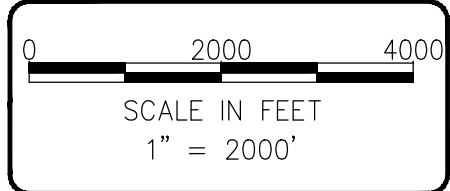


CRAIG HULTGREN

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NOTE(S):
 USGS, KELSO QUADRANGLE
 WASHINGTON-OREGON
 7.5 MINUTE SERIES (TOPOGRAPHIC)



Hydro Con
 510 Allen St. Suite B Kelso, Wa 98626. Ph(360)-703-6086

DATE: 10-23-17
 DWN: JJT
 CHK: RH
 APPROVED: RH
 PRJ. MGR: CH
 PROJECT NO:
 2017-055

FIGURE 1
 SITE LOCATION MAP

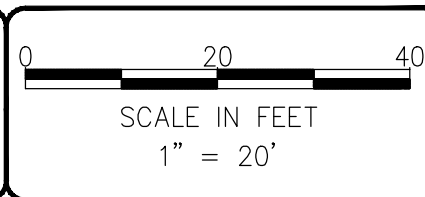
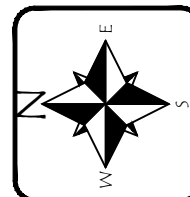
JH KELLY
 821 3RD AVE.
 LONGVIEW, WA.

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Legend

- HC01 ⊕ Boring Locations
- MW01 ⊕ Monitoring Well Locations

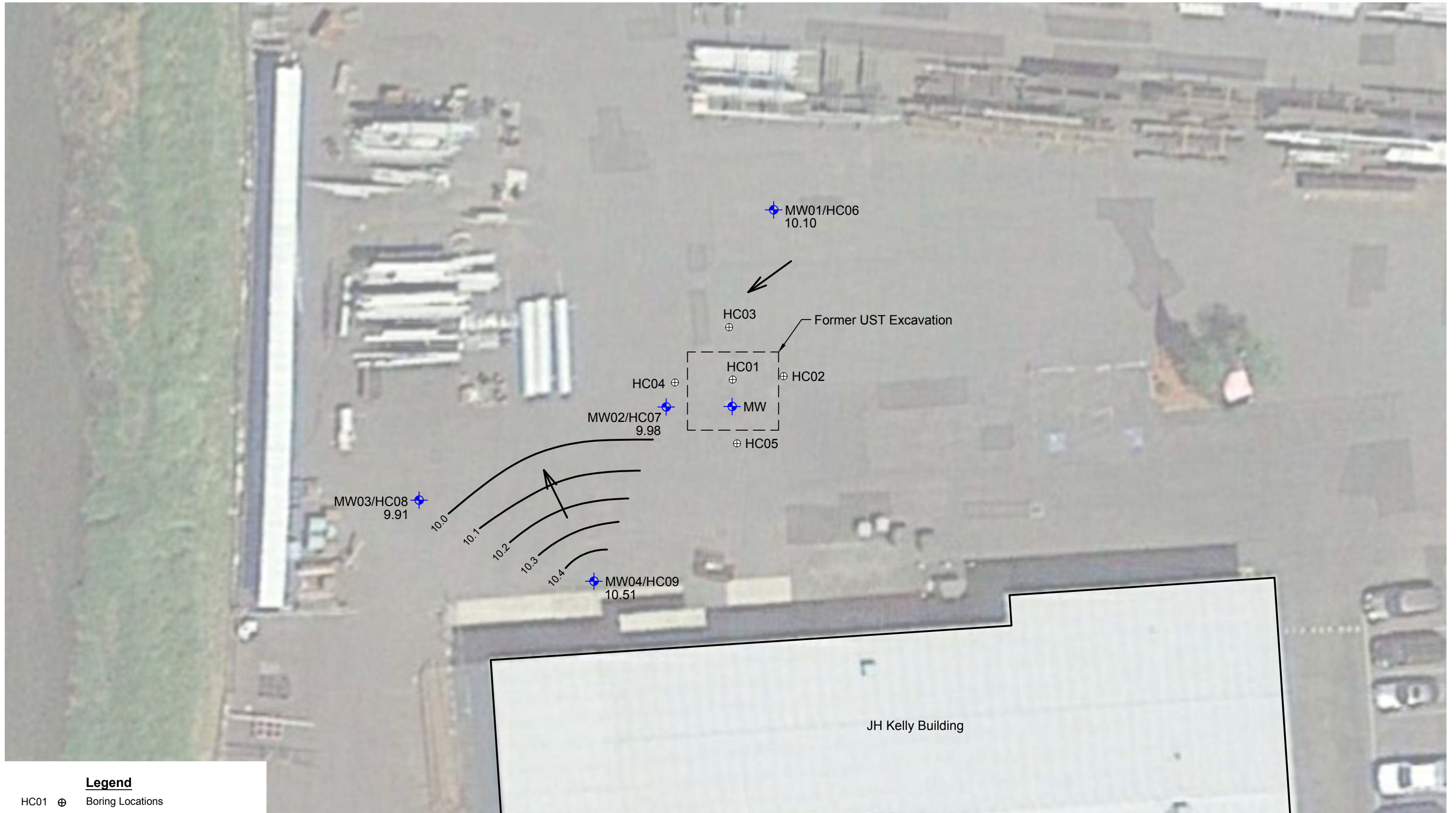


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 PROJECT NO:
 2017-055

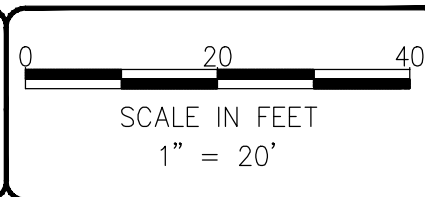
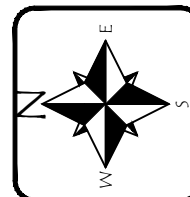
FIGURE 2
 SITE FEATURES

JH KELLY
 821 3RD AVE.
 LONGVIEW, WA.

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- Legend**
- HC01 ⊕ Boring Locations
 - MW01 ⊕ Monitoring Well Locations
 - 10.01 Groundwater Elevation
 - ~ Groundwater Contour
 - ← Approximate Groundwater Flow Direction



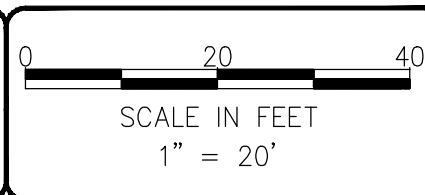
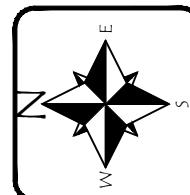
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 DWN: JJT
 CHK: CD
 APPROVED: CD
 PRJ. MGR: CH
 PROJECT NO:
 2017-055

FIGURE 3
 GROUNDWATER ELEVATION CONTOUR MAP
 FOR DECEMBER 18, 2017
 JH KELLY
 821 3RD AVE.
 LONGVIEW, WA.

Boring ID	Sample Depth in Feet bgs	Sample Date	Fuels			Volatiles			
			DRPH	ORPH	GRPH	Benzene	Toluene	Ethylbenzene	Xylene, Total
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HC06-11	11	12/11/2017	<26.7	<53.4	<7.54	<0.0151	<0.0377	<0.0754	<0.113
HC07-11	11	12/11/2017	<246	629	21.3	<0.0121	<0.0302	<0.0603	<0.0905
HC08-10	10	12/12/2017	<25	298	<6.62	<0.0132	<0.0331	<0.0662	<0.0993
HC09-11	11	12/12/2017	<26.3	190	<6.68	<0.0134	<0.0334	<0.0668	<0.100
MTCA Method A Cleanup Levels			2,000	2000	30/100	0.03	7	6	9



- Legend**
- HC01 ⊕ Boring Locations
 - MW01 ⊕ Monitoring Well Locations



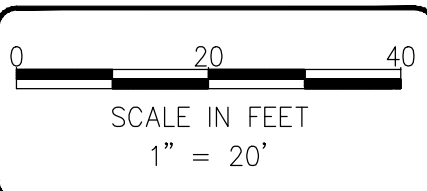
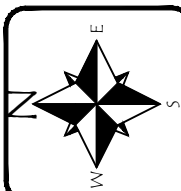
DATE: 1-4-18
DWN: JJT
CHK: CD
APPROVED: CD
PRJ. MGR: CH
PROJECT NO:
2017-055

FIGURE 4
Summary of Soil
Analytical Results
JH KELLY
821 3RD AVE.
LONGVIEW, WA.

Well ID	Date	Fuels			Volatiles				
		DRPH µg/L	ORPH µg/L	GRPH µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylene µg/L	MTBE µg/L
MW01	12/18/2017	851	<151	<100	<0.200	<1.0	<0.500	<1.50	<1.0
MW02	12/18/2017	375	<150	117	<0.200	<1.0	<0.500	<1.50	3.21
MW03	12/18/2017	416	<150	<100	<0.200	<1.0	<0.500	<1.50	<1.0
MW04	12/18/2017	<74.8	179	<100	<0.200	<1.0	<0.500	<1.50	<1.0
Method A Groundwater Cleanup		500	500	800	5	1,000	700	1,000	20



Legend
 HC01 ⊕ Boring Locations
 MW01 ⊕ Monitoring Well Locations



DATE: 1-4-18
 DWN: JJT
 CHK: CD
 APPROVED: CD
 PRJ. MGR: CH
 PROJECT NO:
 2017-055

FIGURE 5
 Summary of
 Groundwater Results
 JH KELLY
 821 3RD AVE.
 LONGVIEW, WA.

Table 1
 JH Kelly Soil Analytical Results
 821 3rd Avenue, Longview, WA

Boring ID	Sample Depth in Feet bgs	Sample Date	Fuels			Volatiles			
			DRPH	ORPH	GRPH	Benzene	Toluene	Ethylbenzene	Xylene, Total
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
HC01-10	10	10/11/2017	<238	621	<6.25	<0.0125	<0.0625	<0.0313	<0.0938
HC02-10	10	10/11/2017	<50	65.2	<5.60	<0.0112	<0.0560	<0.0280	<0.0840
HC03-10	10	10/11/2017	<50	<250	<7.50	<0.0150	<0.0750	<0.0375	<0.112
HC04-10	10	10/11/2017	<50	<250	<6.44	<0.0129	<0.0644	<0.0322	<0.0967
HC05-10	10	10/11/2017	<50	<250	<6.11	<0.0122	<0.0611	<0.0306	<0.0917
HC06-11	11	12/11/2017	<26.7	<53.4	<7.54	<0.0151	<0.0377	<0.0754	<0.113
HC07-11	11	12/11/2017	<246	629	21.3	<0.0121	<0.0302	<0.0603	<0.0905
HC08-10	10	12/12/2017	<25	298	<6.62	<0.0132	<0.0331	<0.0662	<0.0993
HC09-11	11	12/12/2017	<26.3	190	<6.68	<0.0134	<0.0334	<0.0668	<0.100
MTCA Method A Cleanup Levels			2,000	2000	30/100	0.03	7	6	9

Notes

Red denotes concentration exceeds MTCA Method A cleanup level.

MTCA Method A Cleanup Levels, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

GRPH analyzed by Method NWTPH-Gx.

DRPH and ORPH analyzed by Method NWTPH-Dx.

Volatiles analyzed by EPA 8260B, 8260C or 8021B.

Table 2
 JH Kelly Groundwater Analytical Results
 821 3rd Avenue, Longview, WA

	Fuels			Volatiles							Metal
	DRPH	ORPH	GRPH	Benzene	Ethylbenzene	Toluene	Xylene, Total	EDB	EDC	MTBE	Lead, Total
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
WA Method A Cleanup	500	500	800 1000	5	700	1,000	1	0.01	5	20	15
Benzene (Non Detect)			1000								
Benzene (Detect)			800								

Field ID Date

HydroCon Subsurface Investigation 2017												
Field ID	Date	DRPH	ORPH	GRPH	Benzene	Ethylbenzene	Toluene	Xylene, Total	EDB	EDC	MTBE	Lead, Total
HC01-10	10/11/2017	538 _{F13}	<151	<100	<0.200	<0.500	<1.0	<1.50	-	-	8.68	-
HC02-10	10/11/2017	<74.8	<150	<100	<0.200	<0.500	<1.0	<1.50	-	-	2.06	-
HC03-10	10/11/2017	636 _{F11}	<151	<100	<0.200	<0.500	1.56	<1.50	-	-	6.55	-
HC04-10	10/11/2017	1370 _{F13}	<151	<100	<0.200	<0.500	<1.0	<1.50	<0.0200	<0.500	35.5	7.78
HC05-10	10/11/2017	<75.5	222 _{F13}	<100	<0.200	<0.500	<1.0	<1.50	-	-	1.43	-

Notes

Red denotes concentration exceeds MTCA Method A cleanup level.
 MTCA Method A Cleanup Levels, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.
 GRPH analyzed by Method NWTPH-Gx.
 DRPH and ORPH analyzed by Method NWTPH-Dx.
 Volatiles analyzed by EPA 8260B, 8260C or 8021B.
 Metals analyzed by EPA Method 6010B, 6010C or 200.8.

ec - Method reporting limit exceeds Clean Up Level shown.

F11 - The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.

F13 - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

s-05 Surrogate recovery is estimated do to sample dilution required for high analyte concentration and / or matrix interference.

- = not measured/not analyzed
 < = not detected at a concentration exceeding the laboratory reporting limit
 mg/kg = milligrams per kilogram
 DRPH = Diesel Range Petroleum Hydrocarbons
 EDB = 1,2-dibromoethane (ethylene dibromide)
 EDC = 1,2-dichloroethylene (ethylene dichloride)
 EPA = U.S. Environmental Protection Agency
 GRPH = Gasoline Range Petroleum Hydrocarbons
 MTBE = methyl tertiary-butyl ether
 MTCA = Washington State Model Toxics Control Act
 NWVPH = Northwest Volatile Petroleum Hydrocarbons
 ORPH = Oil Range Petroleum Hydrocarbons

Table 3 JH Kelly Monitoring Well Analytical Results
821 3rd Avenue, Longview, WA

Well ID	Date	Measurement			Fuels			Volatiles				
		Top of Casing feet	Depth to Groundwater feet	Groundwater Elevation feet	DRPH µg/L	ORPH µg/L	GRPH µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylene µg/L	MTBE µg/L
MW01	12/18/2017	17.64	7.54	10.10	851	<151	<100	<0.200	<1.0	<0.500	<1.50	<1.0
MW02	12/18/2017	17.02	7.04	9.98	375	<150	117	<0.200	<1.0	<0.500	<1.50	3.21
MW03	12/18/2017	16.31	6.40	9.91	416	<150	<100	<0.200	<1.0	<0.500	<1.50	<1.0
MW04	12/18/2017	17.03	6.53	10.50	<74.8	179	<100	<0.200	<1.0	<0.500	<1.50	<1.0
MTCA Method A Groundwater Cleanup Levels					500	500	800	5	1,000	700	1,000	20

Notes

Red denotes concentration exceeds MTCA Method A cleanup level.

GRPH = Gasoline Range Petroleum Hydrocarbons

DRPH = Diesel Range Petroleum Hydrocarbons

ORPH = Oil Range Petroleum Hydrocarbons

MTBE = methyl tertiary-butyl ether

DRPH and ORPH analyzed by Method NWTPH-Dx.

Gasoline Range Organics analyzed by Method NWTPH-Gx.

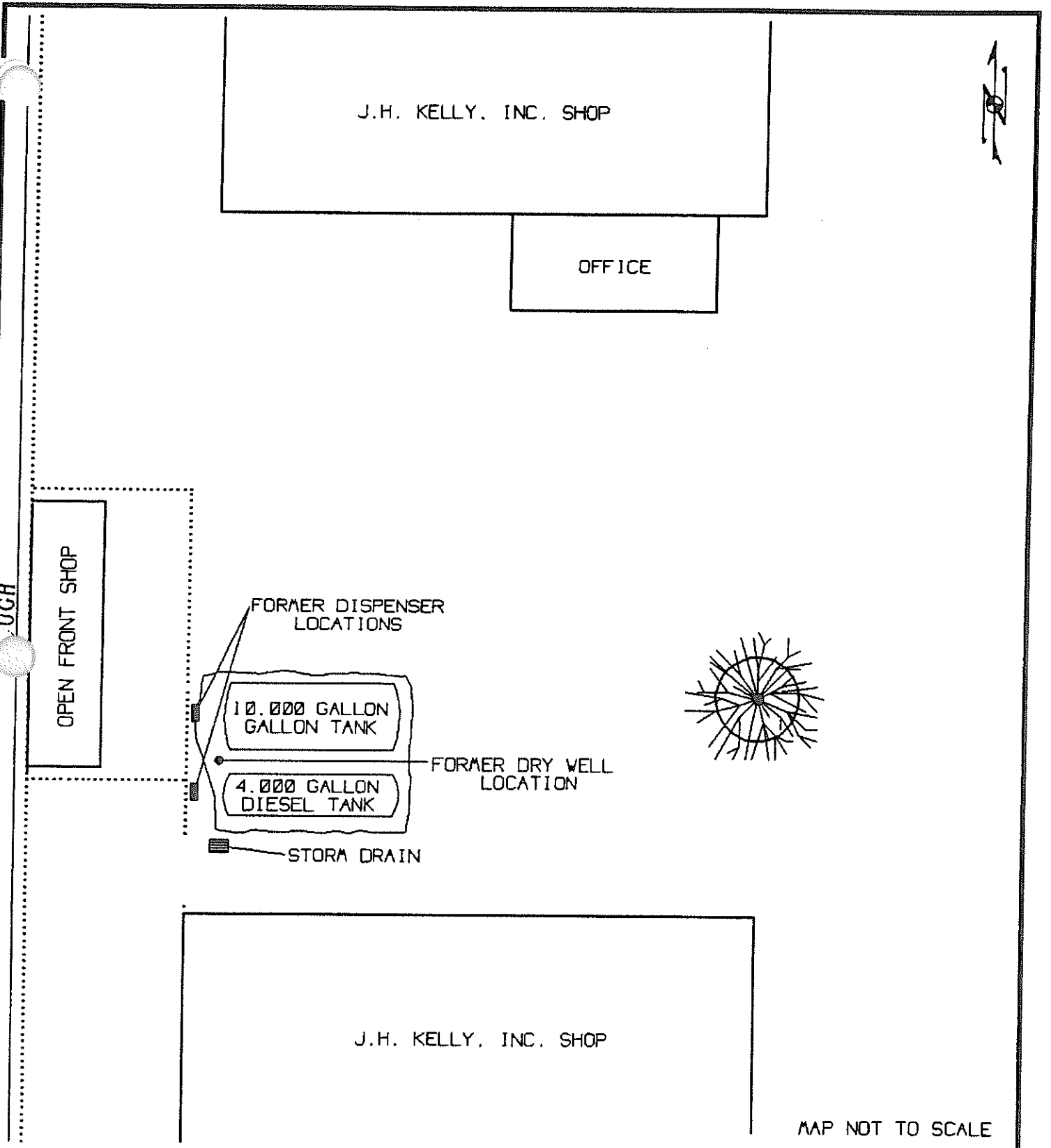
Volatiles analyzed by EPA Method 8260C.

< = not detected at a concentration above the laboratory report limit .

µg/L = micrograms per liter

MTCA Method Cleanup Levels, WAC 173-340-720 through 173-340-760, revised Nov., 2007

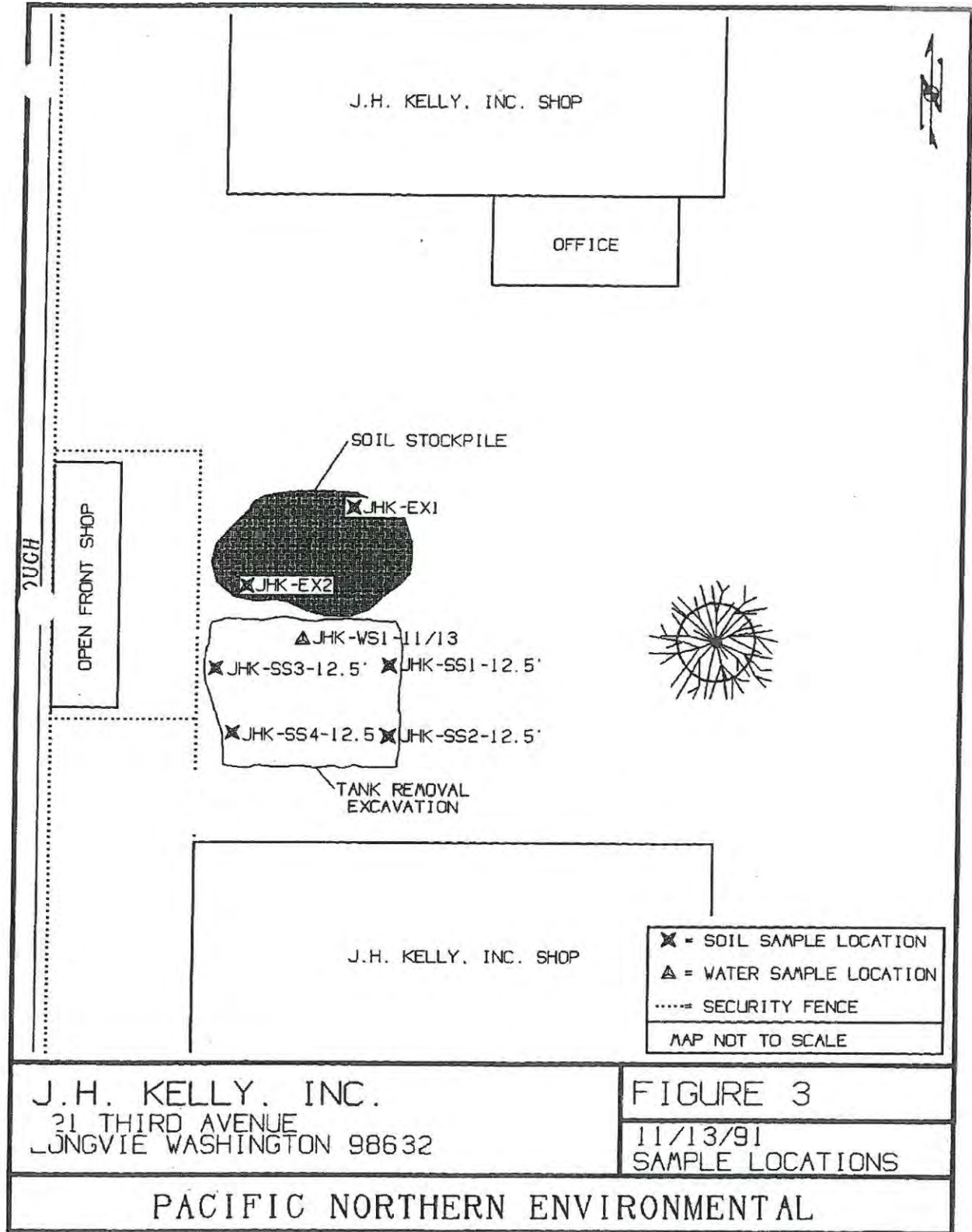
APPENDIX A
HISTORIC DATA AND FIGURES



J.H. KELLY, INC.
 21 THIRD AVENUE
 LONGVIE WASHINGTON 98632

FIGURE 2
 SITE FACILITY MAP

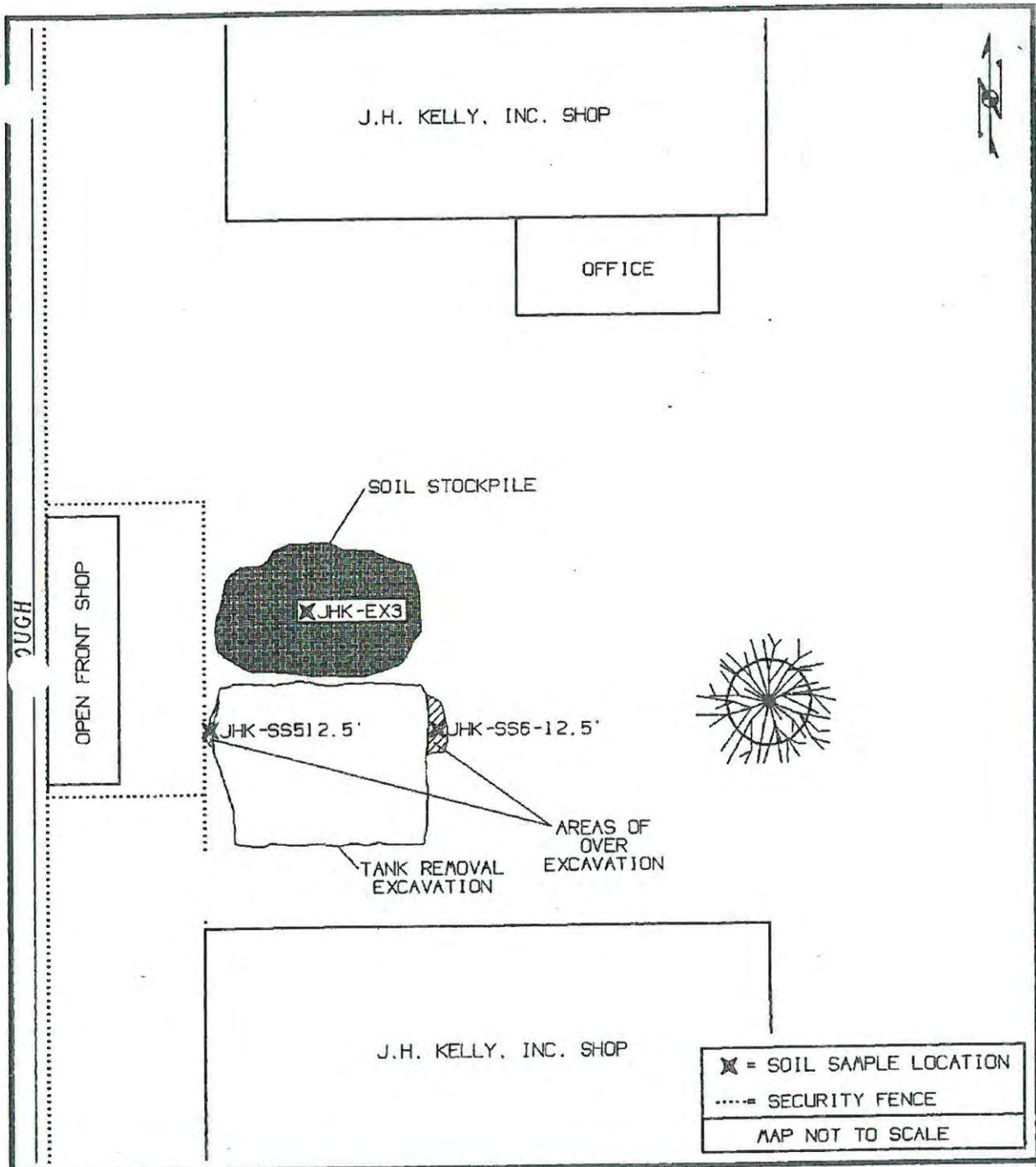
PACIFIC NORTHERN ENVIRONMENTAL



J.H. KELLY, INC.
 21 THIRD AVENUE
 LONGVIE WASHINGTON 98632

FIGURE 3
 11/13/91
 SAMPLE LOCATIONS

PACIFIC NORTHERN ENVIRONMENTAL



<p>J.H. KELLY, INC. 21 THIRD AVENUE LONGVIEW WASHINGTON 98632</p>	<p>FIGURE 4 11/22/91 SAMPLE LOCATIONS</p>
---	---

PACIFIC NORTHERN ENVIRONMENTAL

Tables

Table 1 Soil Analytical Results for Excavation Confirmation Samples									
	Units	Method A CUL [1991]	Method A CUL [Current]	Sample ID:					
				JHK-SS1-12.5'	JHK-SS6-12.5' (SS1 Over Excavation)	JHK-SS2-12.5'	JHK-SS3-12.5'	JHK-SS5-12.5' (SS3 Over Excavation)	JHK-SS4-12.5'
TPH-D	mg/Kg	200	2,000	<10	--	<10	<10	<10	<10
TPH-G	mg/Kg	100	30	<10	--	<10	<10	<10	<10
TPH-O	mg/Kg	200	2,000	70	--	130	480	70	140
Benzene	mg/Kg	0.5	0.03	1.10	<0.05	--	0.14	--	--
Toluene	mg/Kg	40	7	<0.10	<0.05	--	<0.05	--	--
Ethylbenzene	mg/Kg	20	6	<0.10	<0.05	--	<0.05	--	--
Xylenes	mg/Kg	20	9	<0.10	<0.05	--	0.07	--	--
		Orange	Indicates a result in exceedance of the 1991 MTCA Method A CUL, but below the current MTCA Method A CUL						
		Red	Indicates a result in exceedance of the current MTCA Method A CUL						
		Bold	Indicates a result above the laboratory detection limit						
		--	Analyte Not Analyzed						

Table 2
Groundwater Monitoring Analytical Results

	Units	Method A CUL [Current]	Monitoring Well (12/10/91)	Monitoring Well (05/14/92)	Monitoring Well (06/30/93)	Monitoring Well (04/04/96)	Monitoring Well (04/27/06)	Monitoring Well (04/12/16)	Monitoring Well (07/11/16)
TPH-G	µg/L	1,000/800	1,010	<50	<1,000	<50	<250	--	--
TPH-D	µg/L	500	<50	<50	270,000 (b)	<50	--	--	--
TPH-O	µg/L	500	3,340	<50	NR	NR	--	--	--
Other* (TPH)	µg/L	NR	NR	NR	6,000	279 (b)	--	--	--
Benzene	µg/L	5	30	11.1	3.7	<0.5	<0.50	<0.50	<0.50
Toluene	µg/L	1,000	30	<1	<1	<1	<1.0	<0.50	<0.50
Ethylbenzene	µg/L	700	16	12	1	<1	<1.0	<0.50	<0.50
Xylenes	µg/L	1,000	200	37	1	<1	<1.0	<0.50	<0.50
<p>Red Indicates a result in exceedance of the current MTCA Method A CUL</p> <p>Bold Indicates a result above the laboratory detection limit</p> <p>(b) Quantified as diesel. The Sample contained components that eluted in the diesel range, but the chromatogram did not match the typical diesel fingerprint</p> <p>* 'Other' is not defined in the laboratory reports</p> <p>NR TPH in this range was not reported in the laboratory results</p> <p>-- Analyte Not Analyzed</p>									

APPENDIX B BORING LOGS



510 Allen Street
Kelso, WA 98626
Phone: 360-703-6079

WELL/BORING NUMBER

MW01/
HC06

LOCATION MAP

MW01/HC06



PROJECT NAME: JH Kelly-Longview
PROJECT NUMBER: 2017-055
PROJECT LOCATION: Longview, WA
LOGGED BY: B. Pletcher
REVIEWED BY: C. Hultgren
DATE: 12-12-17

DESCRIPTION

(USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)

DEPTH (FT.) SYMBOL WELL DETAILS SAMPLE ID PID FIRST WATER BLOW COUNTS

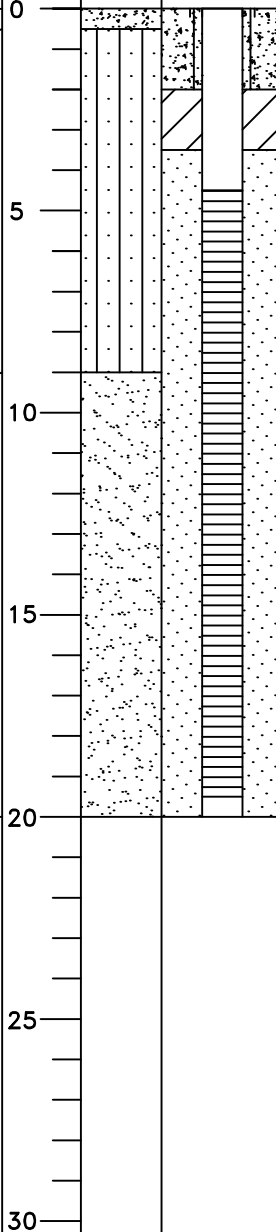
BOREHOLE/WELL CONSTRUCTION DETAILS

Concrete 6" thick.

SILTY SAND (SM) Dark brown, 65% fine sand and 25% non plastic fines, and 10% subrounded gravel up to 5/8" diameter, asphalt debris was observed from 2' to 9' bgs and wood waste was observed at 8' bgs, fill material, no hydrocarbon odor, damp.

SAND with SILT (SP) Grayish brown, 85% fine sand and 15% non plastic fines, reeds and rootlets visible at fill/native interface, no hydrocarbon odor, becomes wet at 11" bgs.

BOTTOM OF BORING AT 20' B.G.S.



HC06-11



WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 20
Sump: 19.5 to 20
Screen: 4.5 to 19.5
Casing: 0 to 20
Backfill:
Sand Pack: 3.5 to 20
Bentonite: 2 to 3.5
Concrete: 0 to 2
Stabilizers: None

MATERIALS USED

Casing: 2' PVC
Well Screen: 20' 0.010"
End Cap: Flat sump
Sand Pack: 1 50lb bags 10-20
Bentonite: 1 50lb bags
Concrete: 2 60lb bags
Monument: Flush
Well Cap: J-Plug
Other:

LEGEND:

- FILTER PACK
- BENTONITE
- CEMENT GROUT
- CUTTINGS/BACKFILL
- WATER LEVEL DURING DRILLING
- WATER LEVEL AFTER DRILLING

DRILLING CONTRACTOR: Cascade Drilling
DRILLING METHOD: Direct Push
BOREHOLE DIAMETER: 2-Inch
SAMPLING METHOD: Continuous Core
WELL TAG ID: --

CASING ELEVATION: 17.64
GROUND SURFACE ELEVATION: 17.87
NORTHING: 8530.88
EASTING: 52432.74



510 Allen Street
Kelso, WA 98626
Phone: 360-703-6079

WELL/BORING NUMBER MW03/HC08

LOCATION MAP

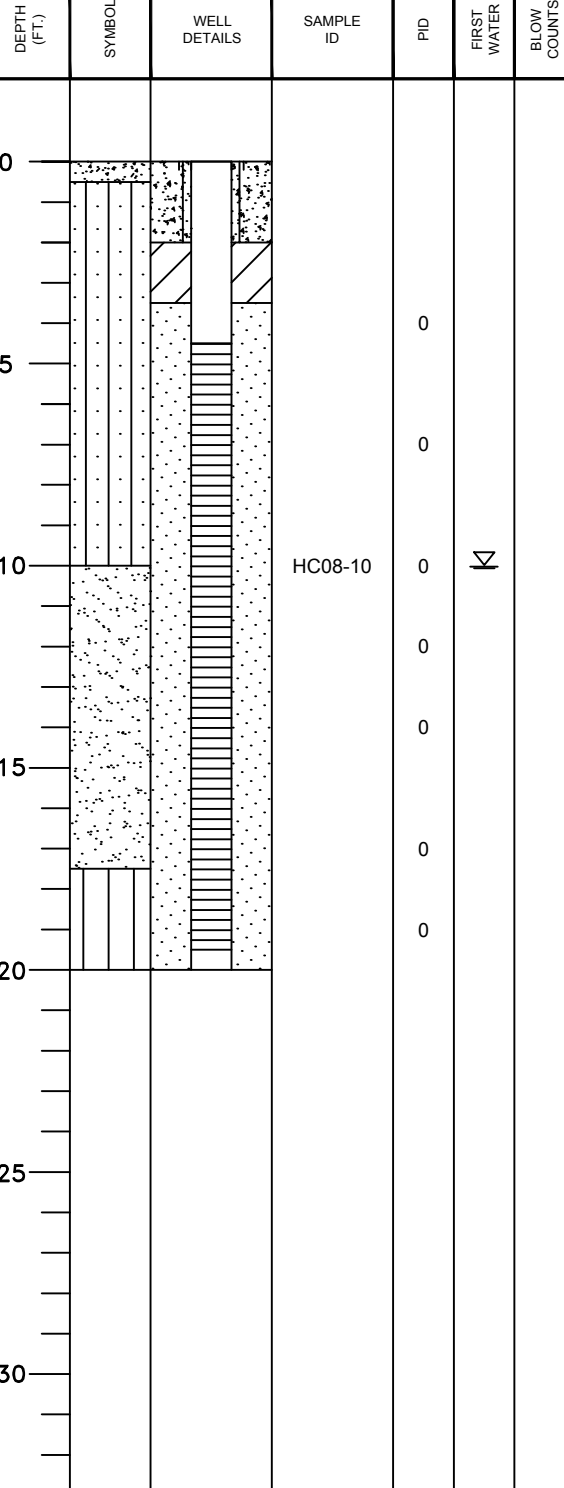
MW03/HC08



PROJECT NAME: JH Kelly-Longview
PROJECT NUMBER: 2017-055
PROJECT LOCATION: Longview, WA
LOGGED BY: B. Pletcher
REVIEWED BY: C. Hultgren
DATE: 12-12-17

DESCRIPTION

(USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)



BOREHOLE/WELL CONSTRUCTION DETAILS

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 20
Sump: 19.5 to 20
Screen: 4.5 to 19.5
Casing: 0 to 20
Backfill:
Sand Pack: 3.5 to 20
Bentonite: 2 to 3.5
Concrete: 0 to 2
Stabilizers: None

MATERIALS USED

Casing: 2' PVC
Well Screen: 20' 0.010"
End Cap: Flat sump
Sand Pack: 1 50lb bags 10-20
Bentonite: 1 50lb bags
Concrete: 2 60lb bags
Monument: Flush
Well Cap: J-Plug
Other:

LEGEND:

- FILTER PACK
- BENTONITE
- CEMENT GROUT
- CUTTINGS/BACKFILL
- WATER LEVEL DURING DRILLING
- WATER LEVEL AFTER DRILLING

DRILLING CONTRACTOR: Cascade Drilling
DRILLING METHOD: Direct Push
BOREHOLE DIAMETER: 2-Inch
SAMPLING METHOD: Continuous Core
WELL TAG ID: --

CASING ELEVATION: 16.31
GROUND SURFACE ELEVATION: 16.95
NORTHING: 8468.27
EASTING: 52356.21



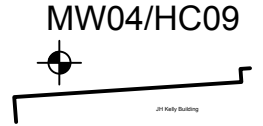
510 Allen Street
Kelso, WA 98626
Phone: 360-703-6079

WELL/BORING NUMBER

MW04/
HC09

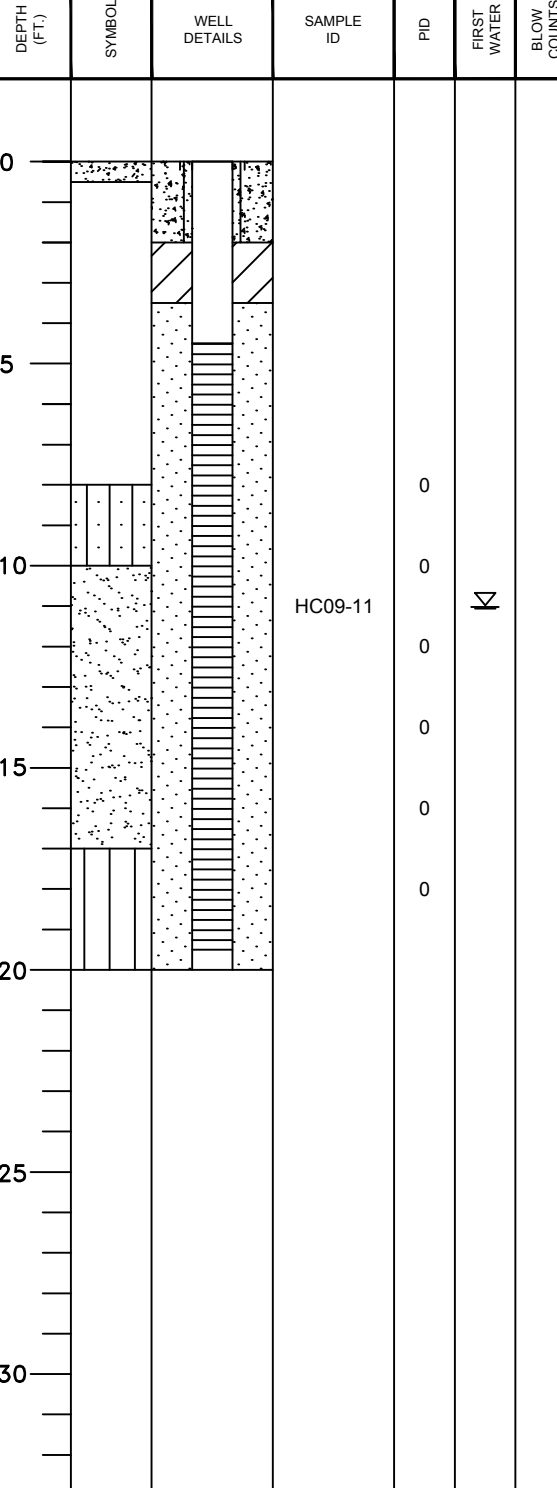
LOCATION MAP

PROJECT NAME: JH Kelly-Longview
PROJECT NUMBER: 2017-055
PROJECT LOCATION: Longview, WA
LOGGED BY: B. Pletcher
REVIEWED BY: C. Hultgren
DATE: 12-12-17



DESCRIPTION

(USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)



BOREHOLE/WELL
CONSTRUCTION DETAILS

WELL CONSTRUCTION

Depths (feet bgs)

- Borehole: 20
- Sump: 19.5 to 20
- Screen: 4.5 to 19.5
- Casing: 0 to 20
- Backfill:
- Sand Pack: 3.5 to 20
- Bentonite: 2 to 3.5
- Concrete: 0 to 2
- Stabilizers: None

MATERIALS USED

- Casing: 2' PVC
- Well Screen: 20' 0.010"
- End Cap: Flat sump
- Sand Pack: 1 50lb bags 10-20
- Bentonite: 1 50lb bags
- Concrete: 2 60lb bags
- Monument: Flush
- Well Cap: J-Plug
- Other:

LEGEND:

- FILTER PACK
- BENTONITE
- CEMENT GROUT
- CUTTINGS/BACKFILL
- WATER LEVEL DURING DRILLING
- WATER LEVEL AFTER DRILLING

DRILLING CONTRACTOR: Cascade Drilling
DRILLING METHOD: Direct Push
BOREHOLE DIAMETER: 2-Inch
SAMPLING METHOD: Continuous Core
WELL TAG ID: --

CASING ELEVATION: 17.03
GROUND SURFACE ELEVATION: 17.54
NORTHING: 8450.77
EASTING: 52393.92

APPENDIX C
FIELD FORMS



WELL DEVELOPMENT

Well ID #: MW01 Project name: JH Kelly
 Date: 14 Dec 17 Project #: 2017-055
 Time: 1125 Engineer: Chris Duschel

WELL INFORMATION

Monument condition Good Needs repair _____
 Well cap condition Good Locked Replaced Needs replacement
 Headspace reading Not measured _____ ppm
 Elevation mark Yes Added Other _____
 Well diameter 1.5-inch 2-inch 4-inch Other _____
 Odor light organic Comments _____

WELL MEASUREMENTS

Total well depth 19.71 ft Clean bottom Muddy bottom Not measured
 Depth to product N/A ft
 Depth to water 7.54 ft
 Casing volume 12.17 ft (H₂O) X 0.16 gpf = 1.95
 Casing volumes 1"=0.04 gpf 1.5"=0.09 gpf 2"=0.16 gpf 4"=0.65 gpf 6"= 1.47 gpf

PURGING INFORMATION

Pump type Peristaltic Submersible Centrifugal Other _____
 Purge tubing New LDPE New HDPE New Teflon Other _____
 Bailer type Disposable Stainless PVC Other _____
 Bailer cord used Monofilament Other _____
 Purge start time 1130 Purge stop time 1155 Purge Rate (GPM) 0.8
 Total Volume Purged (gallons) 20

FIELD PARAMETERS

Meters used FlowThru Cell Hach Hanna Other _____
Gallons pH Temp. Conductivity Turbidity Dissolved Oxygen ORP

NOTES/COMMENTS

Well surged w/ stainless steel bailer.
20 gallons purged w/ submersible; well did not pump dry

Engineer's Signature [Signature] Date 12/14/17



WELL DEVELOPMENT

Well ID #: MW002 Project name: JH Kelly
 Date: 14 Dec 17 Project #: 2017-055
 Time: 1305 Engineer: Chris Daschel

WELL INFORMATION

Monument condition Good Needs repair _____
 Well cap condition Good Locked Replaced Needs replacement
 Headspace reading Not measured _____ ppm
 Elevation mark Yes Added Other _____
 Well diameter 1.5-inch 2-inch 4-inch Other _____
 Odor light organic Comments _____

WELL MEASUREMENTS

Total well depth 19.63 ft Clean bottom Muddy bottom Not measured
 Depth to product N/A ft
 Depth to water 6.63 ft
 Casing volume 13.0 ft (H₂O) X 0.16 gpf = 2.08
 Casing volumes 1"=0.04 gpf 1.5"=0.09 gpf 2"=0.16 gpf 4"=0.65 gpf 6"= 1.47 gpf

PURGING INFORMATION

Pump type Peristaltic Submersible Centrifugal Other _____
 Purge tubing New LDPE New HDPE New Teflon Other _____
 Bailer type Disposable Stainless PVC Other _____
 Bailer cord used Monofilament Other _____
 Purge start time 1315 Purge stop time 1404 Purge Rate (GPM) 0.2
Total Volume Purged (gallons) 10

FIELD PARAMETERS

Meters used FlowThru Cell Hach Hanna Other _____
Gallons pH Temp. Conductivity Turbidity Dissolved Oxygen ORP

NOTES/COMMENTS

Surge well w/ stainless blocks
~~Surge well~~ Well dry after purging 5 gallons; Recharge
Purge 5 more gallons
Water clear

Engineer's Signature Date 12/14/17



WELL DEVELOPMENT

Well ID #: MW003 Project name: JH Kelly
 Date: 14 Dec 17 Project #: 2017-055
 Time: 1210 Engineer: Chris Daschel

WELL INFORMATION

Monument condition Good Needs repair _____
 Well cap condition Good Locked Replaced Needs replacement
 Headspace reading Not measured _____ ppm
 Elevation mark Yes Added Other _____
 Well diameter 1.5-inch 2-inch 4-inch Other _____
 Odor No Comments _____

WELL MEASUREMENTS

Total well depth 19.62 ft Clean bottom Muddy bottom Not measured
 Depth to product N/A ft
 Depth to water 6.13 ft
 Casing volume _____ ft (H₂O) X 0.16 gpf = _____
 Casing volumes 1"=0.04 gpf 1.5"=0.09 gpf 2"=0.16 gpf 4"=0.65 gpf 6"= 1.47 gpf

PURGING INFORMATION

Pump type Peristaltic Submersible Centrifugal Other _____
 Purge tubing New LDPE New HDPE New Teflon Other _____
 Bailer type Disposable Stainless PVC Other _____
 Bailer cord used Monofilament Other _____
 Purge start time 1215 Purge stop time 1222 Purge Rate (GPM) 1.43
 Total Volume Purged (gallons) 10

FIELD PARAMETERS

Meters used FlowThru Cell Hach Hanna Other _____
Gallons pH Temp. Conductivity Turbidity Dissolved Oxygen ORP

NOTES/COMMENTS

Well surged w/ stainless blocks.
10 gallons surged w/ submersible; No improvement in water quality
noted. Well did not go dry.

Engineer's Signature [Signature] Date 12/14/17



WELL DEVELOPMENT

Well ID #: MW04 Project name: JH Kelly
 Date: 14 Dec 17 Project #: 2017-055
 Time: 1230 Engineer: Chris Duschel

WELL INFORMATION

Monument condition Good Needs repair _____
 Well cap condition Good Locked Replaced Needs replacement
 Headspace reading Not measured _____ ppm
 Elevation mark Yes Added Other _____
 Well diameter 1.5-inch 2-inch 4-inch Other _____
 o Odor _____ o Comments _____

WELL MEASUREMENTS

Total well depth 19.60 ft Clean bottom Muddy bottom Not measured
 Depth to product N/A ft
 Depth to water 5.51 ft
 Casing volume 14.09 ft (H₂O) X 0.16 gpf = 2.25
 Casing volumes 1"=0.04 gpf 1.5"=0.09 gpf 2"=0.16 gpf 4"=0.65 gpf 6"= 1.47 gpf

PURGING INFORMATION

Pump type Peristaltic Submersible Centrifugal Other _____
 Purge tubing New LDPE New HDPE New Teflon Other _____
 Bailer type Disposable Stainless PVC Other _____
 Bailer cord used Monofilament Other _____
 Purge start time 1240 Purge stop time 1255 Purge Rate (GPM) 0.667
Total Volume Purged (gallons) 10

FIELD PARAMETERS

Meters used FlowThru Cell Hach Hanna Other _____
Gallons pH Temp. Conductivity Turbidity Dissolved Oxygen ORP

NOTES/COMMENTS

Surge well w/ stainless block
Purge 10 gallons w/ submersible
Water clear
well did not go dry

Engineer's Signature [Signature] Date 12/14/17

12/18/17 13:00

JH Kelly

	<u>DTW</u>
MW01	7.54
MW02	7.04
MW03	6.40
MW04	6.52



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW01

Project Name: Jit Kelly
 Hydrocon Project #: 2017-055
 Date: 18 Dec 17

Sample I.D.: MW01-W Time: 1335
 Field Duplicate I.D.: - Time: -
 Personnel: CD

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
 Well cap condition: Good Replaced Needs replacement Surface Water in Well
 Headspace reading: Not measured _____ ppm Odor _____
 Well diameter: 2-inch 4-inch 6-inch Other _____
 Comments _____

PURGING INFORMATION

Total well depth 19.71 ft Bottom: Hard Soft Not measured Screen Interval(s): 4.71-19.71
 Depth to product N/A ft
 Depth to water 7.54 ft Intake Depth (BTOC) 12' Begin Purging Well: 100 1314
 Casing volume 12.17 ft (H₂O) X 0.16 gal/ft = 1.95 gal. X 3 = 5.85 gal.
 Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
 Bailer type: _____ Water Disposal: Drummed Remediation System Other _____

FIELD PARAMETERS

Odor and/or Sheen: light organic odor

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1316	7.55		13.9	1.83	2.06	6.26	12.1	57.6
1319	7.54		14.6	1.90	1.46	6.15	-48.1	23.4
1322	7.54	0.12	14.7	1.87	1.67	6.04	-69.1	17.7
1325	7.54		14.6	1.83	1.00	6.06	-62.8	14.5
1328	7.54		14.6	1.78	0.80	6.05	-71.2	12.3
1331	7.54		14.6	1.71	0.70	6.04	-74.2	11.8
1334	7.54		14.5	1.65	0.70	5.96	-75.1	10.3
Sample @ 1325								

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: _____

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40 ml VOA	3	HCl	(No) 0.45 0.10	Gx, BTEX, MTBE
1L amber	1	HCl	(No) 0.45 0.10	Ox
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW02

Project Name: JH Kelly
 Hydrocon Project #: 2017-055
 Date: 18 Dec 17

Sample I.D.: MW02-W Time: 1420
 Field Duplicate I.D.: - Time: -
 Personnel: CD

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
 Well cap condition: Good Replaced Needs replacement Surface Water in Well
 Headspace reading: Not measured _____ ppm Odor _____
 Well diameter: 2-inch 4-inch 6-inch Other _____
 Comments: _____

PURGING INFORMATION

Total well depth 19.63 ft Bottom: Hard Soft Not measured Screen Interval(s): 4.63-19.63
 Depth to product N/A ft
 Depth to water 7.04 ft Intake Depth (BTOC) 12' Begin Purging Well: 1357
 Casing volume 12.59 ft (H₂O) X 0.16 gal/ft = 2.01 gal. X 3 = 6.03 gal.
 Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
 Bailer type: _____ Water Disposal: Drummed Remediation System Other _____

FIELD PARAMETERS

Odor and/or Sheen: no odor/sheen

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1400	7.10		14.3	0.90	1.91	5.93	-27.7	45.6
1403	7.11		15.1	0.92	0.78	6.23	-38.1	24.5
1406	7.11		15.4	0.94	0.59	6.33	-44.5	26.2
1409	7.11	0.135	15.4	0.94	0.48	6.38	-50.2	25.3
1412	7.12		15.3	0.94	0.42	6.41	-54.5	31.4
1415			15.4	0.94	0.37	6.44	-58.4	30.2
<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;"> Sample @ 1420 </div>								

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: _____

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40 ml vOA	3	HCl	No 0.45 0.10	Gx, ISTEK, MTBE DK
1 L amber	1	HCl	No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW03Project Name: JH Kelly
Hydrocon Project #: 2017-055
Date: 18 Dec 17Sample I.D.: MW03-W Time: 1505
Field Duplicate I.D.: - Time: -
Personnel: CJD

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
Well cap condition: Good Replaced Needs replacement Surface Water in Well
Headspace reading: Not measured _____ ppm Odor _____
Well diameter: 2-inch 4-inch 6-inch Other _____
Comments _____

PURGING INFORMATION

Total well depth 19.62 ft Bottom: Hard Soft Not measured Screen Interval(s): 4.62-19.62
Depth to product N/A ft
Depth to water 6.40 ft Intake Depth (BTOC) 12' Begin Purging Well: 1442
Casing volume 13.22 ft (H₂O) X 0.16 gal/ft = 2.12 gal. X 3 = 6.36 gal.
Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
Bailer type: _____ Water Disposal: Drummed Remediation System Other _____

FIELD PARAMETERS

Odor and/or Sheen: very light odor

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1445	6.39		14.1	1.01	2.45	6.23	-7.7	5.19
1448	6.39		14.7	1.04	0.89	6.44	-31.9	1.26
1451	6.40	0.15	14.8	1.05	0.61	6.58	-47.7	1.15
1454	6.39		14.8	1.05	0.50	6.63	-57.1	0.93
1457	6.39		14.8	1.05	0.45	6.66	-62.8	0.82
1500			14.9	1.05	0.41	6.68	-68.4	0.94
Sample @ 1505								

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: _____

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40 ml VOA	3	HCl	No 0.45 0.10	Gx, BTEX, MTBE DX
1 L amber	1	HCl	No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW04

Project Name: Sit Kelly
 Hydrocon Project #: 2017-055
 Date: 18 Dec 17

Sample I.D.: MW04-W Time: 1550
 Field Duplicate I.D.: - Time: -
 Personnel: CD

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
 Well cap condition: Good Replaced Needs replacement Surface Water in Well
 Headspace reading: Not measured _____ ppm Odor _____
 Well diameter: 2-inch 4-inch 6-inch Other _____
 Comments: _____

PURGING INFORMATION

Total well depth 19.60 ft Bottom: Hard Soft Not measured Screen Interval(s): 4.60-19.60
 Depth to product N/A ft
 Depth to water 6.52 ft Intake Depth (BTOC) 12' Begin Purging Well: 1529
 Casing volume 13.08 ft (H₂O) X 0.16 gal/ft = 2.09 gal. X 3 = 6.27 gal.
 Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
 Bailer type: _____ Water Disposal: Drummed Remediation System Other _____

FIELD PARAMETERS

Odor and/or Sheen: light organic odor

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1531	6.74		11.6	0.50	3.89	6.42	-4.0	5.77
1534	6.89		12.6	0.493	1.90	6.65	-2.8	4.21
1537	7.01	0.125	12.6	0.480	1.77	6.69	-4.5	7.56
1540	7.08		12.7	0.478	1.72	6.44	-5.7	27.3
1543	7.09		12.7	0.479	1.77	6.53	-5.9	21.7
1546	7.08		12.7	0.477	1.84	6.57	-6.1	25.6
<div style="border: 1px solid blue; border-radius: 50%; padding: 10px; display: inline-block;"> Sample @ 1550 </div>								

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: _____

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40ml vOA	3	HCl	(No) 0.45 0.10	Gx, ISTEX, MT13E
1L amber	1	HCl	(No) 0.45 0.10	Dx
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____

APEX LABS

CHAIN OF CUSTODY

Lab # _____ COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

PO# _____

Company: HydroCon Project Mgr: David Bergs Project Name: St Kelly Project # 2017-055

Address: 510 Allen Street Suite 13 Kelso, WA 98626 Phone: (360) 703-6079 Fax: - Email: ChrisD@hydroconllc.net

Sampled by: Chris Dashed ANALYSIS REQUEST

Site Location: OR (WA)
 Other: _____

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn	TOTAL DISS TCLP	1200- COLS	1200-Z	MTBE	
1		12/17	1335	Water	4		X	X				X											X	
2			1420																					
3			1505																					
4			1550																					
5																								
6																								
7																								
8																								
9																								
10																								

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: _____ RECEIVED BY: _____

Signature: _____ Date: _____ Signature: _____ Date: _____

Printed Name: Chris Dashed Time: _____ Printed Name: _____ Time: _____

Company: HydroCon Company: _____



WATER QUALITY METER CALIBRATION

Site Name and (Number): 2017-055 JH Kelly Calibration Date: 18 Dec 17
 Hydrocon Site Number: _____ Calibration Time: 1020
 Weather: 45° / Rain Temperature: _____ Barometric Pressure: 771.7 mmHg
 Personnel: Chris Darchel Water Quality Meter: YSI Professional Plus
 Calibration Location: Site Office Other: _____

Parameter	1 st Standard	Initial Reading	Final Reading	2 nd Standard	Initial Reading	Final Reading
Temperature (°C)	----	16.4	15.4	----	-	-
Sp. Conductivity (mS/cm)	1.41	1.41	1.41	4.49	-	-
Dissolved Oxygen [(mg/L)/%]	----	----	----	----	8.21/40.4%	9.05/40.5%
pH (SU)	7.00	6.91	7.00	4.00	4.94	4.00
ORP (mV)	----	----	----	220	199.7	220.0
Turbidity (NTU)	40.0	-	-	0.0	-	-

- Notes: 1. Quanta meters are calibrated beginning with a Level Two solution followed by the Auto-Cal solution.
2. Be sure to check the dissolved oxygen probe calibration procedure (each meter is different).
3. Temperature extremes will alter the calibration standards chemistry and the meter's results.

Calibration Comments: Hach Turbidity Meter calibrated separately

APPENDIX D
LABORATORY REPORT AND CHAIN-OF-CUSTODY
DOCUMENTATION

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Friday, December 15, 2017

Dave Borys
HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

RE: JH Kelly / 2017-055

Enclosed are the results of analyses for work order A7L0336, which was received by the laboratory on 12/13/2017 at 10:46:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager

HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HC06-11	A7L0336-01	Soil	12/11/17 09:35	12/13/17 10:46
HC07-11	A7L0336-02	Soil	12/11/17 12:00	12/13/17 10:46
HC08-10	A7L0336-03	Soil	12/12/17 10:50	12/13/17 10:46
HC09-11	A7L0336-04	Soil	12/12/17 12:30	12/13/17 10:46

Apex Laboratories



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Lisa Domenighini, Client Services Manager

HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
HC06-11 (A7L0336-01)			Matrix: Soil		Batch: 7120691			
Diesel	ND	---	26.7	mg/kg dry	1	12/14/17 07:12	NWTPH-Dx	
Oil	ND	---	53.4	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>"</i>	
HC07-11 (A7L0336-02)			Matrix: Soil		Batch: 7120691			
Diesel	ND	---	246	mg/kg dry	10	12/14/17 07:57	NWTPH-Dx	
Oil	629	---	492	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>" S-05</i>	
HC08-10 (A7L0336-03)			Matrix: Soil		Batch: 7120691			
Diesel	ND	---	25.0	mg/kg dry	1	12/14/17 07:35	NWTPH-Dx	
Oil	298	---	50.0	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>"</i>	
HC09-11 (A7L0336-04RE1)			Matrix: Soil		Batch: 7120691			
Diesel	ND	---	26.3	mg/kg dry	1	12/14/17 11:33	NWTPH-Dx	
Oil	190	---	52.7	"	"	"	"	F-03, Q-42
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>"</i>	



HydroCon LLC
 510 Allen St. Suite B
 Kelso, WA 98626

Project: **JH Kelly**
 Project Number: 2017-055
 Project Manager: Dave Borys

Reported:
 12/15/17 10:08

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
HC06-11 (A7L0336-01)			Matrix: Soil		Batch: 7120672			
Gasoline Range Organics	ND	---	7.54	mg/kg dry	50	12/13/17 16:49	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>96 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
HC07-11 (A7L0336-02)			Matrix: Soil		Batch: 7120672			
Gasoline Range Organics	21.3	---	6.03	mg/kg dry	50	12/13/17 17:16	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>93 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
HC08-10 (A7L0336-03)			Matrix: Soil		Batch: 7120672			
Gasoline Range Organics	ND	---	6.62	mg/kg dry	50	12/13/17 17:43	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>95 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
HC09-11 (A7L0336-04)			Matrix: Soil		Batch: 7120672			
Gasoline Range Organics	ND	---	6.68	mg/kg dry	50	12/13/17 18:10	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	1	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>96 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

Apex Laboratories



Lisa Domenighini, Client Services Manager

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HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
HC06-11 (A7L0336-01)			Matrix: Soil		Batch: 7120672			
Benzene	ND	---	0.0151	mg/kg dry	50	12/13/17 16:49	5035A/8260C	
Ethylbenzene	ND	---	0.0377	"	"	"	"	
Toluene	ND	---	0.0754	"	"	"	"	
Xylenes, total	ND	---	0.113	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 80-120 %</i>	1	"	"	
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
HC07-11 (A7L0336-02)			Matrix: Soil		Batch: 7120672			
Benzene	ND	---	0.0121	mg/kg dry	50	12/13/17 17:16	5035A/8260C	
Ethylbenzene	ND	---	0.0302	"	"	"	"	
Toluene	ND	---	0.0603	"	"	"	"	
Xylenes, total	ND	---	0.0905	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 80-120 %</i>	1	"	"	
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>103 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
HC08-10 (A7L0336-03)			Matrix: Soil		Batch: 7120672			
Benzene	ND	---	0.0132	mg/kg dry	50	12/13/17 17:43	5035A/8260C	
Ethylbenzene	ND	---	0.0331	"	"	"	"	
Toluene	ND	---	0.0662	"	"	"	"	
Xylenes, total	ND	---	0.0993	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 80-120 %</i>	1	"	"	
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
HC09-11 (A7L0336-04)			Matrix: Soil		Batch: 7120672			
Benzene	ND	---	0.0134	mg/kg dry	50	12/13/17 18:10	5035A/8260C	
Ethylbenzene	ND	---	0.0334	"	"	"	"	
Toluene	ND	---	0.0668	"	"	"	"	
Xylenes, total	ND	---	0.100	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 80-120 %</i>	1	"	"	
<i>Toluene-d8 (Surr)</i>			<i>101 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

Apex Laboratories



Lisa Domenighini, Client Services Manager

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HydroCon LLC
 510 Allen St. Suite B
 Kelso, WA 98626

Project: **JH Kelly**
 Project Number: 2017-055
 Project Manager: Dave Borys

Reported:
 12/15/17 10:08

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
HC06-11 (A7L0336-01)			Matrix: Soil		Batch: 7120668			
% Solids	72.1	---	1.00	% by Weight	1	12/14/17 08:08	EPA 8000C	
HC07-11 (A7L0336-02)			Matrix: Soil		Batch: 7120668			
% Solids	80.4	---	1.00	% by Weight	1	12/14/17 08:08	EPA 8000C	
HC08-10 (A7L0336-03)			Matrix: Soil		Batch: 7120668			
% Solids	83.8	---	1.00	% by Weight	1	12/14/17 08:08	EPA 8000C	
HC09-11 (A7L0336-04)			Matrix: Soil		Batch: 7120668			
% Solids	74.4	---	1.00	% by Weight	1	12/14/17 08:08	EPA 8000C	

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Lisa Domenighini, Client Services Manager

HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120691 - EPA 3546 (Fuels)						Soil						
Blank (7120691-BLK1)						Prepared: 12/13/17 13:44 Analyzed: 12/13/17 21:21						
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	"	"	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	"	"	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		Recovery: 102 %		Limits: 50-150 %		Dilution: 1x						
LCS (7120691-BS1)						Prepared: 12/13/17 13:44 Analyzed: 12/13/17 21:44						
NWTPH-Dx												
Diesel	113	---	25.0	mg/kg wet	1	125	---	90	76-115%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		Recovery: 104 %		Limits: 50-150 %		Dilution: 1x						
Duplicate (7120691-DUP3)						Prepared: 12/13/17 13:44 Analyzed: 12/14/17 11:53						
QC Source Sample: HC09-11 (A7L0336-04RE1)												
NWTPH-Dx												
Diesel	ND	---	52.6	mg/kg dry	2	---	ND	---	---	---	30%	
Oil	395	---	105	"	"	---	190	---	---	70	30%	F-03, Q-17
<i>Surr: o-Terphenyl (Surr)</i>		Recovery: 102 %		Limits: 50-150 %		Dilution: 2x						

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Project: **JH Kelly**
Project Number: 2017-055
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Reported:
12/15/17 10:08

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120672 - EPA 5035A						Soil						
Blank (7120672-BLK1)						Prepared: 12/13/17 08:30 Analyzed: 12/13/17 10:59						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>			<i>97 %</i>	<i>50-150 %</i>		<i>"</i>						
LCS (7120672-BS2)						Prepared: 12/13/17 08:30 Analyzed: 12/13/17 10:32						
NWTPH-Gx (MS)												
Gasoline Range Organics	25.6	---	5.00	mg/kg wet	50	25.0	---	102	80-120%	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 98 %</i>	<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>			<i>100 %</i>	<i>50-150 %</i>		<i>"</i>						
Duplicate (7120672-DUP2)						Prepared: 12/12/17 12:30 Analyzed: 12/13/17 18:37						
QC Source Sample: HC09-11 (A7L0336-04)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	7.16	mg/kg dry	50	---	ND	---	---	---	---	30%
<i>Surr: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>			<i>95 %</i>	<i>50-150 %</i>		<i>"</i>						



HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120672 - EPA 5035A						Soil						
Blank (7120672-BLK1)						Prepared: 12/13/17 08:30 Analyzed: 12/13/17 10:59						
5035A/8260C												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	---
Ethylbenzene	ND	---	0.0167	"	"	---	---	---	---	---	---	---
Toluene	ND	---	0.0333	"	"	---	---	---	---	---	---	---
Xylenes, total	ND	---	0.0500	"	"	---	---	---	---	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>98 %</i>		<i>80-120 %</i>		<i>"</i>					
LCS (7120672-BS1)						Prepared: 12/13/17 08:30 Analyzed: 12/13/17 10:05						
5035A/8260C												
Benzene	1.09	---	0.0100	mg/kg wet	50	1.00	---	109	80-120%	---	---	---
Ethylbenzene	1.07	---	0.0250	"	"	"	---	107	"	---	---	---
Toluene	1.02	---	0.0500	"	"	"	---	102	"	---	---	---
Xylenes, total	3.24	---	0.0750	"	"	3.00	---	108	"	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>Toluene-d8 (Surr)</i>			<i>102 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>		<i>80-120 %</i>		<i>"</i>					
Duplicate (7120672-DUP2)						Prepared: 12/12/17 12:30 Analyzed: 12/13/17 18:37						
QC Source Sample: HC09-11 (A7L0336-04)												
5035A/8260C												
Benzene	ND	---	0.0143	mg/kg dry	50	---	ND	---	---	---	---	30%
Ethylbenzene	ND	---	0.0358	"	"	---	ND	---	---	---	---	30%
Toluene	ND	---	0.0716	"	"	---	ND	---	---	---	---	30%
Xylenes, total	ND	---	0.107	"	"	---	ND	---	---	---	---	30%
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>Toluene-d8 (Surr)</i>			<i>101 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>98 %</i>		<i>80-120 %</i>		<i>"</i>					

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Lisa Domenighini, Client Services Manager

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HydroCon LLC 510 Allen St. Suite B Kelso, WA 98626	Project: JH Kelly Project Number: 2017-055 Project Manager: Dave Borys	Reported: 12/15/17 10:08
---	---	------------------------------------

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120668 - Total Solids (Dry Weight)						Soil						
Duplicate (7120668-DUP7)						Prepared: 12/13/17 19:23 Analyzed: 12/14/17 08:08						
QC Source Sample: HC06-11 (A7L0336-01)												
EPA 8000C												
% Solids	72.1	---	1.00	% by Weight	1	---	72.1	---	---	0.08	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.



HydroCon LLC
 510 Allen St. Suite B
 Kelso, WA 98626

Project: **JH Kelly**
 Project Number: 2017-055
 Project Manager: Dave Borys

Reported:
 12/15/17 10:08

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120691							
A7L0336-01	Soil	NWTPH-Dx	12/11/17 09:35	12/13/17 13:44	10.39g/5mL	10g/5mL	0.96
A7L0336-02	Soil	NWTPH-Dx	12/11/17 12:00	12/13/17 13:44	10.11g/5mL	10g/5mL	0.99
A7L0336-03	Soil	NWTPH-Dx	12/12/17 10:50	12/13/17 13:44	10.24g/5mL	10g/5mL	0.98
A7L0336-04RE1	Soil	NWTPH-Dx	12/12/17 12:30	12/13/17 13:44	10.21g/5mL	10g/5mL	0.98

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120672							
A7L0336-01	Soil	NWTPH-Gx (MS)	12/11/17 09:35	12/11/17 09:35	6.19g/5mL	5g/5mL	0.81
A7L0336-02	Soil	NWTPH-Gx (MS)	12/11/17 12:00	12/11/17 12:00	6.46g/5mL	5g/5mL	0.77
A7L0336-03	Soil	NWTPH-Gx (MS)	12/12/17 10:50	12/12/17 10:50	5.27g/5mL	5g/5mL	0.95
A7L0336-04	Soil	NWTPH-Gx (MS)	12/12/17 12:30	12/12/17 12:30	6.78g/5mL	5g/5mL	0.74

BTEX Compounds by EPA 8260C

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120672							
A7L0336-01	Soil	5035A/8260C	12/11/17 09:35	12/11/17 09:35	6.19g/5mL	5g/5mL	0.81
A7L0336-02	Soil	5035A/8260C	12/11/17 12:00	12/11/17 12:00	6.46g/5mL	5g/5mL	0.77
A7L0336-03	Soil	5035A/8260C	12/12/17 10:50	12/12/17 10:50	5.27g/5mL	5g/5mL	0.95
A7L0336-04	Soil	5035A/8260C	12/12/17 12:30	12/12/17 12:30	6.78g/5mL	5g/5mL	0.74

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120668							
A7L0336-01	Soil	EPA 8000C	12/11/17 09:35	12/13/17 19:23	1N/A/1N/A	1N/A/1N/A	NA
A7L0336-02	Soil	EPA 8000C	12/11/17 12:00	12/13/17 19:23	1N/A/1N/A	1N/A/1N/A	NA
A7L0336-03	Soil	EPA 8000C	12/12/17 10:50	12/13/17 19:23	1N/A/1N/A	1N/A/1N/A	NA
A7L0336-04	Soil	EPA 8000C	12/12/17 12:30	12/13/17 19:23	1N/A/1N/A	1N/A/1N/A	NA

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HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

Notes and Definitions

Qualifiers:

- F-03 The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
- Q-17 RPD between original and duplicate sample is outside of established control limits.
- Q-42 Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
- S-05 Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- *** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Lisa Domenighini, Client Services Manager

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HydroCon LLC
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Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/15/17 10:08

CHAIN OF CUSTODY

Lab # **AFLD336** of _____
COC _____

APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: HydroCon		Project Mgr: Dave Borys		Phone: 503-718-0333		Project Name: JH Kelly		Email:		Project #: 2017-055	
Address: 510 Allen St Suite B		City: Kelso WA		State: WA		Zip: 98626		Fax:		PO#	
Sampled by: RAH/BSP		Date: 12-15-17		Time: 10:30		Matrix: Soil		# OF CONTAINERS: 4		ANALYSIS REQUEST	
Site Location: OR		DATE		TIME		MATRIX		# OF CONTAINERS		<input checked="" type="checkbox"/> NWTF-HCID <input checked="" type="checkbox"/> NWTF-DX <input checked="" type="checkbox"/> NWTF-GX <input checked="" type="checkbox"/> 8260 VOCs Full List <input checked="" type="checkbox"/> 8260 RBDM VOCs <input checked="" type="checkbox"/> 8260 HVOCs <input checked="" type="checkbox"/> 8260 BTEX VOCs <input checked="" type="checkbox"/> 8270 SVOC <input checked="" type="checkbox"/> 8270 SIM PAHs <input checked="" type="checkbox"/> 8082 PCHS <input checked="" type="checkbox"/> 600 TIO <input checked="" type="checkbox"/> RCRA Metals (8) <input checked="" type="checkbox"/> TCLP Metals (8) <input checked="" type="checkbox"/> Al, Sb, As, Ba, Be, Bi, Cd, Cr, Cu, Co, Ni, Mo, Mn, Pb, Hg, Mg, Na, Ti, V, Zn <input checked="" type="checkbox"/> Se, Ag, Na, TL, Y, Zn <input checked="" type="checkbox"/> TOTAL DISS TCLP <input checked="" type="checkbox"/> 1200-COLS <input checked="" type="checkbox"/> Z-00-Z	
LAB ID #		DATE		TIME		MATRIX		# OF CONTAINERS		ANALYSIS REQUEST	
1 H200-11		12-15-17		10:30		Soil		4		<input checked="" type="checkbox"/> NWTF-HCID <input checked="" type="checkbox"/> NWTF-DX <input checked="" type="checkbox"/> NWTF-GX <input checked="" type="checkbox"/> 8260 VOCs Full List <input checked="" type="checkbox"/> 8260 RBDM VOCs <input checked="" type="checkbox"/> 8260 HVOCs <input checked="" type="checkbox"/> 8260 BTEX VOCs <input checked="" type="checkbox"/> 8270 SVOC <input checked="" type="checkbox"/> 8270 SIM PAHs <input checked="" type="checkbox"/> 8082 PCHS <input checked="" type="checkbox"/> 600 TIO <input checked="" type="checkbox"/> RCRA Metals (8) <input checked="" type="checkbox"/> TCLP Metals (8) <input checked="" type="checkbox"/> Al, Sb, As, Ba, Be, Bi, Cd, Cr, Cu, Co, Ni, Mo, Mn, Pb, Hg, Mg, Na, Ti, V, Zn <input checked="" type="checkbox"/> Se, Ag, Na, TL, Y, Zn <input checked="" type="checkbox"/> TOTAL DISS TCLP <input checked="" type="checkbox"/> 1200-COLS <input checked="" type="checkbox"/> Z-00-Z	
2 H207-11		12-17-17		10:30		Soil		4		<input checked="" type="checkbox"/> NWTF-HCID <input checked="" type="checkbox"/> NWTF-DX <input checked="" type="checkbox"/> NWTF-GX <input checked="" type="checkbox"/> 8260 VOCs Full List <input checked="" type="checkbox"/> 8260 RBDM VOCs <input checked="" type="checkbox"/> 8260 HVOCs <input checked="" type="checkbox"/> 8260 BTEX VOCs <input checked="" type="checkbox"/> 8270 SVOC <input checked="" type="checkbox"/> 8270 SIM PAHs <input checked="" type="checkbox"/> 8082 PCHS <input checked="" type="checkbox"/> 600 TIO <input checked="" type="checkbox"/> RCRA Metals (8) <input checked="" type="checkbox"/> TCLP Metals (8) <input checked="" type="checkbox"/> Al, Sb, As, Ba, Be, Bi, Cd, Cr, Cu, Co, Ni, Mo, Mn, Pb, Hg, Mg, Na, Ti, V, Zn <input checked="" type="checkbox"/> Se, Ag, Na, TL, Y, Zn <input checked="" type="checkbox"/> TOTAL DISS TCLP <input checked="" type="checkbox"/> 1200-COLS <input checked="" type="checkbox"/> Z-00-Z	
3 H108-10		12-17-17		10:30		Soil		3		<input checked="" type="checkbox"/> NWTF-HCID <input checked="" type="checkbox"/> NWTF-DX <input checked="" type="checkbox"/> NWTF-GX <input checked="" type="checkbox"/> 8260 VOCs Full List <input checked="" type="checkbox"/> 8260 RBDM VOCs <input checked="" type="checkbox"/> 8260 HVOCs <input checked="" type="checkbox"/> 8260 BTEX VOCs <input checked="" type="checkbox"/> 8270 SVOC <input checked="" type="checkbox"/> 8270 SIM PAHs <input checked="" type="checkbox"/> 8082 PCHS <input checked="" type="checkbox"/> 600 TIO <input checked="" type="checkbox"/> RCRA Metals (8) <input checked="" type="checkbox"/> TCLP Metals (8) <input checked="" type="checkbox"/> Al, Sb, As, Ba, Be, Bi, Cd, Cr, Cu, Co, Ni, Mo, Mn, Pb, Hg, Mg, Na, Ti, V, Zn <input checked="" type="checkbox"/> Se, Ag, Na, TL, Y, Zn <input checked="" type="checkbox"/> TOTAL DISS TCLP <input checked="" type="checkbox"/> 1200-COLS <input checked="" type="checkbox"/> Z-00-Z	
4 H109-11		12-17-17		10:30		Soil		3		<input checked="" type="checkbox"/> NWTF-HCID <input checked="" type="checkbox"/> NWTF-DX <input checked="" type="checkbox"/> NWTF-GX <input checked="" type="checkbox"/> 8260 VOCs Full List <input checked="" type="checkbox"/> 8260 RBDM VOCs <input checked="" type="checkbox"/> 8260 HVOCs <input checked="" type="checkbox"/> 8260 BTEX VOCs <input checked="" type="checkbox"/> 8270 SVOC <input checked="" type="checkbox"/> 8270 SIM PAHs <input checked="" type="checkbox"/> 8082 PCHS <input checked="" type="checkbox"/> 600 TIO <input checked="" type="checkbox"/> RCRA Metals (8) <input checked="" type="checkbox"/> TCLP Metals (8) <input checked="" type="checkbox"/> Al, Sb, As, Ba, Be, Bi, Cd, Cr, Cu, Co, Ni, Mo, Mn, Pb, Hg, Mg, Na, Ti, V, Zn <input checked="" type="checkbox"/> Se, Ag, Na, TL, Y, Zn <input checked="" type="checkbox"/> TOTAL DISS TCLP <input checked="" type="checkbox"/> 1200-COLS <input checked="" type="checkbox"/> Z-00-Z	
5											
6											
7											
8											
9											
10											
Normal Turn Around Time (TAT) = 10 Business Days		<input checked="" type="radio"/> YES <input type="radio"/> NO		1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____		TAT Requested (circle)		SPECIAL INSTRUCTIONS:			
REINQUISHED BY:		RECEIVED BY:		SAMPLES ARE HELD FOR 30 DAYS							
Signature: [Signature]		Signature: [Signature]		Date: 12-15-17		Date: 12-17		Date: 12-17		Date: _____	
Printed Name: Bryan Borys		Printed Name: [Name]		Time: _____		Time: 10:30		Time: 10:30		Time: _____	
Company: HydroCon		Company: Apex Labs		Company: Apex Labs		Company: Apex Labs		Company: _____		Company: _____	

Apex Laboratories

Lisa Domenighini

Lisa Domenighini, Client Services Manager

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HydroCon LLC 510 Allen St. Suite B Kelso, WA 98626	Project: JH Kelly Project Number: 2017-055 Project Manager: Dave Borys	Reported: 12/15/17 10:08
---	---	------------------------------------

APEX LABS COOLER RECEIPT FORM

Client: Hydrocon Element WO#: A7 L0336

Project/Project #: 3H Kelly / 2017-055

Delivery info:

Date/Time Received: 12-13-17 @ 1046 By: MJK

Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Inspected by: MJK : 12-13-17 @ 1215

Chain of Custody Included? Yes No Custody Seals? Yes No

Signed/Dated by Client? Yes No

Signed/Dated by Apex? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	<u>3.2</u>						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	<u>good</u>						

Cooler out of temp? (Y/N) Possible reason why: _____
 If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MJK : 12-13-17 @ 12:31

All Samples Intact? Yes No Comments: _____

Bottle Labels/COCs agree? Yes No Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes No Comments: _____

Do VOA Vials have Visible Headspace? Yes No NA

Comments: _____

Water Samples: pH Checked and Appropriate (except VOAs): Yes No NA

Comments: _____

Additional Information: _____

Labeled by: _____ Witness: _____ Cooler Inspected by: _____ See Project Contact Form: Y



Lisa A. Domenighini

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, December 26, 2017

Dave Borys
HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

RE: JH Kelly / 2017-055

Enclosed are the results of analyses for work order A7L0558, which was received by the laboratory on 12/19/2017 at 11:03:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



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Lisa Domenighini, Client Services Manager

HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/26/17 10:58

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01-W	A7L0558-01	Water	12/18/17 13:35	12/19/17 11:03
MW02-W	A7L0558-02	Water	12/18/17 14:20	12/19/17 11:03
MW03-W	A7L0558-03	Water	12/18/17 15:05	12/19/17 11:03
MW04-W	A7L0558-04	Water	12/18/17 15:50	12/19/17 11:03

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Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/26/17 10:58

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
MW01-W (A7L0558-01)			Matrix: Water		Batch: 7120927			
Diesel	851	---	75.5	ug/L	1	12/21/17 01:48	NWTPH-Dx	F-11
Oil	ND	---	151	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 82 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW02-W (A7L0558-02)			Matrix: Water		Batch: 7120927			
Diesel	375	---	74.8	ug/L	1	12/21/17 02:09	NWTPH-Dx	F-11
Oil	ND	---	150	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 81 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW03-W (A7L0558-03)			Matrix: Water		Batch: 7120927			
Diesel	416	---	74.8	ug/L	1	12/21/17 03:53	NWTPH-Dx	F-11
Oil	ND	---	150	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 79 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW04-W (A7L0558-04)			Matrix: Water		Batch: 7120927			
Diesel	ND	---	74.8	ug/L	1	12/21/17 04:14	NWTPH-Dx	
Oil	179	---	150	"	"	"	"	
<i>Surrogate: o-Terphenyl (Surr)</i>			<i>Recovery: 93 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Project: JH Kelly
 Project Number: 2017-055
 Project Manager: Dave Borys

Reported:
 12/26/17 10:58

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
MW01-W (A7L0558-01)			Matrix: Water		Batch: 7120846			
Gasoline Range Organics	ND	---	100	ug/L	1	12/19/17 18:35	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 105 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>107 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW02-W (A7L0558-02)			Matrix: Water		Batch: 7120846			
Gasoline Range Organics	117	---	100	ug/L	1	12/19/17 19:03	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 104 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>105 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW03-W (A7L0558-03)			Matrix: Water		Batch: 7120846			
Gasoline Range Organics	ND	---	100	ug/L	1	12/19/17 19:30	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 102 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>103 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW04-W (A7L0558-04)			Matrix: Water		Batch: 7120846			
Gasoline Range Organics	ND	---	100	ug/L	1	12/19/17 20:24	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 103 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>104 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/26/17 10:58

ANALYTICAL SAMPLE RESULTS

RBDM Compounds (BTEX+) by EPA 8260C

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
MW01-W (A7L0558-01)			Matrix: Water		Batch: 7120846			
Benzene	ND	---	0.200	ug/L	1	12/19/17 18:35	EPA 8260C	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
Toluene	ND	---	1.00	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 105 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
MW02-W (A7L0558-02)			Matrix: Water		Batch: 7120846			
Benzene	ND	---	0.200	ug/L	1	12/19/17 19:03	EPA 8260C	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Methyl tert-butyl ether (MTBE)	3.21	---	1.00	"	"	"	"	
Toluene	ND	---	1.00	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 103 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
MW03-W (A7L0558-03)			Matrix: Water		Batch: 7120846			
Benzene	ND	---	0.200	ug/L	1	12/19/17 19:30	EPA 8260C	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
Toluene	ND	---	1.00	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>100 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
MW04-W (A7L0558-04)			Matrix: Water		Batch: 7120846			
Benzene	ND	---	0.200	ug/L	1	12/19/17 20:24	EPA 8260C	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	"	"	
Toluene	ND	---	1.00	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

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Lisa Domenighini, Client Services Manager

HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/26/17 10:58

ANALYTICAL SAMPLE RESULTS

RBDM Compounds (BTEX+) by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
MW04-W (A7L0558-04)			Matrix: Water		Batch: 7120846			
<i>Surrogate: 4-Bromofluorobenzene (Surr)</i>			<i>Recovery: 101 %</i>	<i>Limits: 80-120 %</i>	1	"	EPA 8260C	

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 Project Manager: Dave Borys

Reported:
 12/26/17 10:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120927 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (7120927-BLK1)						Prepared: 12/20/17 14:03 Analyzed: 12/20/17 22:41						
NWTPH-Dx												
Diesel	ND	---	72.7	ug/L	1	---	---	---	---	---	---	
Oil	ND	---	145	"	"	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>			Recovery: 86 %		Limits: 50-150 %		Dilution: 1x					
LCS (7120927-BS1)						Prepared: 12/20/17 14:03 Analyzed: 12/20/17 23:01						
NWTPH-Dx												
Diesel	384	---	80.0	ug/L	1	500	---	77	52-120%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>			Recovery: 87 %		Limits: 50-150 %		Dilution: 1x					
LCS Dup (7120927-BSD1)						Prepared: 12/20/17 14:03 Analyzed: 12/20/17 23:22						
NWTPH-Dx												
Diesel	368	---	80.0	ug/L	1	500	---	74	52-120%	4	20%	Q-19
<i>Surr: o-Terphenyl (Surr)</i>			Recovery: 86 %		Limits: 50-150 %		Dilution: 1x					

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Reported:
12/26/17 10:58

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120846 - EPA 5030B						Water						
Blank (7120846-BLK1)						Prepared: 12/19/17 09:03 Analyzed: 12/19/17 10:25						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	100	ug/L	1	---	---	---	---	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (7120846-BS2)						Prepared: 12/19/17 09:03 Analyzed: 12/19/17 09:58						
NWTPH-Gx (MS)												
Gasoline Range Organics	532	---	100	ug/L	1	500	---	106	80-120%	---	---	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (7120846-DUP2)						Prepared: 12/19/17 17:48 Analyzed: 12/19/17 19:57						
QC Source Sample: MW03-W (A7L0558-03)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	100	ug/L	1	---	ND	---	---	---	30%	---
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>"</i>						



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Reported:
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QUALITY CONTROL (QC) SAMPLE RESULTS

RBDM Compounds (BTEX+) by EPA 8260C

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120846 - EPA 5030B												
Water												
Blank (7120846-BLK1)			Prepared: 12/19/17 09:03 Analyzed: 12/19/17 10:25									
EPA 8260C												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	---
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	---
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	---	---	---	---	---	---
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	---
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>101 %</i>		<i>80-120 %</i>		<i>"</i>					
LCS (7120846-BS1)			Prepared: 12/19/17 09:03 Analyzed: 12/19/17 09:30									
EPA 8260C												
Benzene	19.1	---	0.200	ug/L	1	20.0	---	95	80-120%	---	---	---
Ethylbenzene	20.0	---	0.500	"	"	"	---	100	"	---	---	---
Methyl tert-butyl ether (MTBE)	19.4	---	1.00	"	"	"	---	97	"	---	---	---
Toluene	19.7	---	1.00	"	"	"	---	99	"	---	---	---
Xylenes, total	61.9	---	1.50	"	"	60.0	---	103	"	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 97 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>Toluene-d8 (Surr)</i>			<i>100 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>		<i>80-120 %</i>		<i>"</i>					
Duplicate (7120846-DUP2)			Prepared: 12/19/17 17:48 Analyzed: 12/19/17 19:57									
QC Source Sample: MW03-W (A7L0558-03)												
EPA 8260C												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	---	30%
Ethylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	---	30%
Methyl tert-butyl ether (MTBE)	ND	---	1.00	"	"	---	ND	---	---	---	---	30%
Toluene	ND	---	1.00	"	"	---	ND	---	---	---	---	30%
Xylenes, total	ND	---	1.50	"	"	---	ND	---	---	---	---	30%
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>					
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>		<i>80-120 %</i>		<i>"</i>					
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>		<i>80-120 %</i>		<i>"</i>					

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Project: **JH Kelly**
 Project Number: 2017-055
 Project Manager: Dave Borys

Reported:
 12/26/17 10:58

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120927							
A7L0558-01	Water	NWTPH-Dx	12/18/17 13:35	12/20/17 14:03	1060mL/2mL	1000mL/2mL	0.94
A7L0558-02	Water	NWTPH-Dx	12/18/17 14:20	12/20/17 14:03	1070mL/2mL	1000mL/2mL	0.94
A7L0558-03	Water	NWTPH-Dx	12/18/17 15:05	12/20/17 14:03	1070mL/2mL	1000mL/2mL	0.94
A7L0558-04	Water	NWTPH-Dx	12/18/17 15:50	12/20/17 14:03	1070mL/2mL	1000mL/2mL	0.94

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120846							
A7L0558-01	Water	NWTPH-Gx (MS)	12/18/17 13:35	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00
A7L0558-02	Water	NWTPH-Gx (MS)	12/18/17 14:20	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00
A7L0558-03	Water	NWTPH-Gx (MS)	12/18/17 15:05	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00
A7L0558-04	Water	NWTPH-Gx (MS)	12/18/17 15:50	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00

RBDM Compounds (BTEX+) by EPA 8260C

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120846							
A7L0558-01	Water	EPA 8260C	12/18/17 13:35	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00
A7L0558-02	Water	EPA 8260C	12/18/17 14:20	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00
A7L0558-03	Water	EPA 8260C	12/18/17 15:05	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00
A7L0558-04	Water	EPA 8260C	12/18/17 15:50	12/19/17 17:48	5mL/5mL	5mL/5mL	1.00

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Project: **JH Kelly**
Project Number: 2017-055
Project Manager: Dave Borys

Reported:
12/26/17 10:58

Notes and Definitions

Qualifiers:

- F-11 The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
- Q-19 Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.

Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to 1/2 the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- *** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Lisa Domenighini, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

HydroCon LLC 510 Allen St. Suite B Kelso, WA 98626	Project: JH Kelly Project Number: 2017-055 Project Manager: Dave Borys	Reported: 12/26/17 10:58
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APEX LABS COOLER RECEIPT FORM

Client: Hydro Con Element WO#: A7105558
 Project/Project #: JH Kelly / 2017-055

Delivery info:

Date/Time Received: 12/19/17 @ 1103 By: CR
 Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Inspected by: CR : 12/19/17 @ 1448

Chain of Custody Included? Yes No Custody Seals? Yes No
 Signed/Dated by Client? Yes No
 Signed/Dated by Apex? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	<u>0.0</u>						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gal/Real/Other)							

Condition: good
 Cooler out of temp? (Y/N) Possible reason why:
 If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: [Signature] : 12/19/17 @ 1130

All Samples Intact? Yes No Comments: _____

Bottle Labels/COCs agree? Yes No Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes No Comments: _____

Do VOA Vials have Visible Headspace? Yes No NA

Comments: _____

Water Samples: pH Checked and Appropriate (except VOAs): Yes No NA

Comments: _____

Additional Information: _____

Labeled by: [Signature] Witness: [Signature] Cooler Inspected by: [Signature] See Project Contact Form: Y

Lisa A. Domenighini