DRAFT Additional Interim Action Addendum #2 Report

Coleman Oil Company Facility
3 East Chehalis Street
Wenatchee, Washington

Prepared for:
Coleman Oil Company
335 Mill Road
Lewiston, Idaho 83501

December 11, 2018

Prepared by:

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HydroCon Project No: 2017-074

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Acronyms

AIA	Additional Interim Action
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
COC	Chemical of Concern
Coleman Oil	Coleman Oil Company
CUL	cleanup level
DRPH	diesel range petroleum hydrocarbons
Ecology	Washington Department of Ecology
EDB	1,2-dibromoethane
EDC	1,2-dichloroethane
EPA	Environmental Protection Agency
gpm	gallons per minute
GRPH	gasoline range petroleum hydrocarbons
HydroCon	HydroCon Environmental LLC
µg/L	micrograms per liter
mg/Kg	milligrams per Kilogram
LCS/LCSD	Laboratory Control Sample/ Laboratory Control Sample Duplicates
LNAPL	light nonaqueous-phase liquid
MDL	method detection limit
MRL	method reporting limit
MTCA	Model Toxics Control Act
ORPH	oil range petroleum hydrocarbons
OWS	oil water separator
PID	photoionization detector
ROW	right of way
SAP	Sampling and Analysis Plan

1.0 INTRODUCTION

HydroCon Environmental, LLC (HydroCon), has prepared this Additional Interim Action (AIA) Addendum #2 report on behalf of Coleman Oil Company (Coleman Oil) to install additional borings and wells to further evaluate remedial options.

This addendum has been prepared to supplement the requirements of Exhibit B – Scope of Work and Schedule of Agreed Order No. DE 15389 entered into by Coleman Oil Company, LLC; Coleman, Services IV, LLC; and the Washington State Department of Ecology (Ecology) with an effective date of September 18, 2017 (Agreed Order). The Agreed Order is a continuation of previous and ongoing significant oil spill response activities and removal actions conducted under the Administrative Order on Consent for Removal Activities issued by the U. S. Environmental Protection Agency (EPA) on May 5, 2017 (EPA Docket No. CWA-10-2017-0114).

The site, as defined under the Washington State Model Toxics Control Act Cleanup Regulation (MTCA), Chapter 173-340 of the Washington Administrative Code (WAC §173-340-200), comprises the portion of the Coleman Oil Property and adjacent properties where hazardous substances have come to be located in soil, groundwater, and surface water at concentrations exceeding applicable cleanup levels (herein referred to as the Site) as a result of releases at the Coleman Oil Property.

HydroCon prepared an AIA Addendum #2 Work Plan (July 26, 2018) to install additional monitoring wells to further evaluate remedial options in the area of the sheen discharge area on the Columbia River. Supporting documentation is found in the attachments to the Supplemental Remedial Investigation (SRI) Work Plan (HydroCon 2018a) and includes Standard Operating Procedures (SOPs) and field forms that will be used during the investigation.

2.0 BACKGROUND INFORMATION

The following section provides a summary of the Site location and description, geologic setting, historical land use, environmental history, and contaminants and media of concern at the Site. Most of the information provided below is summarized from the SRI Work Plan (HydroCon 2018a) and the Draft SRI Report (HydroCon 2018b).

2.1 Site Description

The Site is located at 3 Chehalis Street in Wenatchee, Washington. The Site is located nearly adjacent to the west side of the Columbia River. Land use near the Site is primarily industrial (Figure 1).

2.2 Site History

This section provides a brief Site history, focusing on the discovery of a release of diesel in March 2017. Additional site history is documented in the SRI Report.

The Site currently operated by Coleman Oil has been in operation as a bulk fuel facility since 1921. Coleman Services IV, LLC purchased the property in January 2007.

A petroleum sheen was discovered on the west side of the Columbia River approximately 300 feet north of the Site on March 17, 2017. Subsequent pipeline tightness testing revealed that two underground pipelines could not hold pressure and review of Coleman Oil inventory records indicated that the release was most likely from the R99 renewable diesel fuel line.

Subsequent testing included the installation of groundwater monitoring wells, soil borings, and test pits in different phases between March and September 2017 by Farallon (2017) and March and April 2018 by HydroCon (2018b) (Figure 2). This testing indicated soil and groundwater had been impacted at concentrations above MTCA Method A cleanup levels, including impacts to soil and groundwater and sediment near the location of the sheen.

2.3 Remedial Measures

Several remedial measures have taken place at the site since the discovery of the release.

- Pads and booms have been placed on the Columbia River in the observed sheen discharge area to recover product since discovery of the release. This practice continues today.
- A remedial excavation was performed on the Coleman Oil facility near the point of release. Approximately 741 tons of petroleum contaminated soil was removed for offsite disposal.
- Sumps were placed in the remedial excavation backfill. Pumps were placed in the sumps to recover product and maintain a cone of depression to minimize product migration. Effluent from

the sumps was routed to an oil/water separator and settling tanks prior to treatment using granular activated carbon (GAC). The treated water was disposed under permit into the City of Wenatchee's sanitary sewer system.

- Prior to this investigation a total of 29 monitoring and recovery wells (MW-1 through MW23, MW01S, MW03S, BH-1 through BH-3, and RW-1) had been installed at the site. Product recovery via skimming using a peristaltic pump and new tubing and/or passive recovery using hydrophobic socks has taken place. An additional nine new monitoring wells (MW24 through MW32) were installed during the work described in this report.
- Product recovery pumps were installed in three wells with persistent measurable LNAPL (MW-9, MW-10, and BH-1). These three well were connected with underground piping for pressurized air to operate the pumps, conduit for electrical control and effluent piping to collect the recovered groundwater and product. The recovered groundwater and product from these wells are routed through three oil/water separators, into storage tanks and then through filtration and GAC into storage tanks. The treated water is analyzed prior to discharge in batches under an agreement between Coleman Oil and City of Wenatchee into the city's sanitary sewer system.

As of early June 2018, a total of 404.30 gallons of R99 diesel had been recovered (HydroCon 2018b).

2.4 Geologic & Hydrogeologic Setting

The Site is located in the Wenatchee Valley approximately 100 feet west south-west of the Columbia River at an elevation of approximately 660 feet above mean sea level (Figure 1). The topography of the Site slopes very gently to the north north-west parallel to the Columbia River.

The soils beneath the Site are consistent with ice-age alluvial deposits underlain by the Chumstick Formation bedrock. The alluvium consists primarily of silt and silty sand, with layers of clay, sand, gravel and cobbles. The thickness of the alluvial deposits ranges from 6 to 31.5 feet. Boring logs and drilling observations indicate that a more massive, well cemented sandstone layer is beneath thin layers of mudstone, shale and sandstone and the sandstone appears to be acting as an aquitard in this area. The groundwater level is within a few feet of the top of the Chumstick Formation and always above the sandstone layer. An exception is at MW22 where the groundwater is approximately 15 feet above the top of the Chumstick formation. This area has been disturbed by previous excavation and has been backfilled with construction and other debris.

Groundwater flow is generally parallel with the top of the Chumstick formation. The groundwater flow direction and the dip of the sandstone surface are both to the north, northeast except in the region between the Site and the Columbia River where both are more to the east.

2.5 Hydraulic Testing

Hydraulic testing of the aquifer beneath the site has been conducted on two occasions and is briefly summarized here.

Six wells were subjected to step-drawdown testing in February 2018 (HydroCon 2018c). Three wells (RW-1, BH-2, and BH-3) could not sustain the initial step pumping rate of 0.25 gallons per minute (gpm) and dewatered after pumping approximately the amount of water stored in the well screen and surrounding sand pack. Wells BH-1, MW-9, and MW-10 sustained step flow rates of between 2.0 and 2.5 gpm before water levels reached target elevations. Drawdown was not observed in any nearby monitoring wells during the six step-drawdown tests. Analysis of the drawdown data indicated that at a pumping rate of 1.75 gpm the three wells would produce approximately 3.5 feet of drawdown in the aquifer adjacent to the pumping well and the cone of influence would extend out to approximately 100 feet as defined by a drawdown of 0.1 feet.

Slug testing or falling head testing was performed on May 21, 2018 to observe relative flow rates of select wells on the Coleman Oil property in an attempt to better understand contaminant flow across the Site. Slug testing was performed at MW-7, MW-8, MW-9, MW-11, MW13, MW14, MW16, MW17, MW19, MW20, MW22, and MW23.

A falling-head test was conducted by rapidly raising the water level with a 3-inch diameter by 16-inch long metal slug in the control well and subsequently measuring the falling water level. The results of the slug tests show that MW-6, MW-11, MW17 and MW22 had high flow rates; MW-8, MW14, MW16, MW20 and MW23 had medium flow rates; and MW-7, MW13, MW19, and MW21 had low flow rates. The relative flow rates and volume of product recovery through early June 2018 are shown on Figure 3. The figure also includes relative flow rates for the new wells as discussed in Section 6. As can be seen, relative flow rates are highly variable across the site; however, there is a good correlation between wells with high flow rates and high product recovery.

Based on the testing described above, pumps were installed at monitoring wells MW-9, MW-10, and BH-1. With the exception of minor equipment problems, the wells have been in operation since May 5, 2018, however, they only operate when water is at the level of the pump. When the pumps are activated, they pump at a rate of approximately 2 gpm as determined by the hydraulic testing. As such, the pumps achieve the goal of maintaining water levels at target depths and thereby reducing migration to the river.

2.6 Contaminant Distribution

The results of the SRI [HydroCon 2018b] provided significant clarification to the understanding of contaminant distribution at the Site. Diesel and gasoline range hydrocarbons exceeding MTCA Method A cleanup levels are present in subsurface soil, groundwater, shoreline soils, and shoreline sediments. Diesel in groundwater extends from the release area to the north-northeast to the area between MW21 and MW22, a distance of 550 feet. Soil is impacted by diesel transported by groundwater. Shoreline soil and shoreline sediments are impacted by groundwater discharging to the Columbia River approximately 400 feet north of the release area. Gasoline range hydrocarbons extend the area of impact south of the release area (MW13 and MW01S) and are likely due to historic releases not associated with the R99 Renewable diesel release. Gasoline range hydrocarbons are also present

in soil and groundwater downgradient of the R99 Renewable diesel release area. Figure 4 shows the current extent of contamination.

3.0 INTERIM ACTION

This section describes the coordination and implementation of the fieldwork performed during the AIA Addendum #2 Investigation. Work was performed in general accordance to the approved AIA Addendum #2 Work Plan (HydroCon 2018c) and SRI SAP and QAPP (HydroCon 2018a).

3.1 Purpose and Scope

Results of the SRI have revealed that LNAPL migrates downgradient along the bedrock (Chumstick Formation) that underlies the site. The Chumstick Formation is locally fractured and channelized. LNAPL migrates through the fractures and channels and locally discharges into the river. The intent of this work is to find some of these preferential pathways by the drilling process and install wells that can serve as recovery points to intercept and remove as much of the remaining LNAPL as possible to stop or greatly diminish the discharge into the Columbia River.

A feasibility study may be prepared at a later time toward development of a more permanent solution. However, if successful, this action has the potential to serve as the preferred remedial solution for the remediation of R99 Biodiesel.

3.2 Objectives and Approach

The objective of this AIA was to further evaluate hydraulic conditions in the sheen discharge area to assist in evaluating remedial options and to provide additional product recovery points in the known sheen discharge area for the reduction of seepage into the river.

Eight new four-inch diameter wells (MW24 through MW31) were installed between FB-7 and MW21 to create a line of 14 wells near the Columbia River at intervals of approximately 50 feet. One new four-inch diameter well (MW32) was installed in between MW16 and MW17 to further assess contaminant migration pathway under Chehalis Street and provide a line of wells to recover product. Two existing wells (MW-9 and MW-10) were deepened, constructed with four-inch casing and renamed MW09R and MW10R, respectively. Following well installation and development, hydraulic testing was conducted to determine flow rates to assess which wells could be used to maintain water levels at summertime levels in these areas of the Site. The results of the hydraulic testing were provided to the engineering staff to prepare the expanded remediation system design.

3.3 Permits

The City of Wenatchee has jurisdiction of the public right-of-way along Chehalis Street and South Worthen Street. A right-of-way excavation permit RW-EXCV-18-017 and a revocable long term temporary use of right-of-way RW-TEMP-18-01 were obtained for activities conducted in the City of Wenatchee right-of-way. A traffic control plan was developed and executed for drilling the right-of-way.

3.4 Health and Safety Plan

HydroCon updated the 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, hearing protection, protective gloves, and protective boots.

3.5 Underground Utility Locates

Prior to the commencement of the subsurface activities, a public utility notification was requested through the Washington One Call Service. Locate ticket number 18324780 was refreshed with ticket number 18104874.

4.0 FIELDWORK

4.1 Soil Borings

From August 6th to August 17th, 2018, a total of 9 new monitoring wells (MW24 through MW32) were installed. Two existing wells (MW-9 and MW-10) were deepened and completed as 4-inch diameter monitoring wells and were renamed MW09R and MW10R, respectively. All boreholes were advanced to a depth equal to the average elevation of the Columbia River (approximately 621 ft amsl) plus 10 feet (depths of 35 to 40 feet). Locations are shown on Figure 2. Borehole logs are included in Appendix A.

Soil borings and groundwater monitoring wells were advanced using the Sonic drilling method described in further detail in the Sampling and Analysis Plan (SAP) attached to the SRI Work Plan (HydroCon 2018a). HydroCon has utilized the sonic drilling method for every boring drilled under our supervision (MW12 through MW32, MW01S, MW03S, MW09R, and MW10R). This method was selected due to the high quality of soil cores produced and the excellent sample recovery compared to the air rotary method used by the previous consulting firm.

Sonic drilling was accomplished by advancing a hollow drill rod for the first 10 feet, followed by advancing an override casing over the drill cuttings. A sonic casing was then driven to override the core barrel, resulting in a continuously cased borehole. Soil within the core barrel was then extruded in a new plastic sleeve which was observed by the geologist. This process was repeated to the target depth of the soil boring/monitoring well. Upon completion, a monitoring well was installed.

Each sample core was inspected for lithologic composition, presence of water, and field screened for the presence of petroleum hydrocarbons (i.e., staining, hydrocarbon odor and organic vapors). The total organic vapor concentration of each sample was measured using a PID. The PID was calibrated before use at the Site to a test gas standard consisting of 100 parts per million (ppm) isobutylene. 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. Because several factors can affect PID readings (e.g. moisture, temperature, and background conditions), HydroCon has determined that a value of 2 ppm or greater may indicate the presence of organic vapors originating from contaminants at the Site. Boring logs detailing the lithology, field screening results, and sample depths were prepared for each boring. Selected soil samples (up to 5 samples per boring) were submitted to the laboratory based on sampling objectives (i.e., depth and soil type) and field screening results.

The selected soil samples were removed from the plastic sleeve 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 (utilizing EPA Method 5035A field preservation) and immediately placed in an ice-filled cooler along with chain-of-custody documentation for shipment to Apex Laboratory in Tigard, Oregon.

All drilling and sampling tools were decontaminated between boring locations using a hot water pressure washer. All investigation–derived waste generated during purging and decontamination were placed in labeled 55-gallon drums and transported to the onsite remediation system for treatment.

4.2 Well Deepening

Existing monitoring wells MW-9 and MW-10 were overdrilled using the sonic drilling method. Monitoring well BH-1 could not be overdrilled due to overhead constraints (trees) and safe working space issues. Monitoring wells MW-9 and MW-10 were removed by advancing six inch diameter steel drilling casing over the entire length of the existing well. Following the advancement of the six inch casing an eight inch steel casing was advanced to the total depth of the existing well. Once the eight inch casing was set the six inch casing was removed along with the former well material. Once the PVC well material was removed, a core barrel sampler was used to clean out remaining well materials from the borehole. When the boring was clean of debris the boring was advanced and sampled to the new design depth using the same drilling techniques used to advance a new boring. The wells were completed as 4-inch diameter monitoring wells using the same well construction methodology as the newly installed wells. Well construction details are provided in Table 1 and on the attached boring logs.

4.3 Soil Sampling

HydroCon submitted a minimum of three soil samples per boring to the laboratory based on field screening results, lithologic composition, and depth. One sample was collected from the deepened MW09R and MW10R. The selected soil samples were removed from the soil cores produced by the sonic drilling method using a new pair of disposable gloves and placed directly into labeled laboratory prepared jars and sealed with Teflon-lined lids (VOAs utilizing 5035A field preservation for GRPH and volatiles) and immediately placed in an ice filled cooler along with chain-of-custody documentation for shipment to APEX laboratory in Tigard, Oregon.

Soil samples were analyzed by one or all of the following laboratory methods:

- DRPH and ORPH by Northwest Method NWTPH-Dx
- GRPH by Northwest Method NWTPH-Gx
- BTEX and VOCs by EPA Method 8260C

4.4 Monitoring Well Installation

Groundwater monitoring wells were installed in each of the new borings. Two wells (MW-9 and MW-10) were deepened, constructed with larger diameter well material and renamed MW09R and MW10R, respectively. The following sections describe methods for installation, development, surveying, and groundwater sampling.

4.4.1 Well Installation

Each boring was completed as a 4-inch diameter PVC monitoring well. The wells were constructed with variable lengths (10 to 25 feet) of 0.010-inch slotted PVC well screen and a bottom slip cap. Stainless steel centralizers were installed on the well string (one near the sump section, one immediately above the well screen, and then additional centralizers in approximate 10 foot intervals) so that an even filter pack and seal could be placed around the well. Clean 10-20 graded silica sand was used as a filter pack in the annular space. The wells were surged by the drilling contractor during sand pack installation using a clean surge block. The filter pack was placed at the desired depth interval and then the well was surged. Once no more settlement in the sand pack was observed the drilling contractors placed additional sand in the annulus to the desired depth. Hydrated bentonite was used as a seal. The bentonite was placed from the top of the sand pack to approximately 1 foot below the surface. A traffic grade flush monument was cemented into placed on top of each well. Monitoring well construction details are documented in the boring logs and summarized on Table 1.

4.4.2 Well Development

The monitoring wells were developed by 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 each well. The wells were then pumped using new LDPE tubing attached to a clean submersible impeller pump. This process was repeated until no further improvement in water clarity was observed. A minimum of ten casing volumes were removed from each well. Well development details are documented on *Well Development Forms* which are included in Appendix B.

4.5 Surveying

Elandsen Inc. performed the surveying at the site. HydroCon requested that the elevation of the top of the PVC well casing at the scribed reference mark (north side of well) along with the ground surface be surveyed at each well. The vertical and horizontal coordinates of the wells were surveyed relative to established datums in the area. The horizontal coordinates are relative to the North American Datum, 1983 (NAD83) and the vertical coordinates are relative to the North American Vertical Datum, 1988 (NAVD88).

The top of the casing elevation of each monitoring well was surveyed and used to calculate the groundwater surface elevation at each respective well. The survey data is included on the boring logs and Table 1.

4.6 Management of Investigation Derived Waste

Soil from drill cuttings and water generated during drilling, decontamination, well development and groundwater sampling were placed in separate labeled 55-gallon drums. The drums were staged at the Site pending waste profiling. Water generated from well development and groundwater sampling was temporarily contained in labeled drums and transported to the water treatment area. Water generated by the drilling contractor (from pressure washing/decontamination) was temporarily contained in their utility trailer and was emptied on a daily basis during the drilling program. All water was pumped into the site's water treatment system for later discharge, under an agreement with the City, into the City of Wenatchee's sanitary sewer system. The 8 drums of soil that were generated during drilling activities were disposed of at the Wenatchee Waste Management regional facility under the existing Coleman oil petroleum contaminated soil waste profile.

5.0 RESULTS OF INVESTIGATION

5.1 Subsurface Conditions

The portion of the subject Site and adjacent roadways where drilling was completed are paved with asphalt that is approximately 3 to 5 inches thick.

The soil beneath the surface includes alluvial deposits consisting primarily of sand, silt, sandy gravel, and gravelly sand. Boulders up to 4 feet in diameter were excavated during trenching activities conducted at the site in 2017. Alluvial deposits were observed from ground surface to a maximum depth of 22 feet bgs at MW31. Generally, the alluvial deposits increase in thickness in the north to northeasterly direction.

The Chumstick Formation is present beneath the alluvial deposits at depths ranging from 14 to 22 feet. The formation consists of sandstone, siltstone, and mudstone. Shaley sandstone and shale with thin interbedding of biotite and organic matter was observed in borings and appears to be consistent with the Nahahum Canyon Unit. The top of the Chumstick Formation encountered at the Site was typically a 1 to 8 foot thick layer of mudstone underlain by 1 to 6 foot thick layers or sandstone, siltstone and mudstone. The upper portions of the Chumstick has been eroded and weathered. The mudstone is commonly friable and the sandstone is soft and weakly cemented in the upper portion of the Formation. The underlying mudstone and sandstone appear more massive with the sandstone becoming very dense and strongly cemented with depth (exhibiting a cored concrete appearance in the sample cores). This material appears to be acting as an aquitard.

Petroleum contamination was observed using field screening techniques in the borings at similar depths as the soils observed in borings drilled along Worthen Street. Monitoring wells MW24, MW25, MW26, MW27, MW29, MW30, and MW31 all had elevated PID readings at depths ranging from 19 to 32 feet bgs. Light nonaqueous phase liquid (LNAPL) was observed in the soil at 24 feet bgs at MW29. Updated cross sections were prepared to include data obtained from the new borings. The cross sections are included on Figures 6-9. The ground surface is relatively flat in the east-west direction while the top of the Chumstick Formation slopes to the east between MW16 and the Columbia River (280 feet) with a drop in elevation of 30 feet. The ground slopes to the north with a 19 foot drop in elevation between MW12 and MW22 (800 feet to the north). The drop in elevation of the Chumstick Formation is 28 feet between these wells. Detailed description of the subsurface soil is included in the attached boring logs (Appendix A).

5.2 Field Screening Results

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. Results are summarized below.

Field Screening Results

Boring ID	Hydrocarbon Odor	PID Readings >2 ppmv @ depth (feet)
MW24	Strong odor @ 22'	94 @ 22' 9.9 @ 23' 2.1@ 28'
MW25	Strong odor @ 22'	136 @ 22' 10 @ 25'
MW26	Strong odor @ 19'-25'	125 @ 19' 13.3 @ 23' 77.3 @ 24'
MW27	Strong odor @ 19'	3.5 -3.7 @ 6'-10' 2.6-265.7@16'-19'
MW28	--	--
MW29	Sheen and free product @ 24'	2.1- 42.8 @ 24'-27' 9.2-13 @30'-34'
MW30	Strong odor @ 22-37'	102.5-265.9 @ 20'-32'
MW31	Strong odor @ 25-28'	54-265 @26-28' 3.8 @ 30'
MW32	Strong odor @ 14'	2.1-3.1 @ 11-13' 481.1 @ 14' 3.7 @ 15'

5.3 Soil Analytical Results

Soil analytical results are reported in milligrams per kilogram (mg/kg) which is equivalent to parts per million (ppm) and are summarized in Table 2 and Figure 5. The laboratory report and chain-of-custody documentation is included in Appendix C.

A summary of the soil analytical results in each boring is provided below.

MW09R – HydroCon collected a soil sample from the bottom of the borehole. The sample collected at 35' bgs had low concentrations of GRPH, DRPH, ORPH, ethylbenzene, and total xylenes. None of the detected COCs was above their respective MTCA Method A cleanup level.

MW10R – HydroCon collected a soil sample from the bottom of the borehole. The only COC detected in the sample was DRPH at a concentration that is well below the MTCA Method A cleanup level.

MW24 – Four samples were submitted for analysis from the boring at depths of 15, 22, 28, and 35 feet bgs. GRPH (up to 179 mg/kg) was detected in the samples collected from 22, 28, and 35 feet bgs. DRPH (73 mg/kg) was detected in the 35 feet bgs sample. Total xylenes (up to 0.117 mg/kg) were detected in the samples collected at 22 and 35 feet bgs. The concentration of GRPH in the samples collected at 22 and 28 feet bgs exceed the MTCA Method A cleanup level.

MW25 – Three samples were submitted for analysis from the boring at depths of 19, 22, and 35 feet bgs. GRPH (up to 7.98 mg/kg) and DRPH (up to 239 mg/kg) were detected in the samples collected from 22 and 35 feet bgs. ORPH (323 mg/kg) was detected in the sample collected from 35 feet bgs sample. None of the detected COCs are above their respective MTCA Method A cleanup levels.

MW26 – Four samples were submitted for analysis from the boring at depths of 15, 19, 29, and 33 feet bgs. GRPH (up to 33.4 mg/kg) was detected in the samples collected from 19 and 29 feet bgs. DRPH (up to 228 mg/kg) was detected in the 19, 29, 33 feet bgs sample. ORPH (288 mg/kg) was detected in the sample collected at 33 feet bgs. The concentration of GRPH at 29 feet bgs exceeds the MTCA Method A cleanup level.

MW27 – Three samples were submitted for analysis from the boring at depths of 15, 19, and 39 feet bgs. GRPH was detected at a concentration of 126 mg/kg in the sample collected at 19 feet bgs. DRPH (up to 263 mg/kg) was detected in samples collected at 19 and 39 feet bgs. ORPH (65.9 mg/kg) was detected in the sample collected at 39 feet bgs. Ethylbenzene (0.0992 mg/kg) was detected in the sample collected from 19 feet bgs. Total xylenes (up to 0.631 mg/kg) were detected in the samples collected from 19 and 39 feet bgs. The concentration of GRPH at 19 feet bgs exceeds the MTCA Method A cleanup level.

MW28 – Three samples were submitted for analysis from the boring at depths of 19, 25, and 39 feet bgs. GRPH (28.2 mg/kg) and DRPH (27.8 mg/kg) was detected in the sample collected from 39 feet bgs. Ethylbenzene (up to 0.0638 mg/kg) was detected in the samples collected from 25 and 39 feet bgs. Total xylenes (up to 0.317 mg/kg) were detected in the samples collected from each sample. None of the COCs exceeded their respective MTCA Method A cleanup level.

MW29 – Four samples were submitted for analysis from the boring at depths of 15, 24, 34, and 40 feet bgs. GRPH (33.6 mg/kg) and DRPH (81.2 mg/kg) were detected in the 24 feet bgs sample. The concentration of GRPH exceeds the MTCA Method A cleanup level in the sample collected at 24 feet bgs.

MW30 – Five samples were submitted for analysis from the boring at depths of 15, 20, 28, 32, and 40 feet bgs. There was no detection of any COC in the sample collected at 15 feet bgs. GRPH (up to 618 mg/kg) was detected in the samples collected from 20, 28, and 32 feet bgs. DRPH (up to 1,900 mg/kg) was detected in the samples collected from 20, 28, 32, and 40 feet bgs. ORPH (250 mg/kg) was detected in the sample collected at 40 feet bgs. Ethylbenzene (0.0473 mg/kg) was detected in the sample collected from 28 feet bgs. Total xylenes (up to 0.123 mg/kg) were detected in the samples

collected at 28 and 40 feet bgs. The concentration of GRPH at 20, 28, and 32 feet exceed the MTCA Method A cleanup level.

MW31 – Three samples were submitted for analysis from the boring at depths of 19, 28, and 38 feet bgs. GRPH (125 mg/kg) and DRPH (564 mg/kg) were detected in the sample collected at 28 feet bgs. The concentration of GRPH at 28 feet exceeds the MTCA Method A cleanup level.

MW32 - Three samples were submitted for analysis from the boring at depths of 10, 14, and 28 feet bgs. GRPH (1,930 mg/kg) and DRPH (3,400 mg/kg) were detected in the sample collected at 14 feet bgs. The concentration of GRPH and DRPH at 14 feet exceeds their respective MTCA Method A cleanup levels.

In summary, eight wells were installed on the east side Worthen Street near the seep area north of Chehalis Street (MWW24 through MW31). While DRPH was detected in some samples from these wells, none exceeded the MTCA Method A CUL. All wells but MW25 and MW28 had at least one sample that had CUL exceedances for GRPH. MW09R and MW10R did not have CUL exceedances at the 35 foot depth. MW32, located on Chehalis Street, had CUL exceedances for both DRPH and GRPH. Figure 4 shows the current extent of DRPH and GRPH in soil and groundwater at the Site. The new wells did not affect the understanding of the extent of contamination underlying the Site.
Figure 3 includes a refinement of the top of the Chumstick Formation based on the new wells. The stratigraphy of the new wells did not significantly change the understanding of the top of the Chumstick Formation.

5.4 Data Quality Review

Laboratory testing of soil resulted in two laboratory reports including Apex Labs Work Orders A8H328 and A8H0529. The data review reports are included in Appendix D. The review of the analytical results included the following:

- Holding Times & Sample Receipt
- Surrogate Compounds
- Associated Matrix Spike/Matrix Spike Duplicate (MS/MSD)
- Associated Laboratory Duplicate
- Laboratory Control Sample/ Laboratory Control Sample Duplicates (LCS/LCSD)
- Method Blank
- Field Duplicates
- Target Analyte List
- Reporting Limits (MDL and MRL)
- Reported Results

Data were qualified due to matrix interference, compound identification issues, and/or LCS/CCV recoveries. No data were rejected and completeness was 100 percent. All results are usable as

intended. Appendix D identifies all data qualifies and the reasons for qualification. Aside from the data quality issues identified above and the Appendix, the data quality review identified no concerns with respect of the quality of usability of the data presented herein.

6.0 AQUIFER TESTING

Aquifer testing was performed to select wells for inclusion in the expansion of the site remediation system and to develop a better understanding of the aquifer characteristics. Aquifer testing included slug testing and step draw down testing in selected wells.

6.1 Slug Testing

Slug testing was performed on August 20, 2018 to observe relative flow rates of the newly installed wells located on and adjacent to the Coleman Oil property in an attempt to better understand contaminate flow across the Site. Slug testing included MW24 through MW32, MW09R and MW10R.

A *slug test* is a controlled field experiment to estimate the hydraulic properties of aquifers and aquitards, in which the water level in a control well is caused to change suddenly (rise or fall) and the subsequent water-level response (displacement or change from static) is measured through time in the control well and one or more surrounding observation wells.

The slug used in the test was 3-inches in diameter and 12-inches long and constructed of galvanized steel. Prior to lowering the slug into the well to completely submerge it, the initial depth to water was recorded using a clean electronic water level meter. Immediately following placement of the slug, the depth to water was measured to record the displacement created by the slug. Water levels were then collected at one, two, five, and ten minutes after the slug was placed in the well to measure the falling-head response in the well. After 10 minutes the slug was removed, decontaminated, and the procedure was repeated in another well. Flow rates of high (no displacement recorded), medium (medium displacement and medium falling-head response) to low (large displacement and slow falling-head response) were assigned to each well relative to each other. The results of the slug tests are included in Table 3.

The results of the slug tests indicate that:

- MW09R, MW10R, MW24, and MW32 have high flow rates
- MW28 has a medium flow rate
- MW25, MW26, MW27, MW29, MW30 and MW31 have low flow rates

The final row in Table 3 shows the rate of recharge observed during well development. The values are calculated using the time it took each well to recharge 1 foot and then converting the results to gallons per minute (gpm). Two wells (MW29 and MW31) did not recharge 1 foot within 120 minutes. Therefore, an estimated value of <0.005 gpm minutes was assigned to each well. The rate of slug test recharge and well development recharge are generally in good agreement, except that the well development recharge is relatively higher that slug test recharge for MW10R and MW24.

As can be seen in Figure 3, most of the wells on Worthen Street have relatively low flow rates, except MW24, MW10R, and BH-1 which show relatively high flow rates. Wells along Chehalis Street and on the Property just south of Chehalis Street have relatively high flow rates. As shown on Figure 5, DRPH was not detected above cleanup levels in the new wells drilled along Worthen Street and DRPH was detected above cleanup levels in MW32 on Chehalis Street. These results strengthen the conceptual site model of preferential flow paths from the site to the river near MW10R and BH-1.

6.2 Step Drawdown Testing

Step drawdown tests were performed on each of the new wells. Water level monitoring was performed in the well being pumped as well as selected wells located nearby.

The test was conducted using a GeoTech SSGeoSub 2-inch submersible pump (1.75-inch outside diameter) with variable speed drive and up to eight INW PT2X 30 psi pressure transducers with internal data loggers from Instrumentation Northwest, Inc. of Kirkland, Washington. The transducers were calibrated prior to being taken to the field. In addition to the automatic data logging, measurements of water levels in the wells during and after each test were collected using a clean electronic interface probe and water level meter, respectively (described in greater detail in the SRI SAP SOP10).

Prior to conducting the tests, pumping of the three wells (MW-9, MW-10, and BH-1) was shut down a minimum of 24 hours preceding the tests. Clean electronic water level transducers were placed in selected wells near the testing well. Static water level monitoring was conducted in the wells for a minimum of 8 hours before the tests were conducted.

The pumping well was initially pumped at a rate of 0.25 gpm until static drawdown conditions were met for at least 15 minutes or when the well was pumped dry. The test was then continued by doubling the pumping rate until static drawdown conditions were met for at least 15 minutes or the well was pumped dry. A check valve was installed in the riser pipe and closed during the recovery phase to prevent backflow into the testing well. The test for each well was considered to be complete when water levels remained at a constant level within one-half of the available drawdown (the depth one-half the distance between the static level and the bottom of the well).

Step tests were attempted in monitoring wells MW20, MW24, MW28, and MW32 at pumping rates of 0.25, 0.5, 1.0, and 2.0 gpm. Plots of the drawdown tests are provided in Appendix E. Observations and results are summarized below.

MW20 - This well was determined to have a medium relative flow rate as determined by slug testing (Figure 3). It was selected for testing due to its proximity to the seeps and wells producing product (i.e., BH-1). The test began with a pumping rate of 0.5 gpm. After 5 minutes, the rate was lowered to 0.25 gpm because 0.5 gpm was unsustainable. The test was ended after another 10 minutes when the water level reached the pump intake level. No changes in water levels were observed in nearby wells MW27, MW28 and BH-1. The well recharged 1 foot in 18 minutes. This test was not plotted.

MW24 - This well was determined to have a high relative flow rate as determined by slug testing (Figure 3). It was selected due to high flow rate and proximity to MW-10. The test began with a flow rate of 0.5 gpm for 40 minutes, then increased to 1 gpm for 102 minutes. The pump ran out of gas and the test restarted after 10 minutes at 1 gpm for 40 minutes. The flow rate was increased to 2 gpm for 10 minutes when the water level reached the intake. Water levels decreased approximately 2 feet during the 1 gpm step and 3 feet during the 2 gpm step. The water level in MW-10 decreased approximately 1 foot and the water level in MW21 increased approximately 0.2 feet. No change was observed in MW25. Product was observed in MW24 following the test.

MW28 - This well was determined to have a medium relative flow rate as determined by slug testing (Figure 3). The well is located near the seeps between RW-1 and BH-1. The well was pumped at 0.25 gpm for 47 minutes when the water level reached the intake level. The well recharged 1 foot in 6 minutes. Falling head was observed in MW27 and BH-1 of 0.03 and 0.02 feet respectively. No change in water level was observed in MW20.

MW32 - This well was determined to have a high relative flow rate as determined by slug testing (Figure 3). The well is located on Chehalis Street between MW16 and MW17. The well was pumped at 0.5 gpm for 70 minutes when the water level reached the intake. The well recharged 1 foot in 5 minutes. No water level changes were observed in MW16 and MW17.

In summary, none of the tested wells were able to sustain a pumping of 0.5 gpm. There appeared to be little or no hydraulic connection between the pumped wells and nearby observation wells with the exception MW24 and MW-10.

7.0 REMEDIATION SYSTEM DESIGN AND INSTALLATION

Results of the aquifer testing, boring logs, and the soil analytical data were submitted to our engineer for design of the expansion of the remediation system currently in operation at the Site. HydroCon's primary design objective for upgrading the interim remediation at the Coleman Oil facility was to expand the product recovery capability of the system.

The original system extracted oil/groundwater from three wells. The new design package included the expansion of the system to a total of nine wells. This provides substantial additional operational flexibility for the project manager and those responsible for operating and maintaining the system to focus product recovery efforts where future site monitoring indicates that is necessary. The enhanced recovery system was designed so it can operate within the capacity of the existing mechanical equipment (air compressor, and piping) so that no additional major capital equipment is needed to operate the system, with the exception of adding well pumps to the wells selected for additional recovery.

The interim remediation system design is included in Appendix F as a set of drawings. Major features of the design include the initial remediation system layout, the water treatment system at Tank Farm A, the expanded remediation system layout, details of vaults and utility trenches, and equipment and instrumentation.

7.1 Expansion of Remediation System at the Site

The remediation system was expanded on October 22 through October 26, 2018. The interim remediation system had been designed to recover free product from areas that have persistent NAPL measured in the wells, to control water levels, and to mitigate the presence of sheen (i.e., LNAPL) from discharging into the Columbia River. The remediation system was expanded to include six more recovery points (MW17, MW24, MW28, MW29, MW30, and MW32). The remediation system consists of three separate zones that pump into an associated OWS. These zones include the MW09R zone, the MW10R zone, and the BH-1 zone.

The MW09R zone is located along the north side of Chehalis Street and includes three wells (MW09R, MW17 and MW32). Currently only MW09R is being pumped. The other two wells will be brought on line as needed if product is observed.

The MW10R zone includes MW10R, MW24, and MW28. This zone is located north of BH-1 along the east side of Worthen Street. All of these wells are operational, using dedicated AP-3 top loading pneumatic total fluids pumps. Product has been measured in MW10R and MW24. The pumps in MW10R and MW24 are set with the intake set at 27 feet bgs. The pump intake in MW28 is set at 33 feet bgs.

The BH-1 zone includes monitoring wells MW29, MW30, and BH-1 and is located in the eastern side of Worthen Street beginning at BH-1 south to MW30. Product has been observed in BH-1 and petroleum sheen was observed in the soil of MW29. All three of these wells are operational using dedicated AP-3 top loading pneumatic pumps. The pumps in MW29 and MW30 are set with the intake set at 34 feet bgs and the pump intake in BH-1 is set at 27 feet bgs.

The current interim remediation system has been designed to recover free product from areas that have persistent NAPL measured in the wells and control water levels to mitigate the presence of sheen on the Columbia River as a result of LNAPL discharging to the river.

8.0 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, non-detectable 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 **Coleman Oil Company** to meet the requirements of Exhibit B – Scope of Work and Schedule of the Agreed Order. 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.

9.0 REFERENCES

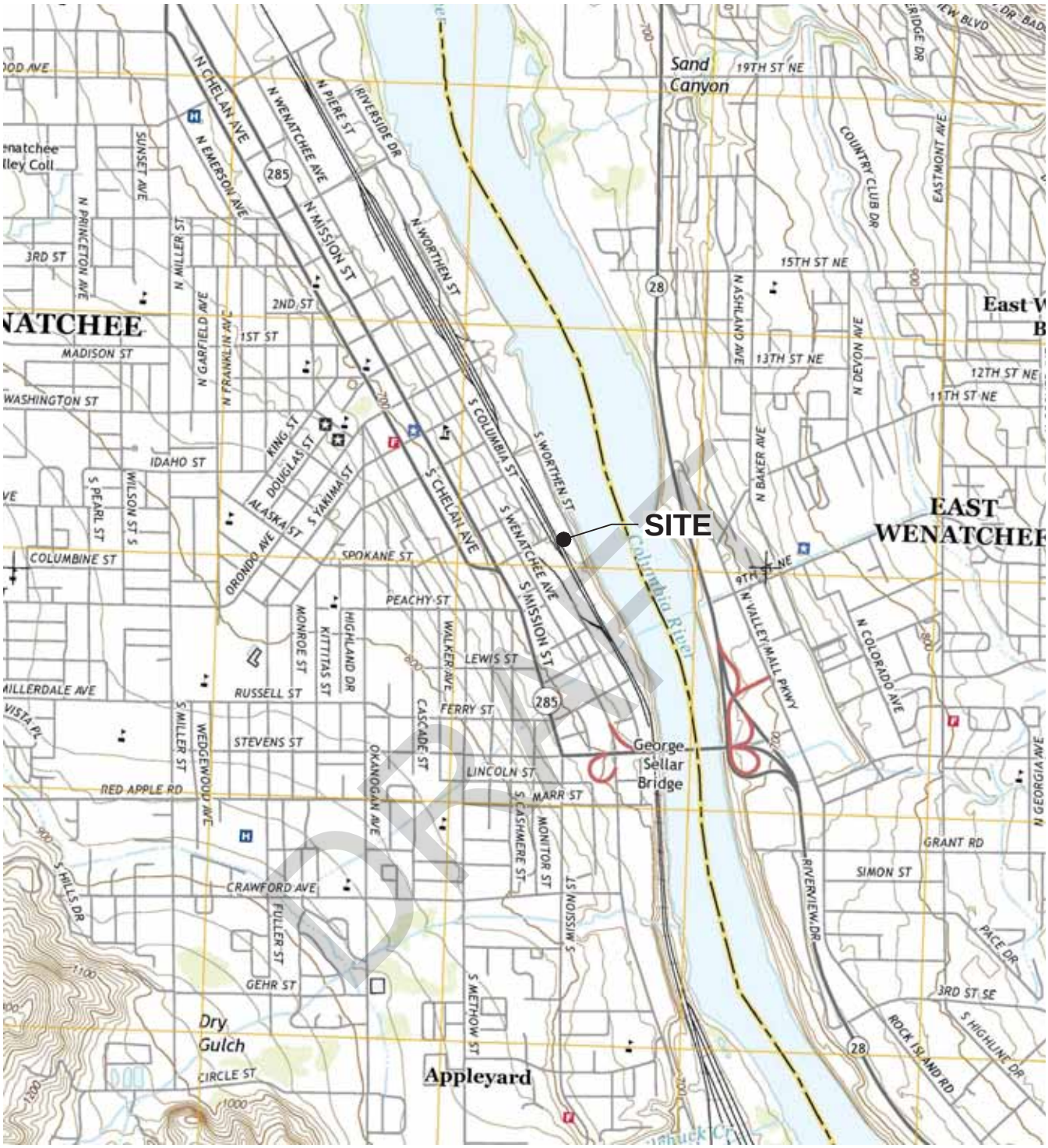
HydroCon, LLC. 2018a. *Supplemental Remedial Investigation Work Plan. Coleman Oil R99 Renewable Diesel Spill, Wenatchee, Washington*. Prepared for Coleman Oil Company, LLC. March 15.

———. 2018b. *Supplemental Remedial Investigation Report. Coleman Oil R99 Renewable Diesel Spill, Wenatchee, Washington*. Prepared for Coleman Oil Company, LLC. August 8, Revised October 9.

———. 2018c. *Additional Interim Action Work Plan Addendum #2. Coleman Oil R99 Renewable Diesel Spill, Wenatchee, Washington*. Prepared for Coleman Oil Company, LLC. July 26.

———. 2018d. *Aquifer Testing at Coleman Oil Facility, Wenatchee, Washington*, March 16.

FIGURES



NOTE(S):
USGS, WENATCHEE QUADRANGLE
WASHINGTON
7.5 MINUTE SERIES (TOPOGRAPHIC)

0 2000 4000
SCALE IN FEET
1" = 2000'

N
W E
S

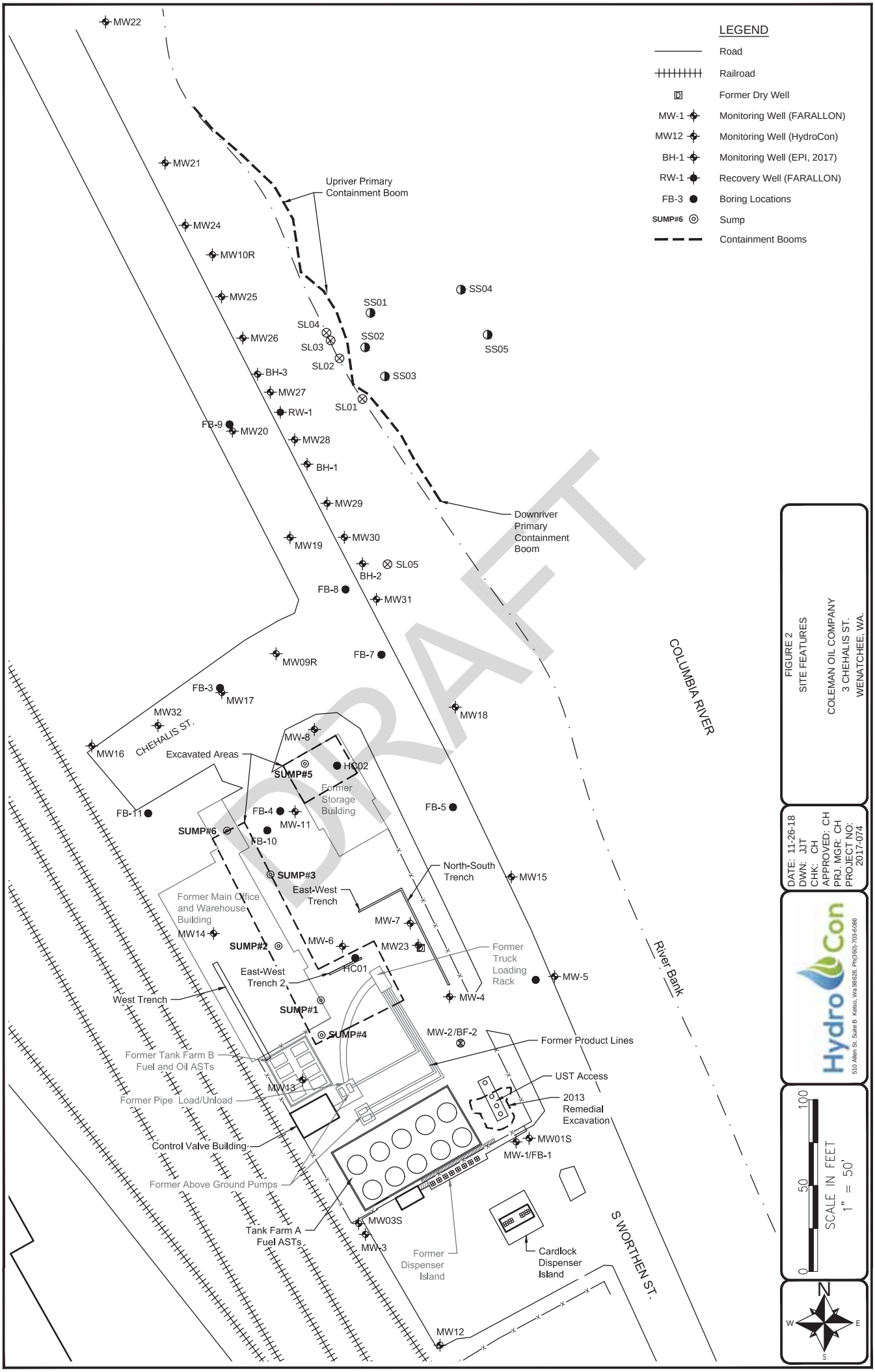
HydroCon
510 Allen St. Suite B Kelso, Wa 98626, Ph(360)-703-6086

DATE: 11-26-18
DWN: JJT
CHK: RH
APPROVED: RH
PRJ. MGR: CH
PROJECT NO: 2017-074

FIGURE 1
SITE LOCATION MAP

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATHCEE, WA.

C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Nov 2018\2017-074_BM-112618.dwg



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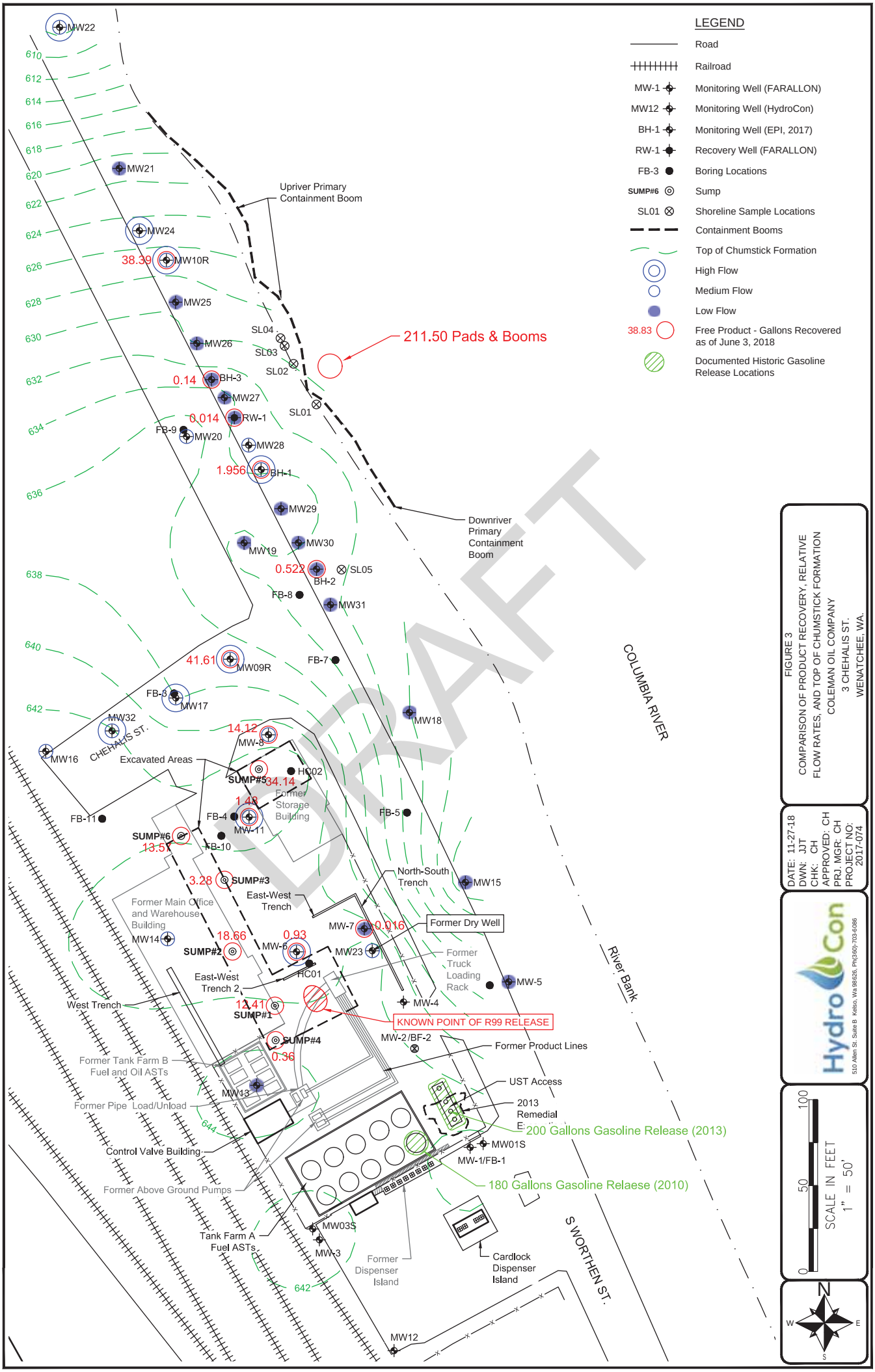

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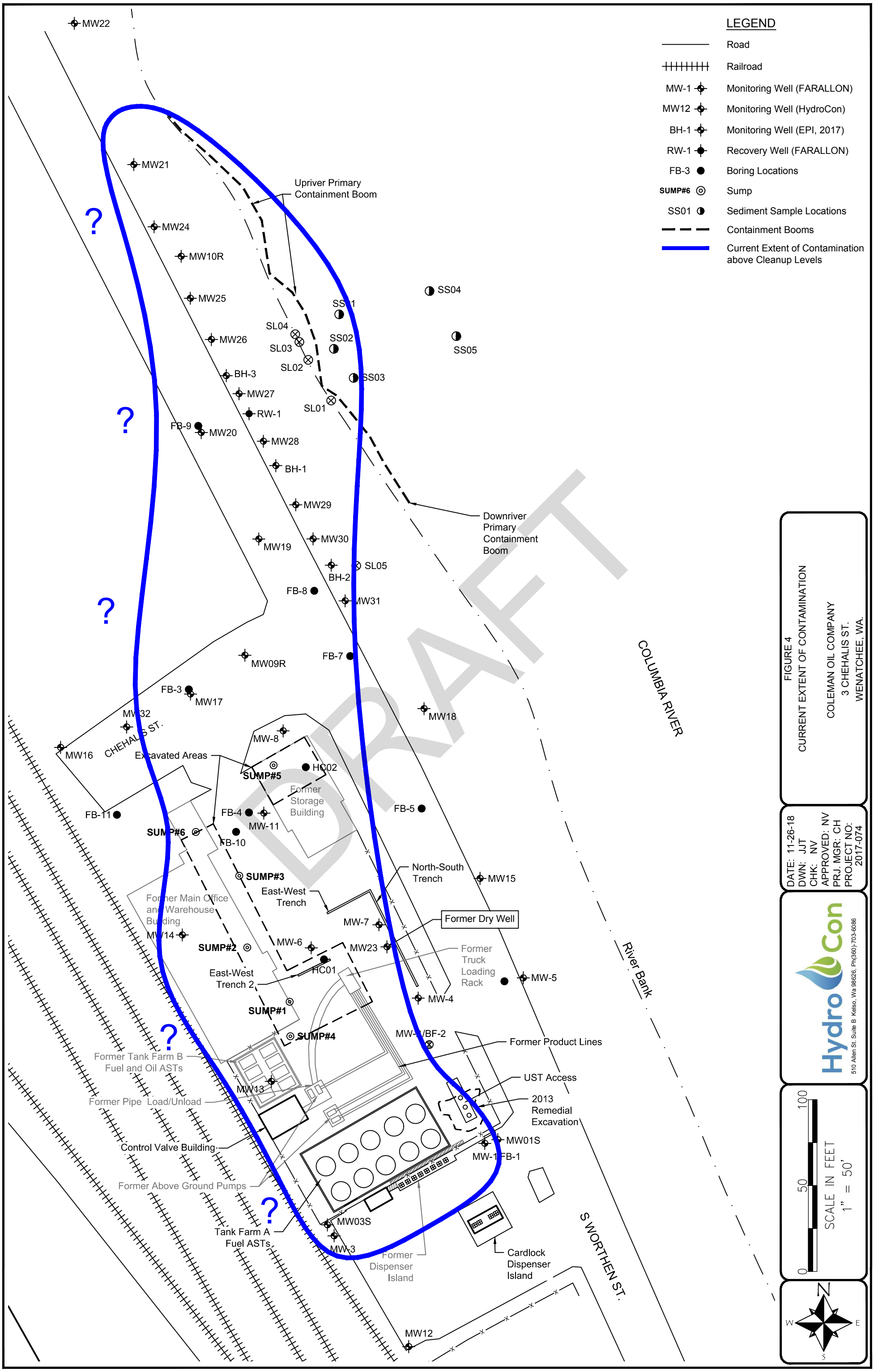
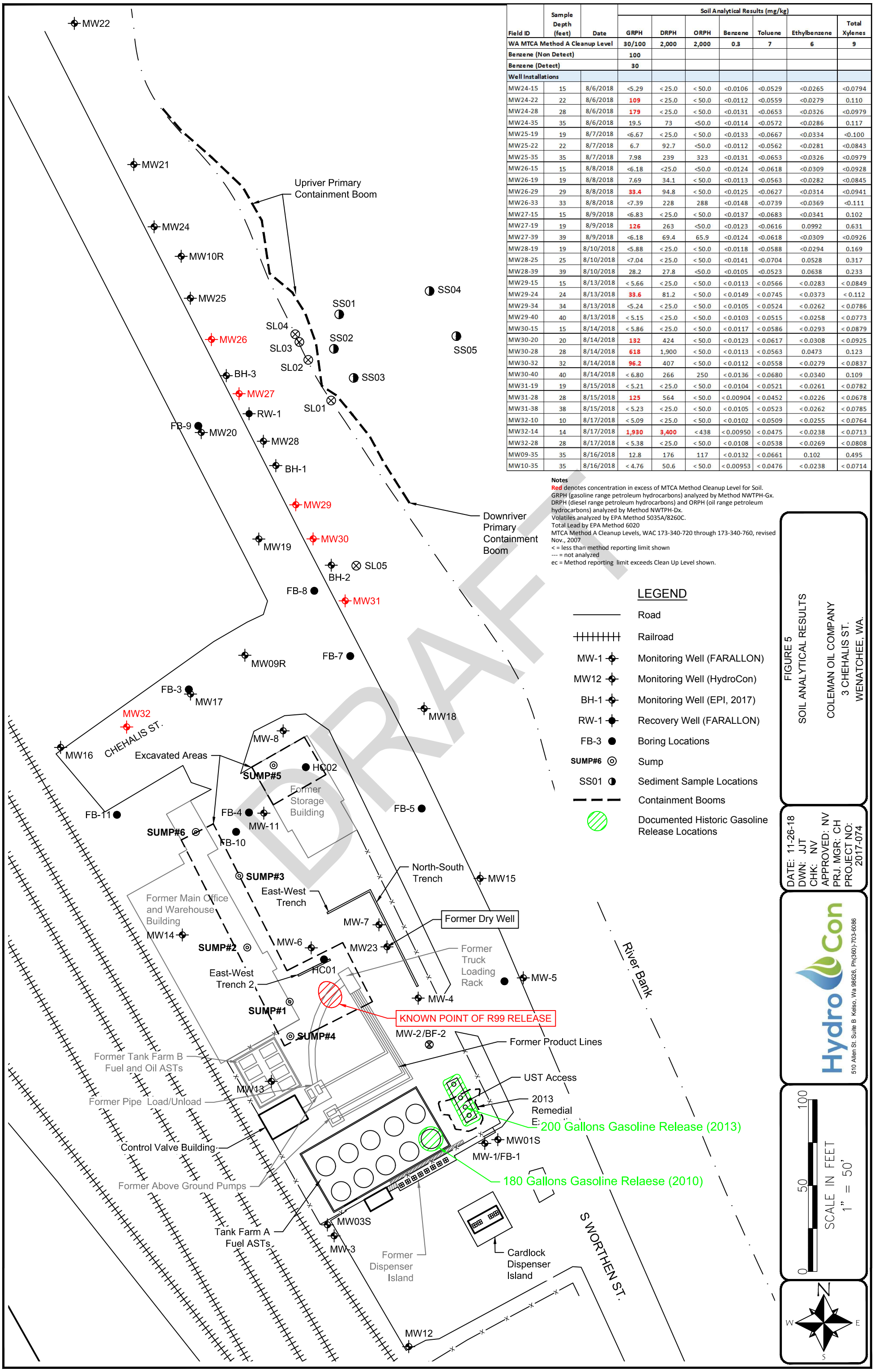

LEGEND
Road
Railroad
MW-1 Monitoring Well (FARALLON)
MW12 Monitoring Well (HydroCon)
BH-1 Monitoring Well (EPI, 2017)
RW-1 Recovery Well (FARALLON)
FB-3 Boring Locations
SUMP#6 Sump
SS01 Sediment Sample Locations
Containment Booms
Current Extent of Contamination above Cleanup Levels
MW22
MW21
MW24
MW10R
MW25
MW26
BH-3
MW27
RW-1
FB-9
MW20
MW28
BH-1
MW29
MW19
MW30
BH-2
SL05
FB-8
MW31
MW09R
FB-7
FB-3
MW17
MW32
MW16
CHEHALIS ST.
MW-8
Excavated Areas
SUMP#5
HC02
Former Storage Building
FB-11
FB-4
MW-11
SUMP#6
FB-10
SUMP#3
East-West Trench
Former Main Office and Warehouse Building
MW14
SUMP#2
MW-6
HC01
East-West Trench 2
SUMP#1
SUMP#4
Former Tank Farm B Fuel and Oil ASTs
MW13
Former Pipe Load/Unload
Control Valve Building
Former Above Ground Pumps
Tank Farm A Fuel ASTs
MW03S
MW-3
Former Dispenser Island
MW12
Upriver Primary Containment Boom
SS04
SS01
SL04
SS02
SL03
SS05
SL02
SS03
SL01
Downriver Primary Containment Boom
MW18
COLUMBIA RIVER
North-South Trench
MW15
Former Dry Well
MW-7
MW23
Former Truck Loading Rack
MW-5
MW-4
MW-12/BF-2
Former Product Lines
UST Access
2013 Remedial Excavation
MW01S
MW-1
FB-1
S WORTHEN ST.
River Bank
?
DRAFT
FIGURE 4
CURRENT EXTENT OF CONTAMINATION
COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.
DATE: 11-26-18
DWN: JJT
CHK: NV
APPROVED: NV
PRJ. MGR: CH
PROJECT NO: 2017-074
HydroCon
510 Allen St. Suite B Kelso, Wa 98626, Ph(360)-703-6086
SCALE IN FEET
1" = 50'
0
50
100
N
W
E
S
C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Nov 2018\2017-074_BM-112618.dwg

Field ID	Sample Depth (feet)	Date	Soil Analytical Results (mg/kg) GRPH	DRPH	ORPH	Benzene	Toluene	Ethylbenzene	Total Xylenes
WA MTCA Method A Cleanup Level			30/100	2,000	2,000	0.3	7	6	9
Benzene (Non Detect)			100						
Benzene (Detect)			30						
Well Installations									
MW24-15	15	8/6/2018	<5.29	< 25.0	< 50.0	<0.0106	<0.0529	<0.0265	<0.0794
MW24-22	22	8/6/2018	**109**	< 25.0	< 50.0	<0.0112	<0.0559	<0.0279	0.110
MW24-28	28	8/6/2018	**179**	< 25.0	< 50.0	<0.0131	<0.0653	<0.0326	<0.0979
MW24-35	35	8/6/2018	19.5	73	<50.0	<0.0114	<0.0572	<0.0286	0.117
MW25-19	19	8/7/2018	<6.67	< 25.0	< 50.0	<0.0133	<0.0667	<0.0334	<0.100
MW25-22	22	8/7/2018	6.7	92.7	<50.0	<0.0112	<0.0562	<0.0281	<0.0843
MW25-35	35	8/7/2018	7.98	239	323	<0.0131	<0.0653	<0.0326	<0.0979
MW26-15	15	8/8/2018	<6.18	<25.0	<50.0	<0.0124	<0.0618	<0.0309	<0.0928
MW26-19	19	8/8/2018	7.69	34.1	< 50.0	<0.0113	<0.0563	<0.0282	<0.0845
MW26-29	29	8/8/2018	**33.4**	94.8	< 50.0	<0.0125	<0.0627	<0.0314	<0.0941
MW26-33	33	8/8/2018	<7.39	228	288	<0.0148	<0.0739	<0.0369	<0.111
MW27-15	15	8/9/2018	<6.83	< 25.0	< 50.0	<0.0137	<0.0683	<0.0341	0.102
MW27-19	19	8/9/2018	**126**	263	<50.0	<0.0123	<0.0616	0.0992	0.631
MW27-39	39	8/9/2018	<6.18	69.4	65.9	<0.0124	<0.0618	<0.0309	<0.0926
MW28-19	19	8/10/2018	<5.88	< 25.0	< 50.0	<0.0118	<0.0588	<0.0294	0.169
MW28-25	25	8/10/2018	<7.04	< 25.0	< 50.0	<0.0141	<0.0704	0.0528	0.317
MW28-39	39	8/10/2018	28.2	27.8	<50.0	<0.0105	<0.0523	0.0638	0.233
MW29-15	15	8/13/2018	< 5.66	< 25.0	< 50.0	< 0.0113	< 0.0566	< 0.0283	< 0.0849
MW29-24	24	8/13/2018	**33.6**	81.2	< 50.0	< 0.0149	< 0.0745	< 0.0373	< 0.112
MW29-34	34	8/13/2018	<5.24	< 25.0	< 50.0	< 0.0105	< 0.0524	< 0.0262	< 0.0786
MW29-40	40	8/13/2018	< 5.15	< 25.0	< 50.0	< 0.0103	< 0.0515	< 0.0258	< 0.0773
MW30-15	15	8/14/2018	< 5.86	< 25.0	< 50.0	< 0.0117	< 0.0586	< 0.0293	< 0.0879
MW30-20	20	8/14/2018	**132**	424	< 50.0	< 0.0123	< 0.0617	< 0.0308	< 0.0925
MW30-28	28	8/14/2018	**618**	1,900	< 50.0	< 0.0113	< 0.0563	0.0473	0.123
MW30-32	32	8/14/2018	**96.2**	407	< 50.0	< 0.0112	< 0.0558	< 0.0279	< 0.0837
MW30-40	40	8/14/2018	< 6.80	266	250	< 0.0136	< 0.0680	< 0.0340	0.109
MW31-19	19	8/15/2018	< 5.21	< 25.0	< 50.0	< 0.0104	< 0.0521	< 0.0261	< 0.0782
MW31-28	28	8/15/2018	**125**	564	< 50.0	< 0.00904	< 0.0452	< 0.0226	< 0.0678
MW31-38	38	8/15/2018	< 5.23	< 25.0	< 50.0	< 0.0105	< 0.0523	< 0.0262	< 0.0785
MW32-10	10	8/17/2018	< 5.09	< 25.0	< 50.0	< 0.0102	< 0.0509	< 0.0255	< 0.0764
MW32-14	14	8/17/2018	**1,930**	**3,400**	< 438	< 0.00950	< 0.0475	< 0.0238	< 0.0713
MW32-28	28	8/17/2018	< 5.38	< 25.0	< 50.0	< 0.0108	< 0.0538	< 0.0269	< 0.0808
MW09-35	35	8/16/2018	12.8	176	117	< 0.0132	< 0.0661	0.102	0.495
MW10-35	35	8/16/2018	< 4.76	50.6	< 50.0	< 0.00953	< 0.0476	< 0.0238	< 0.0714

Notes
Red denotes concentration in excess of MTCA Method Cleanup Level for Soil.
GRPH (gasoline range petroleum hydrocarbons) analyzed by Method NWTPH-Gx.
DRPH (diesel range petroleum hydrocarbons) and ORPH (oil range petroleum hydrocarbons) analyzed by Method NWTPH-Dx.
Volatiles analyzed by EPA Method 5035A/8260C.
Total Lead by EPA Method 6020
MTCA Method A Cleanup Levels, WAC 173-340-720 through 173-340-760, revised Nov., 2007
< = less than method reporting limit shown
--- = not analyzed
ec = Method reporting limit exceeds Clean Up Level shown.



LEGEND

- Road
- Railroad
- MW-1 — Monitoring Well (FARALLON)
- MW12 — Monitoring Well (HydroCon)
- BH-1 — Monitoring Well (EPI, 2017)
- RW-1 — Recovery Well (FARALLON)
- FB-3 — Boring Locations
- SUMP#6 — Sump
- SS01 — Sediment Sample Locations
- Containment Booms
- Documented Historic Gasoline Release Locations

FIGURE 5
SOIL ANALYTICAL RESULTS

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

DATE: 11-26-18
DWN: JJT
CHK: NV
APPROVED: NV
PRJ. MGR: CH
PROJECT NO: 2017-074

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

SCALE IN FEET
1" = 50'
0 50 100

N W E S

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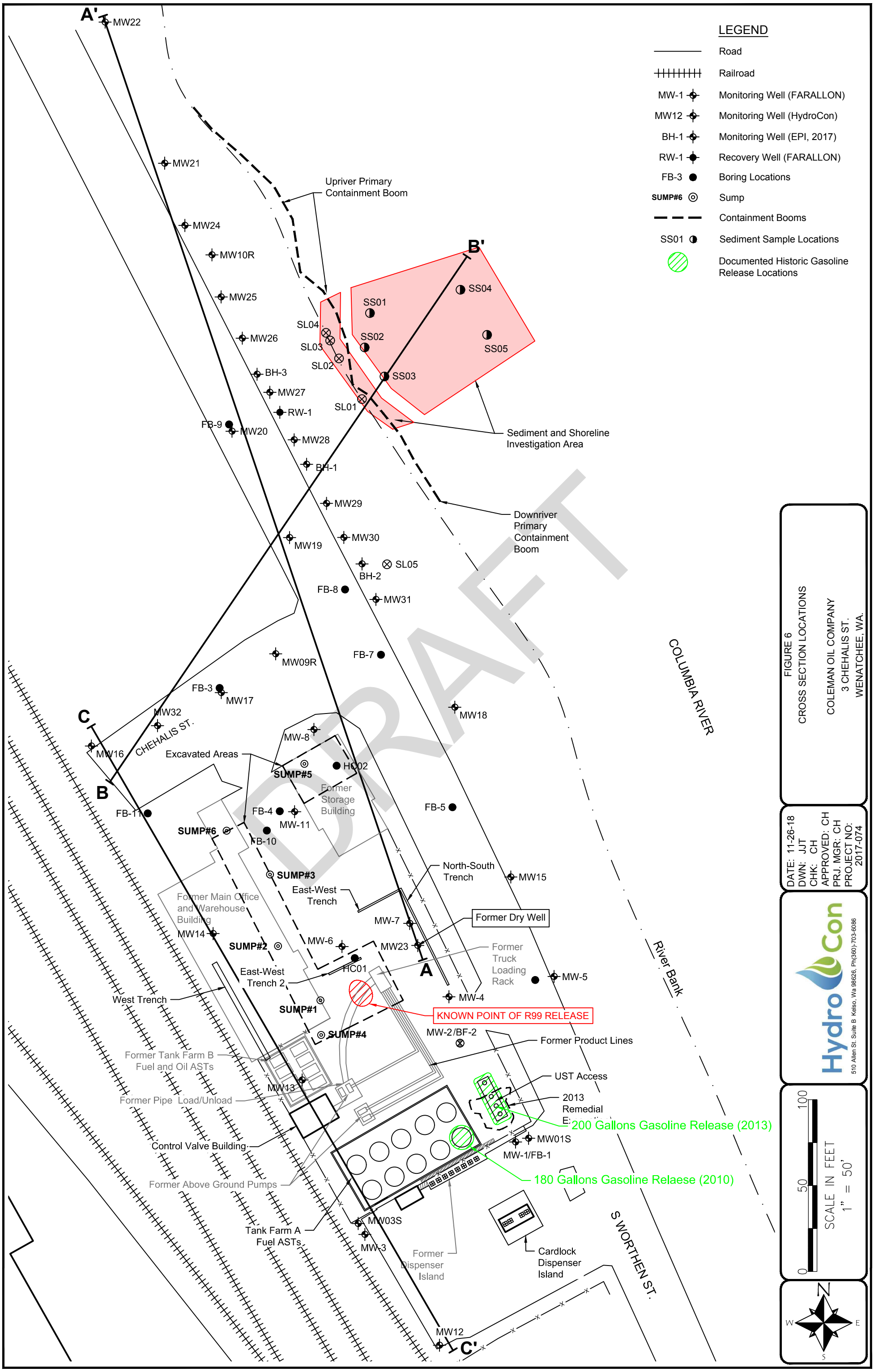


A'
NORTH

A
SOUTH

Chehalis St.

Former Storage Building

Elevation Feet Above Mean Sea Level (MSL)

660'
650'
640'
630'
620'
610'
600'

MW22 MW21 MW24 MW-10R MW25 MW26 MW20 MW19 MW-8 Sump #5 HC02 MW-7 MW23

River Elevation (4/27/18)

River Elevation (8/31/18)

Transmissive Zone

TWD=40'
TWD=35'
TWD=30'
TWD=25'

Legend

- Water Level at time of Drilling
- Well Screen Interval
- Water Level (4/27/18)
- Water Level (8/31/18)
- Top of Chumstick Formation
- Sandstone
- 172 PID Reading
- Sample Location
- Area of Contamination as Defined by Analytical Results and PID Readings

0 40 80
SCALE IN FEET
1" = 40'

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

DATE: 11-27-18
DWN: JJT
CHK: RH
APPROVED: RH
PRJ. MGR: CH
PROJECT NO: 2017-074

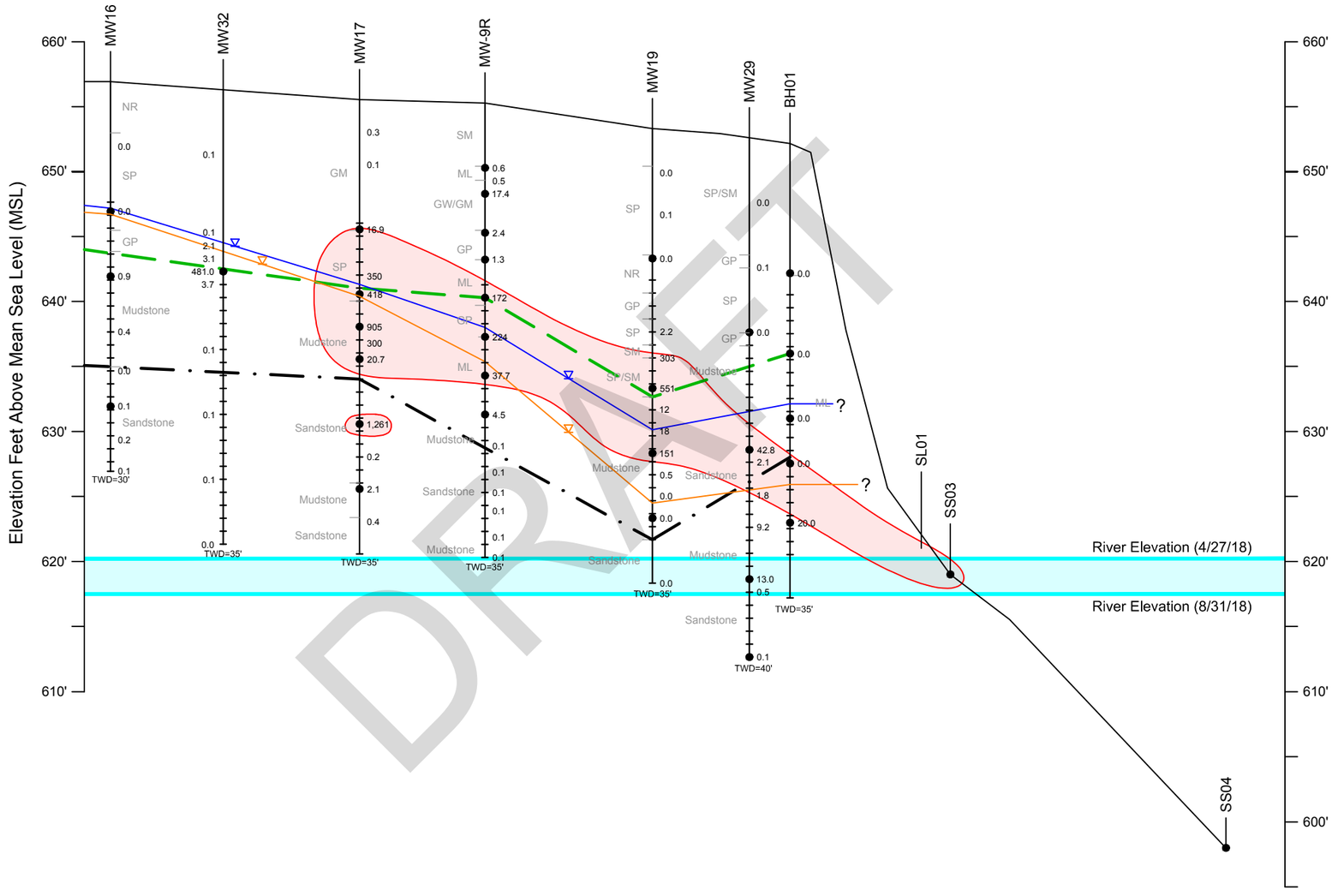
FIGURE 7
CROSS SECTION A-A'

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Nov 2018\2017-074_BM-112618.dwg

B WEST

B' EAST



Legend

- Water Level at time of Drilling
- Well Screen Interval
- Water Level (4/27/18)
- Water Level (8/31/18)
- Top of Chumstick Formation
- Sandstone
- 300 PID Reading
- Sample Location
- Area of Contamination as Defined by Analytical Results and PID Readings

0 40 80

SCALE IN FEET
1" = 40'

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

DATE: 11-27-18
DWN: JJT
CHK: RH
APPROVED: RH
PRJ. MGR: CH
PROJECT NO: 2017-074

FIGURE 8
CROSS SECTION B-B'

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Nov 2018\2017-074_BM-112618.dwg

C WEST — **C'** EAST

Chehalis St. | Former Tank Farm B | Control Valve Building | AST Farm

MW16 | FB-11 | Sump #6 | MW14 | Sump #2 | MW13 | MW-3S | MW12

Elevation Feet Above Mean Sea Level (MSL)

660' 650' 640' 630' 620' 610' 600'

River Elevation (4/27/18)

River Elevation (8/31/18)

MW16: NR 0.0 | SP 0.0 | GP 0.9 | Mudstone 0.4 0.0 | 0.1 Sandstone 0.2 0.1 | TWD=30'

FB-11: ML 0.2 | Cobbles 1,942 | ML Cobbles 1,297 | 0.3 0.1 0.2 0.3 0.2

MW14: ML 0.4 0.1 | SP 0.2 0.4 | ML 1.3 | SP/SM 136 | ML 1,357 | ML 1,492 | SP 8.1 | 0.0 Sandstone 0.0 0.0 Mudstone 0.0 0.0 | TWD=35'

MW13: ML 468 | SP 637 | 1,147 | 1,271 | Sandstone 50 | 0.2 Sandstone 0.2 0.3 0.2 0.0 Mudstone 0.0 | 0.0 Siltstone 0.0 | 0.0 Mudstone 0.0 | TWD=50'

MW-3S: SP SM 0.0 | SP GM 0.0 | 0.1 SM 0.1 0.1 | SP 0.4 Mudstone 0.4 | TWD=20'

MW12: SP GM 0.0 0.1 0.1 0.5 | Sandstone 0.0 0.1 0.1 | Mudstone 0.0 0.0 | TWD=20'

Legend

- Water Level at time of Drilling
- Well Screen Interval
- Water Level (4/27/18)
- Water Level (8/31/18)
- Top of Chumstick Formation
- 172 PID Reading
- Sample Location
- Area of Contamination as Defined by Analytical Results and PID Readings

0 40 80

SCALE IN FEET

1" = 40'

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

DATE: 11-26-18
DWN: JJT
CHK: RH
APPROVED: RH
PRJ. MGR: CH
PROJECT NO: 2017-074

FIGURE 9
CROSS SECTION C-C'

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

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TABLES

Table 1

Well Construction Details
Coleman Oil Site
Wenatchee, Washington

Well ID	Date Installed	Installed By	Drilling Method	Total Boring Depth (feet bgs)	Total Well Depth (feet bgs)	Well Diameter (inch)	Well Construction Material	Screen Slot Size (inch)	Length of Screen (feet)	Length of Bottom Cap (feet)	Screened Interval (feet bgs)	Well Casing Elevation (feet[1])
MW-1	7/7/2010	Farallon	Air Rotary	35.50	35.00	2	PVC	0.01	15	-	20-35	658.01
MW01S	3/4/2018	HydroCon	Sonic	20.00	19.99	4	PVC	0.01	15	0.23	5.37 - 20.37	657.54
MW-2	7/8/2010	Farallon	Air Rotary	40.00	40.00	2	PVC	0.01	15	-	25-40	657.76
MW-3	9/7/2010	Farallon	Air Rotary	35.30	35.00	2	PVC	0.01	10	-	25-35	658.26
MW03S	4/3/2018	HydroCon	Sonic	20.00	19.30	4	PVC	0.01	15	0.23	4.43 - 19.43	658.17
MW-4	9/8/2010	Farallon	Air Rotary	40.10	37.00	2	PVC	0.01	10	-	27-37	657.48
MW-5	9/9/2010	Farallon	Air Rotary	45.40	45.00	2	PVC	0.01	15	-	30-45	656.00
MW-6	4/12/2017	Farallon	Air Rotary	18.40	18.00	4	PVC	0.02	10	-	8-18	657.70
MW-7	4/11/2017	Farallon	Air Rotary	20.10	20.00	4	PVC	0.02	10	-	10-20	657.52
MW-8	4/11/2017	Farallon	Air Rotary	25.20	25.00	4	PVC	0.02	10	-	15-25	656.20
MW-9	4/12/2017	Farallon	Air Rotary	24.50	24.00	4	PVC	0.02	10	-	14-24	655.29
MW09R	8/15/2018	HydroCon	Sonic	35.00	32.60	4	PVC	0.01	25	0.45	8.59-33.59	653.55
MW-10	4/14/2017	Farallon	Air Rotary	30.20	30.00	2	PVC	0.02	16	-	14-30	645.80
MW10R	8/16/2018	HydroCon	Sonic	35.00	33.59	4	PVC	0.01	20	0.45	14.64-34.64	644.30
MW-11	4/14/2017	Farallon	Air Rotary	22.30	22.00	4	PVC	0.02	10	-	12-22	658.00
MW12	4/2/2018	HydroCon	Sonic	20.00	19.52	4	PVC	0.01	15	0.23	4.63 - 19.63	658.27
MW13	3/29/2018	HydroCon	Sonic	50.00	19.80	4	PVC	0.01	15	0.23	4.91 - 19.91	657.04
MW14	3/30/2018	HydroCon	Sonic	35.00	20.02	4	PVC	0.01	15	0.23	5.23 - 20.23	657.15
MW15	4/12/2018	HydroCon	Sonic	35.10	35.10	4	PVC	0.01	25	0.23	10.33 - 35.33	654.99
MW16	4/5/2018	HydroCon	Sonic	30.00	29.15	4	PVC	0.01	20	0.23	9.28 - 29.28	656.93
MW17	4/4/2018	HydroCon	Sonic	35.00	29.41	4	PVC	0.01	20	0.23	9.52 - 29.52	655.55
MW18	4/11/2018	HydroCon	Sonic	35.00	34.65	4	PVC	0.01	20	0.23	15.86 - 35.86	654.51
MW19	4/5/2018	HydroCon	Sonic	35.00	31.48	4	PVC	0.01	20	0.23	11.66 - 31.66	653.31
MW20	4/10/2018	HydroCon	Sonic	30.00	29.50	4	PVC	0.01	20	0.23	9.79 - 29.79	650.85
MW21	4/9/2018	HydroCon	Sonic	35.00	32.10	4	PVC	0.01	20	0.23	12.30 - 32.30	643.88
MW22	4/13/2018	HydroCon	Sonic	40.00	39.10	4	PVC	0.01	25	0.23	9.19 - 34.19	641.85
MW23	3/29/2018	HydroCon	Sonic	25.00	22.04	4	PVC	0.01	15	0.23	7.13 - 22.13	656.91
MW24	8/6/2018	HydroCon	Sonic	35.00	34.25	4	PVC	0.01	20	0.45	14.17-34.17	644.38
MW25	8/7/2018	HydroCon	Sonic	35.00	32.96	4	PVC	0.01	20	0.45	12.81-32.81	645.57
MW26	8/8/2018	HydroCon	Sonic	35.00	32.52	4	PVC	0.01	20	0.45	13.54-33.54	646.65
MW27	8/9/2018	HydroCon	Sonic	40.00	38.74	4	PVC	0.01	25	0.45	13.56-38.56	649.00
MW28	8/10/2018	HydroCon	Sonic	40.00	38.74	4	PVC	0.01	25	0.45	13.62-38.62	650.64
MW29	8/13/2018	HydroCon	Sonic	40.00	39.11	4	PVC	0.01	25	0.45	14.05-39.05	652.34
MW30	8/14/2018	HydroCon	Sonic	40.00	39.79	4	PVC	0.01	25	0.45	14.67-39.67	652.83
MW31	8/15/2018	HydroCon	Sonic	40.00	39.28	4	PVC	0.01	25	0.45	14.11-39.11	653.97
MW32	8/17/2018	HydroCon	Sonic	35.00	34.02	4	PVC	0.01	25	0.45	8.95-33.95	655.83
BH-1	3/25/2017	EPI	Air Rotary	30.00	30.00	2	PVC	0.01	10	-	20-30	652.17
BH-2	3/25/2017	EPI	Air Rotary	35.00	35.00	2	PVC	0.01	15	-	20-35	653.77
BH-3	3/26/2017	EPI	Air Rotary	30.00	30.00	2	PVC	0.01	15	-	15-30	648.76
RW-1	4/10/2017	Farallon	Air Rotary	30.00	30.00	3	PVC	0.02	15	-	15-30	650.42

Notes:

feet[1] = Elevation is relative to NGVD88

bgs = below ground surface

PVC = polyvinyl chloride

Table 2

Soil and Sediment Analytical Results - Fuels and BTEX
Coleman Oil Site
Wenatchee, Washington

			Fuels			BTEX			
			GRPH	DRPH	ORPH	Benzene	Toluene	Ethylbenzene	Total Xylenes
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
WA MTCA Method A Cleanup Level for Soil			**30/100**	**2,000**	**2,000**	**0.3**	**7**	**6**	**9**
Benzene (Non Detect)			**100**						
Benzene (Detect)			**30**						
Field ID	**Sample Depth (feet)**	**Date**							
Well Installations									
MW24-15	15	8/6/2018	<5.29	< 25.0	< 50.0	<0.0106	<0.0529	<0.0265	<0.0794
MW24-22	22	8/6/2018	**109**	< 25.0	< 50.0	<0.0112	<0.0559	<0.0279	0.110
MW24-28	28	8/6/2018	**179**	< 25.0	< 50.0	<0.0131	<0.0653	<0.0326	<0.0979
MW24-35	35	8/6/2018	19.5	73	<50.0	<0.0114	<0.0572	<0.0286	0.117
MW25-19	19	8/7/2018	<6.67	< 25.0	< 50.0	<0.0133	<0.0667	<0.0334	<0.100
MW25-22	22	8/7/2018	6.7	92.7	<50.0	<0.0112	<0.0562	<0.0281	<0.0843
MW25-35	35	8/7/2018	7.98	239	323	<0.0131	<0.0653	<0.0326	<0.0979
MW26-15	15	8/8/2018	<6.18	<25.0	<50.0	<0.0124	<0.0618	<0.0309	<0.0928
MW26-19	19	8/8/2018	7.69	34.1	< 50.0	<0.0113	<0.0563	<0.0282	<0.0845
MW26-29	29	8/8/2018	**33.4**	94.8	< 50.0	<0.0125	<0.0627	<0.0314	<0.0941
MW26-33	33	8/8/2018	<7.39	228	288	<0.0148	<0.0739	<0.0369	<0.111
MW27-15	15	8/9/2018	<6.83	< 25.0	< 50.0	<0.0137	<0.0683	<0.0341	0.102
MW27-19	19	8/9/2018	**126**	263	<50.0	<0.0123	<0.0616	0.0992	0.631
MW27-39	39	8/9/2018	<6.18	69.4	65.9	<0.0124	<0.0618	<0.0309	<0.0926
MW28-19	19	8/10/2018	<5.88	< 25.0	< 50.0	<0.0118	<0.0588	<0.0294	0.169
MW28-25	25	8/10/2018	<7.04	< 25.0	< 50.0	<0.0141	<0.0704	0.0528	0.317
MW28-39	39	8/10/2018	28.2	27.8	<50.0	<0.0105	<0.0523	0.0638	0.233
MW29-15	15	8/13/2018	< 5.66	< 25.0	< 50.0	< 0.0113	< 0.0566	< 0.0283	< 0.0849
MW29-24	24	8/13/2018	**33.6**	81.2	< 50.0	< 0.0149	< 0.0745	< 0.0373	< 0.112
MW29-34	34	8/13/2018	<5.24	< 25.0	< 50.0	< 0.0105	< 0.0524	< 0.0262	< 0.0786
MW29-40	40	8/13/2018	< 5.15	< 25.0	< 50.0	< 0.0103	< 0.0515	< 0.0258	< 0.0773
MW30-15	15	8/14/2018	< 5.86	< 25.0	< 50.0	< 0.0117	< 0.0586	< 0.0293	< 0.0879
MW30-20	20	8/14/2018	**132**	424	< 50.0	< 0.0123	< 0.0617	< 0.0308	< 0.0925
MW30-28	28	8/14/2018	**618**	1,900	< 50.0	< 0.0113	< 0.0563	0.0473	0.123
MW30-32	32	8/14/2018	**96.2**	407	< 50.0	< 0.0112	< 0.0558	< 0.0279	< 0.0837
MW30-40	40	8/14/2018	< 6.80	266	250	< 0.0136	< 0.0680	< 0.0340	0.109
MW31-19	19	8/15/2018	< 5.21	< 25.0	< 50.0	< 0.0104	< 0.0521	< 0.0261	< 0.0782
MW31-28	28	8/15/2018	**125**	564	< 50.0	< 0.00904	< 0.0452	< 0.0226	< 0.0678
MW31-38	38	8/15/2018	< 5.23	< 25.0	< 50.0	< 0.0105	< 0.0523	< 0.0262	< 0.0785
MW32-10	10	8/17/2018	< 5.09	< 25.0	< 50.0	< 0.0102	< 0.0509	< 0.0255	< 0.0764
MW32-14	14	8/17/2018	**1,930**	**3,400**	< 438	< 0.00950	< 0.0475	< 0.0238	< 0.0713
MW32-28	28	8/17/2018	< 5.38	< 25.0	< 50.0	< 0.0108	< 0.0538	< 0.0269	< 0.0808
MW09-35	35	8/16/2018	12.8	176	117	< 0.0132	< 0.0661	0.102	0.495
MW10-35	35	8/16/2018	< 4.76	50.6	< 50.0	< 0.00953	< 0.0476	< 0.0238	< 0.0714

Notes

Red denotes concentration in excess of MTCA Method Cleanup Level for Soil.
GRPH (gasoline range petroleum hydrocarbons) analyzed by Method NWTPH-Gx.
DRPH (diesel range petroleum hydrocarbons) analyzed by Method NWTPH-Dx.
ORPH (oil range petroleum hydrocarbons) analyzed by Method NWTPH-Dx.
Volatiles analyzed by EPA Method 8260C.
MTCA Method A Cleanup Levels, WAC 173-340-720 through 173-340-760, revised Nov., 2007
< = less than method reporting limit shown
--- = not analyzed

HydroCon

Table 3

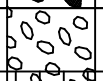
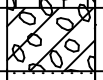
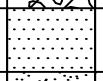
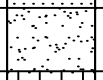
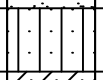
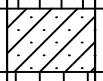
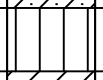
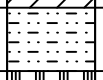
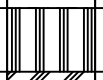
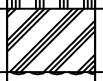
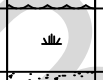
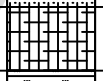
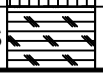
Slug Test Data
Depth to Water (feet) verses Time
August 20, 2018
Coleman Oil Site
Wenatchee, Washington

Observation Well	MW09R	MW10R	MW24	MW25	MW26	MW27	MW28	MW29	MW30	MW31	MW32
Static DTW	19.02	24.33	26.09	27.56	25.2	24.62	25.8	36.14	35.23	35.15	12.33
Time											
Initial W/ Slug	18.76	24.06	25.94	26.95	24.88	24.32	25.48	35.86	34.91	34.85	12.04
Plus I Minute	19.02	24.15	26.09	26.98	24.9	24.34	25.52	35.87	34.94	34.87	12.11
Plus 2 Minutes	19.02	24.19	26.09	26.98	24.91	24.35	25.53	35.87	34.95	34.88	12.15
Plus 5 Minutes	19.02	24.22	26.09	26.98	24.92	24.36	25.57	35.88	34.95	34.88	12.18
Plus 10 Minutes	19.02	24.28	26.09	26.98	24.92	24.36	25.61	35.88	34.95	34.88	12.22
Initial DTW Change	0.26	0.27	0.15	0.61	0.32	0.3	0.32	0.28	0.32	0.3	0.29
Final DTW Change	0	0.05	0	0.58	0.28	0.26	0.19	0.26	0.28	0.27	0.11
Recharge over 10 Minutes	0.26	0.22	0.15	0.03	0.04	0.04	0.13	0.02	0.04	0.03	0.18
Relative Flow	High	High	High	Low	Low	Low	Medium	Low	Low	Low	High
Well Development Recharge Rate (gpm)[1]	0.108	1.345	1.300	0.009	0.030	0.012	0.028	<0.005	0.014	<0.005	0.130

Notes:
The slug test was perfromed prior to developing MW09R and MW32.
DTW = depth to water
[1]Calculated from time for the well to recover 1 foot during well development. Data is on the Well Development Forms (Appendix B).

Appendix A
Boring Logs

GUIDE TO BOREHOLE LOGS**

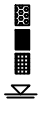
MAJOR DIVISIONS		SYMBOLS		TYPICAL NAMES
		GW		Well-graded gravels or gravel-sand mixtures, little to no fines.
COARSE GRAINED SOILS (more than 1/2 of soil >No. 200 sieve size)	GRAVELS more than 50% coarse fraction > no.4 sieve	GP		Poorly-graded gravels or gravel-sand mixtures, little to no fines.
		GM		Silty gravels, gravel-sand-silt mixtures.
		GC		Clayey gravels or gravel-sand-clay mixtures
	SANDS less than 50% coarse fraction > no.4 sieve	SW		Well-sorted sands or gravelly sands, little to no fines.
		SP		Poorly-sorted sands or gravelly sands, little to no fines.
		SM		Silty sands, sand-silt mixtures.
		SC		Clayey sands, sand-clay mixtures.
FINED GRAINED SOILS (more than 1/2 of soil < No. 200 sieve size)	SILTS & CLAYS Liquid Limit* less than 50%	ML		Inorganic silts and very fine sands, silty or clayey fine sands or clayey silts with slight plasticity.
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy or silty clays, lean clays.
		OL		Organic silts and organic silty clays of low plasticity.
	SILTS & CLAYS Liquid Limit* greater than 50%	MH		Inorganic silts, micaceous or diatomaceous fine sand or silty soils, elastic silts.
		CH		Inorganic clays of high plasticity, fat clays.
		OH		Organic clays of medium to high plasticity, organic silty clay, organic silts.
HIGHLY ORGANIC SOILS		Pt		Peat or other highly organic soils.
		Conc		Concrete
		Asph		Asphalt
		Mud		Mudstone
		SiltS		Siltstone
		SandS		Sandstone

* Liquid Limit represents the moisture content (in percent) of a soil at which point the soil no longer behaves like a plastic and starts to behave like a liquid.

BORING LOG SYMBOLS

SHEEN TYPES:
NS - No Sheen observed
SS - Slight Sheen observed (Spotty coverage of sheen pan, no iridescence)
MS - Moderate Sheen (full coverage of sheen pan, no iridescence) pan, iridescent)
HS - Heavy Sheen (full coverage of sheen

SAMPLE PLASTICITY (FINE-GRAINED SOILS):
Nonplastic - Cannot be rolled at any moisture content
Low - Barely rolled, lump cannot be formed when drier than plastic limit
Medium - Easily rolled, lump crumbles when drier than plastic limit
High - Easily rolled yet takes considerable time to reach the plastic limit, molded shape can be formed without crumbling when drier than the plastic limit



SAMPLE LOCATION
SAMPLE INTERVAL
SAMPLE RECOVERY
GROUNDWATER, FIRST OBSERVED

SAMPLE TYPES:
SS - Split Spoon
G - Grab
ST - Shelby Tube
GS - Geoprobe Sampler

PERCENTAGES:
Trace - Particles are present but estimated to be less than 5% Few - 5 to 10%
Little - 15 to 25%
Some - 30 to 45%
Mostly - 50 to 100%

PARTICLE SIZE RANGE (COARSE-GRAINED SOILS):
Gravel - Fine, Coarse
Sand - Fine, Medium, Coarse

SAMPLE MOISTURE:
Dry - No moisture, dry to touch
Moist - Damp but no visible moisture
Wet - Visible free water

**Based on Unified Soil Classification System and ASTM Standard D2487 and D2488

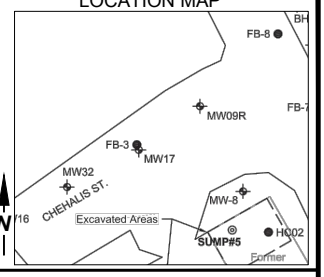
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW09R

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-15-18

LOCATION MAP



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
ASPHALT at ground surface	0							
Overdrill existing well MW09 to 25 feet bgs.								
	5							
	10							
	15							
	20							
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic material, dry, no hydrocarbon odor.	25				0.1			
SANDSTONE, gray, medium to fine grained, massive, well cemented, micacious, dry, no hydrocarbon odor.					0.1			
	30				0.1			
					0.1			
					0.1			
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic material, dry, no hydrocarbon odor.	35			MW09R-35	0.1			
BOTTOM OF BORING AT 35' bgs.								

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 34.04
Sump: 33.59 - 34.04
Screen: 8.59 - 33.59
Casing: 0 - 8.59
Backfill:
Sand Pack: 7.59 - 34.04
Bentonite: 3 - 7.59
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 15', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 653.55
GROUND SURFACE ELEVATION: 654.99
COORDINATES: 153008.23
COORDINATES: 1771765.88

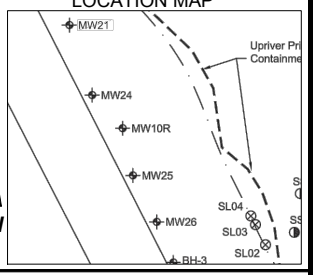
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW10R

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-16-18

LOCATION MAP



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
GRAVEL at ground surface Overdrill existing well MW10 to 30 feet bgs.	0							
	5							
	10							
	15							
	20							
SANDSTONE, gray, medium to fine grained, massive, well cemented, micacious, dry, no hydrocarbon odor.	25				0.1			
	30				0.1 0.1 0.1 0.1			
BOTTOM OF BORING AT 35' bgs.	35			MW10R-35	0.1			

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 35.09
Sump: 34.64 - 35.09
Screen: 14.6 - 34.64
Casing: 0 - 14.64
Backfill:
Sand Pack: 13.64 - 35.09
Bentonite: 3 - 13.64
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 15', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 644.3
GROUND SURFACE ELEVATION: 645.8
COORDINATES: 153239.86
COORDINATES: 1771728.85

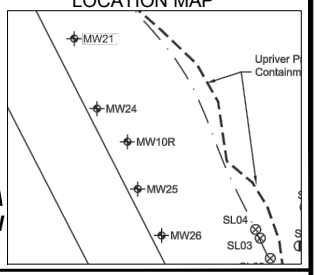
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW24

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-06-18

LOCATION MAP



DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)	DEPTH (FT.)	SAMPLE ID	PID	FIRST WATER	BLOW COUNTS
SAND (SP/SM) with silt, light brown (10YR 7-4), 80% fine sand, 10% non-plastic silt, 10% subrounded gravel and cobbles up to 4" in diameter, dry, no hydrocarbon odor.	0		0.0		
			0.1		
	5		0.1		
SANDY GRAVEL (GP), brown, 55% subrounded gravel and cobbles up to 4" in diameter, 40% fine sand, 5% non-plastic silt, dry, no hydrocarbon odor.			0.1		
SAND (SP), light brown (10YR 7-6), 95% medium to fine sand, 5% non-plastic silt, dry, no hydrocarbon odor.	10		0.1		
			0.0		
			0.0		
	15	MW24-15	0.0		
Boulder from 16 feet bgs to 18.5 feet bgs.			0.0		
SILT with sand (ML), brown (10YR 6-3), 65% non-plastic silt, 35% fine sand, slight laminated structure, dry, no hydrocarbon odor, grades to siltstone, **Chumstick Formation at 21.5 feet bgs.**	20		0.0		
		MW24-22	94.0		
SANDSTONE, light gray, medium to fine grained, massive, friable, moderately cemented, dry, strong hydrocarbon odor.			9.9		
	25		0.4		
MUDSTONE, brownish gray, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.			0.1		
		MW24-28	2.1		
	30		0.9		
SANDSTONE, light gray, fine grained, massive, friable, well cemented, dry, no hydrocarbon odor.			0.9		
MUDSTONE, black to dark gray, laminated, planer fracturing, waxy, shale like, dry, no hydrocarbon odor.	35	MW24-35	0.0		
BOTTOM OF BORING AT 35' bgs.					

BOREHOLE/WELL CONSTRUCTION DETAILS

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 34.62
Sump: 34.17 - 34.62
Screen: 14.17 - 34.17
Casing: 0 - 14.17
Backfill:
Sand Pack: 13.17 - 34.62
Bentonite: 3 - 13.17
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 20', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 644.38
GROUND SURFACE ELEVATION: 644.75
COORDINATES: 153267.02
COORDINATES: 1771717.86

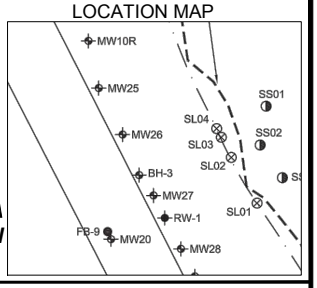
Hydro Con

Phone: 360-703-6079

WELL/BORING NUMBER MW25

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-06-18

LOCATION MAP



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
SAND (SP/SM) with silt, light brown (10YR 7-4), 80% fine sand, 10% non-plastic silt, 10% subrounded gravel and cobbles up to 2" in diameter, dry, no hydrocarbon odor.	0				0.0			
					0.1			
	5				0.1			
SILT with sand (ML), light brown (10YR 7-4), 50% non-plastic silt, 35% fine sand, 15% subrounded gravel and cobbles up to 2" in diameter, dry, no hydrocarbon odor.					0.1			
SILTY SAND (SM), light brown (10YR 7-6), 70% medium to fine sand, 15% non-plastic silt, 15% subrounded gravel up to 3/4" in diameter, dry, no hydrocarbon odor.	10				0.1			
SILT with sand (ML), brown (10YR 5-1), 50% non-plastic silt, 45% fine sand, 5% subrounded gravel up to 3/4" in diameter, dry, no hydrocarbon odor.					0.0			
SILTY SAND (SM), light brown (10YR 6-3), 70% medium to fine sand, 25% non-plastic silt, 5% subrounded gravel up to 5/8" in diameter, grades to sand with silt, dry, no hydrocarbon odor.	15				0.0			
MUDSTONE, brownish gray (10YR 8-2), laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.					0.0			
SANDSTONE, reddish brown (10YR 7-3), massive, well cemented, dry, strong hydrocarbon odor at 22 feet bgs.	20			MW25-19	0.0			
				MW25-22	136.0			
SILTSTONE, dark gray, fine grained, cohesive, well cemented, fracture along 1" thick planes, dry, no hydrocarbons odor.					1.0			
MUDSTONE, brownish gray, laminated, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.	25				10.0			
SANDSTONE, light gray, fine grained, massive, friable, well cemented, dry, no hydrocarbon odor.					0.0			
					0.0			
	30				0.0			
MUDSTONE, black to dark gray, laminated, planer fracturing, waxy, dry, no hydrocarbon odor.					0.0			
BOTTOM OF BORING AT 35' bgs.	35			MW25-35	0.0			

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 33.26
Sump: 32.81 - 33.26
Screen: 12.81 - 32.81
Casing: 0 - 12.81
Backfill:
Sand Pack: 11.81 - 33.26
Bentonite: 3 - 11.81
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 20', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 645.87
GROUND SURFACE ELEVATION: 645.57
COORDINATES: 153217.91
COORDINATES: 1771738.96

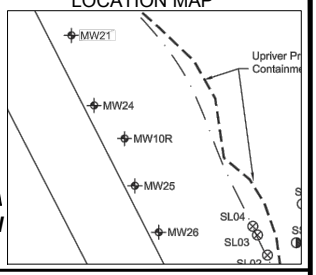
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW26

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-08-18

LOCATION MAP



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
GRAVELLY SAND (SP), dark brown (10YR 5-6), 65% fine sand, 25% subrounded gravel up to 1" in diameter, 10% non-plastic silt, dry, no hydrocarbon odor.	0				0.0			
					0.1			
	5				0.1			
					0.1			
GRAVEL (GP), brown, 100% subrounded gravel and cobbles up to 4" in diameter, dry, no hydrocarbon odor.					0.1			
	10				0.0			
SILTY SAND (SM), brown (10YR 8-3), 65% medium to fine sand, 35% non-plastic silt, dry, no hydrocarbon odor.								
SAND (SP), brown (10YR 8-3), 90% fine sand, 10% non-plastic silt, dry, no hydrocarbon odor.								
SANDY SILT (ML), brown (10YR 5-1), 50% non-plastic silt, 45% fine sand, 5% subrounded gravel up to 3/4" in diameter, dry, no hydrocarbon odor.	15			MW26-15	0.0			
					0.0			
MUDSTONE, reddish gray (2.5YR 5-6), laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.				MW26-19	125			
SANDSTONE, brown (10YR 8-3), massive, well cemented, dry, strong hydrocarbon odor at 19 feet bgs.	20				15.7			
					4.5			
					13.3			
MUDSTONE, reddish brown, laminated, friable, planer fracturing, waxy, organic inclusions, dry, strong hydrocarbon odor.				MW26-24	77.3			
SANDSTONE, gray (7.5BG 8-1), medium grained, massive, well cemented, micacious, dry, no hydrocarbon odor.	25				0.0			
					0.0			
	30				0.0			
MUDSTONE, blackish gray (10YR 1-2), laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.				MW26-33	0.0			
SANDSTONE, gray (7.5BG 8-1), medium grained, massive, well cemented, micacious, dry, no hydrocarbon odor.								
	35				0.0			
BOTTOM OF BORING AT 35' bgs.								

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 33.99
Sump: 33.54 - 33.99
Screen: 13.54 - 33.54
Casing: 0 - 13.54
Backfill:
Sand Pack: 12.54 - 33.99
Bentonite: 3 - 12.54
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 20', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 646.65
GROUND SURFACE ELEVATION: 647.12
COORDINATES: 153194.61
COORDINATES: 1771746.27

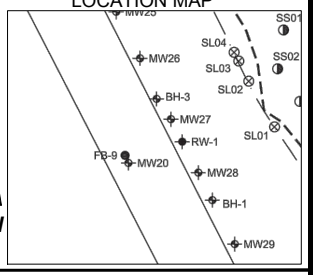
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW27

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-09-18

LOCATION MAP



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
GRAVELLY SAND (SP), brown (10YR 6-3), 75% medium to fine sand, 15% subrounded gravel up to 2" in diameter, 10% non-plastic silt, dry, no hydrocarbon odor.	0				0.0			
	5				0.3 3.5			
					3.7			
SILTY GRAVEL (GM), brownish gray (10YR 6-2), 50% subrounded gravel up to 2" in diameter and cobbles up to 4" in diameter, 40% non-plastic silt, 10% fine sand, dry, no hydrocarbon odor.	10				3.4 0.3			
SANDY SILT (ML), brown (10YR 6-2), 55% non-plastic silt, 45% fine sand, dry, no hydrocarbon odor.								
MUDSTONE, brownish gray (10YR 5-3), laminated, friable, planer fracturing, waxy, dry, strong hydrocarbon odor at 19 feet bgs.	15			MW27-15	0.3 2.6			
MUDSTONE, reddish gray (2.5YR 5-6), laminated, friable, planer fracturing, waxy, organic inclusions, dry, strong hydrocarbon odor at 19 feet bgs.					7.5			
				MW27-19	265.7			
	20				0.6			
SANDSTONE, brown (10YR 8-3), massive, well cemented, dry, no hydrocarbon odor. Note: Color change to grayish brown at 23 feet to 23.5 feet bgs.					0.4			
	25				0.3			
					0.3			
	30				0.4			
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.					0.1			
SANDSTONE, gray (N8), massive, well cemented, micacious, dry, no hydrocarbon odor.	35				0.1			

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.01
Sump: 38.56 - 39.01
Screen: 13.56 - 38.56
Casing: 0 - 13.56
Backfill:
Sand Pack: 12.56 - 39.01
Bentonite: 3 - 12.56
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

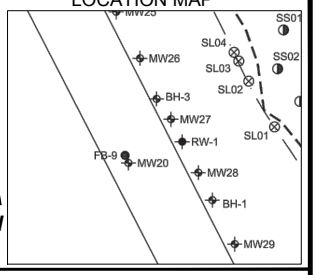
CASING ELEVATION: 649.00
GROUND SURFACE ELEVATION: 649.27
COORDINATES: 153163.36
COORDINATES: 1771760.51

HydroCon
Phone: 360-703-6079

WELL/BORING NUMBER: MW27

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-09-18

LOCATION MAP



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
SANDSTONE, gray (N8), massive, well cemented, micacious, dry, no hydrocarbon odor.	35				0.1			
MUDSTONE, black to blackish gray (N1), laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.					0.1			
				MW27-39	0.2			
BOTTOM OF BORING AT 40' B.G.S.	40				0.2			
	45							
	50							
	55							
	60							
	65							
	70							

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.01
Sump: 38.56 - 39.01
Screen: 13.56 - 38.56
Casing: 0 - 13.56
Backfill:
Sand Pack: 12.56 - 39.01
Bentonite: 3 - 12.56
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 649.00
GROUND SURFACE ELEVATION: 649.27
COORDINATES: 153163.36
COORDINATES: 1771760.51

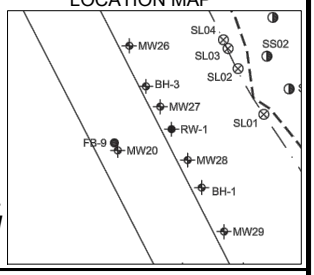
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW28

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-10-18

LOCATION MAP



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
SAND (SP) with gravel, brown (10YR 6-3), 80% medium to fine sand, 10% subrounded gravel up to 2" in diameter, 10% non-plastic silt, dry, no hydrocarbon odor.	0				0.0			
					0.1			
No recovery due to boulder between 5 feet and 8 feet bgs.	5				0.1			
GRAVEL (GP), brown, 95% subrounded gravel up to 3" in diameter, 5% fine sand/silt matrix, dry, no hydrocarbon odor.					0.1			
SANDY SILT (ML), dark brown, 70% non-plastic silt, 25% fine sand, 5% subrounded gravel up to 1" in diameter, dry, no hydrocarbon odor.	10				0.1			
					0.0			
	15				0.0			
SAND (SP/SM) with silt, brown, 85% medium to fine sand, 10% non-plastic silt, 10% subrounded gravel up to 5/8" in diameter, dry, no hydrocarbon odor.					0.0			
MUDSTONE, brownish gray (10YR 5-3), laminated, friable, planer fracturing, waxy, dry, no hydrocarbon odor, **Chumstick Formation**.	20			MW28-19	0.0			
					0.0			
SAND (SP), brown, 95% medium to fine sand, 5% non-plastic silt, dry, no hydrocarbon odor.	25			MW28-25	0.0			
MUDSTONE, brownish gray (10YR 5-3), laminated, friable, planer fracturing, waxy, dry, no hydrocarbon odor. Periodic 0.5-foot thick sandstone interbedding.					0.0			
	30				0.0			
SANDSTONE, gray (N8), massive, well cemented, micacious, dry, no hydrocarbon odor.					0.0			
Boulder from 34 feet to 35.5 feet bgs.	35				0.0			

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.07
Sump: 38.62 - 39.07
Screen: 13.62 - 38.62
Casing: 0 - 13.62
Backfill:
Sand Pack: 12.62 - 39.07
Bentonite: 3 - 12.62
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 654.64
GROUND SURFACE ELEVATION: 650.97
COORDINATES: 153138.13
COORDINATES: 1771770.55

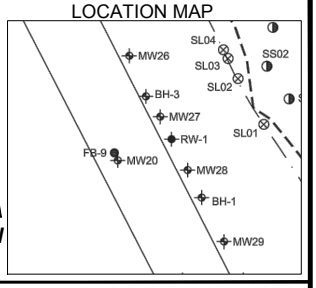
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW28

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-10-18

LOCATION MAP



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
Boulder from 34 feet to 35.5 feet bgs.	35				0.0			
SANDSTONE, gray (N8), massive, well cemented, micacious, dry, no hydrocarbon odor.				MW28-39	0.0			
					0.0			
BOTTOM OF BORING AT 40' B.G.S.	40				0.0			
	45							
	50							
	55							
	60							
	65							
	70							

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.07
Sump: 38.62 - 39.07
Screen: 13.62 - 38.62
Casing: 0 - 13.62
Backfill:
Sand Pack: 12.62 - 39.07
Bentonite: 3 - 12.62
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 654.64
GROUND SURFACE ELEVATION: 650.97
COORDINATES: 153138.13
COORDINATES: 1771770.55

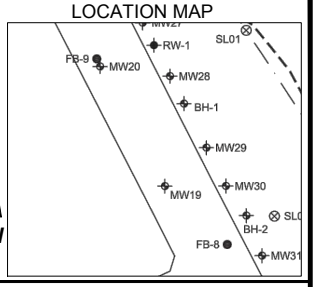
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW29

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-13-18

LOCATION MAP



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
SAND (SP/SM) with silt, brown (10YR 4-2), 70% medium to fine sand, 20% subrounded gravel up to 3/4" in diameter, 10% non-plastic silt, dry, no hydrocarbon odor.	0				0.0			
					0.0			
	5				0.0			
					0.0			
GRAVEL (GP), brown, 95% subrounded gravel up to 4" in diameter, 5% fine sand/silt matrix, dry, no hydrocarbon odor.	10				0.1			
SAND (SP), brown (10YR 6-6), 95% medium to fine sand, 5% non-plastic silt, dry, no hydrocarbon odor.					0.0			
GRAVEL (GP), brown, 95% subrounded gravel up to 4" in diameter, 5% fine sand/silt matrix, dry, no hydrocarbon odor.	15			MW29-15	0.0			
MUDSTONE, brownish gray (10YR 6-4), laminated, friable, planer fracturing, waxy, dry, no hydrocarbon odor, **Chumstick Formation**.					0.0			
SANDSTONE, brown (10YR 6-1), medium to fine grained, massive, well cemented, moist, sheen and free product on soil at 24 feet bgs, strong hydrocarbon odor.	20				0.0			
				MW29-24	42.8			
	25				2.1			
					1.8			
MUDSTONE, dark brown (10YR 3-2), laminated, friable, planer fracturing, waxy, dry, no hydrocarbon odor.	30				9.2			
				MW29-34	13.0			
	35				0.5			

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.50
Sump: 39.05 - 39.50
Screen: 14.05 - 39.05
Casing: 0 - 14.05
Backfill:
Sand Pack: 13.05 - 39.50
Bentonite: 3 - 13.05
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 654.64
GROUND SURFACE ELEVATION: 650.97
COORDINATES: 153102.96
COORDINATES: 1771791.46

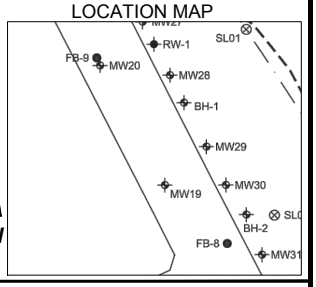
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW29

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-13-18

LOCATION MAP



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
SANDSTONE, gray (N8), massive, well cemented, micacious, dry, no hydrocarbon odor.	35				0.5			
					0.1			
					0.1			
BOTTOM OF BORING AT 40' B.G.S.	40			MW29-40	0.1			
	45							
	50							
	55							
	60							
	65							
	70							

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.50
Sump: 39.05 - 39.50
Screen: 14.05 - 39.05
Casing: 0 - 14.05
Backfill:
Sand Pack: 13.05 - 39.50
Bentonite: 3 - 13.05
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 654.64
GROUND SURFACE ELEVATION: 650.97
COORDINATES: 153102.96
COORDINATES: 1771791.46

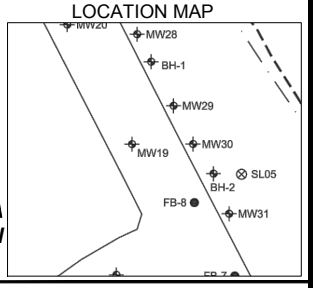
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW30

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-14-18

LOCATION MAP



DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)	DEPTH (FT.)	SAMPLE ID	PID	FIRST WATER	BLOW COUNTS
SAND (SP/SM) with silt, brown (10YR 4-2), 80% medium to fine sand, 10% subrounded gravel up to 2" in diameter, 10% non-plastic silt, dry, no hydrocarbon odor.	0		0.0		
			0.0		
No recovery due to boulder between 5 feet and 10 feet bgs.	5		0.0		
			0.0		
	10		0.0		
SANDY GRAVEL (GP), brown, 70% subrounded gravel up to 3" in diameter, 20% fine sand, 10% non-plastic silt, dry, no hydrocarbon odor.			0.0		
SAND (SP), brown (10YR 6-6), 90% medium to fine sand, 5% subrounded gravel and cobbles up to 4" in diameter, 5% non-plastic silt, dry, no hydrocarbon odor.	15	MW30-15	0.1		
SILTY GRAVEL (GM), dark brown, 40% subrounded gravel up to 3" in diameter, 40% non-plastic silt, 20% fine sand, dry, no hydrocarbon odor.					
SANDY SILT (ML), brown , 50% non-plastic silt, 40% fine sand, 10% subrounded gravel up to 1" in diameter, dry, no hydrocarbon odor.			1.9		
MUDSTONE, dark brown (10YR 3-2), laminated, friable, planer fracturing, waxy, dry, no hydrocarbon odor. **Chumstick Formation.**	20	MW30-20	102.5		
No recovery due to boulder between 20 feet and 21 feet bgs.			142.5		
MUDSTONE, greenish blue (10YR 7-4), laminated, friable, planer fracturing, waxy, fine, sand interbeds, dry, strong hydrocarbon odor.	25	MW30-25	180.3		
SANDSTONE, gray, medium to fine grained, massive, weakly cemented, friable, micacious, dry, strong hydrocarbon odor.		MW30-28	265.9		
	30		227.4		
		MW30-32	203.1		
	35		0.1		

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 40.12
Sump: 39.67 - 40.12
Screen: 14.67 - 39.67
Casing: 0 - 14.67
Backfill:
Sand Pack: 13.67 - 40.12
Bentonite: 3 - 13.67
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 654.64
GROUND SURFACE ELEVATION: 650.97
COORDINATES: 153081.45
COORDINATES: 1771804.58

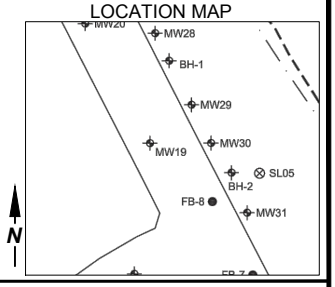
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW30

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-14-18

LOCATION MAP



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
SANDSTONE, gray, medium to fine grained, massive, weakly cemented, friable, micacious, dry, strong hydrocarbon odor.	35				1.1			
					0.1			
MUDSTONE, black, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.					0.1			
BOTTOM OF BORING AT 40' B.G.S.	40			MW30-40	0.1			
	45							
	50							
	55							
	60							
	65							
	70							

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 40.12
Sump: 39.67 - 40.12
Screen: 14.67 - 39.67
Casing: 0 - 14.67
Backfill:
Sand Pack: 13.67 - 40.12
Bentonite: 3 - 13.67
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 654.64
GROUND SURFACE ELEVATION: 650.97
COORDINATES: 153081.45
COORDINATES: 1771804.58

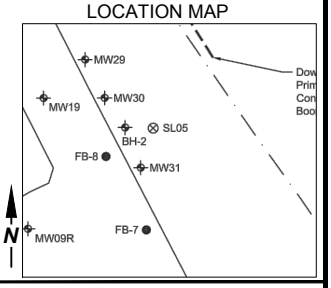
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW31

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-15-18

LOCATION MAP



DESCRIPTION (USCS Classification, Depth Interval, Color, Grain Size, Plasticity, Shapes, Mineral Composition, Density or Consistency, Moisture, Odor, Geological Interpretation)	DEPTH (FT.)	SAMPLE ID	PID	FIRST WATER	BLOW COUNTS
GRAVEL at ground surface	0		0.0		
No recovery due to boulder between 5 feet and 10 feet bgs.			0.0		
SAND (SP), reddish brown, 85% medium to fine sand, 10% subrounded gravel and cobbles up to 3" in diameter, 5% non-plastic silt, dry, no hydrocarbon odor.	5		0.1		
			0.1		
	10		0.1		
			0.1		
SANDY GRAVEL (GP), dark brown, 50% subrounded gravel up to 3" in diameter, 30% fine sand, 10% non-plastic silt, dry, no hydrocarbon odor.	15		0.1		
SANDY SILT (ML), brown , 55% non-plastic silt, 40% fine sand, 5% subrounded gravel up to 1" in diameter, dry, no hydrocarbon odor.			0.6		
		MW31-19			
SAND (SP), brown, 90% medium to fine sand, 10% non-plastic silt, dry, no hydrocarbon odor.	20		0.4		
SILTY SAND (SP/SM), dark brown, 60% medium to fine sand, 35% non-plastic silt, 5% subrounded gravel up to 2" in diameter, organic material/rootlets, dry, no hydrocarbon odor.			0.3		
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor. **Chumstick Formation.**	25				
SANDSTONE, yellowish brown, medium to fine grained, massive, moderately cemented, micacious, dry, strong hydrocarbon odor.			54.7		
		MW31-28	265.2		
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.	30		3.8		
SANDSTONE, yellowish brown, medium to fine grained, massive, moderately cemented, micacious, dry, no hydrocarbon odor.			0.3		
	35		0.4		

BOREHOLE/WELL CONSTRUCTION DETAILS

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.56
Sump: 39.11 - 39.56
Screen: 14.11 - 39.11
Casing: 0 - 14.11
Backfill:
Sand Pack: 13.11 - 39.56
Bentonite: 3 - 13.11
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 9 50lbs bag 10/20 Sand
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 653.97
GROUND SURFACE ELEVATION: 654.25
COORDINATES: 153042.49
COORDINATES: 1771823.74

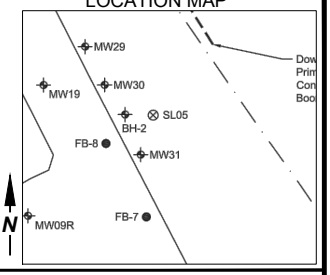
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER: MW31

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-15-18

LOCATION MAP



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
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.	35				0.4			
SANDSTONE, gray, medium to fine grained, massive, well cemented, micacious, dry, no hydrocarbon odor.				MW31-38	0.1			
BOTTOM OF BORING AT 40' B.G.S.	40				0.1			
	45							
	50							
	55							
	60							
	65							
	70							

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 39.56
Sump: 39.11 - 39.56
Screen: 14.11 - 39.11
Casing: 0 - 14.11
Backfill:
Sand Pack: 13.11 - 39.56
Bentonite: 3 - 13.11
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 25', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 653.97
GROUND SURFACE ELEVATION: 654.25
COORDINATES: 153042.49
COORDINATES: 1771823.74

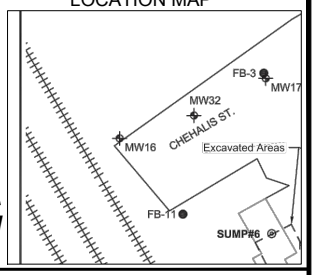
HydroCon

Phone: 360-703-6079

WELL/BORING NUMBER MW32

PROJECT NAME: Coleman Oil - Wenatchee
PROJECT NUMBER: 2017-074
PROJECT LOCATION: Wenatchee, WA
LOGGED BY: R. Honsberger
REVIEWED BY: C. Hultgren
DATE: 08-17-18

LOCATION MAP



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
GRAVEL at ground surface	0				0.0			
SILTY SAND (SM), dark brown, 50% fine sand, 30% non-plastic silt, 20% subrounded gravel up to 2" in diameter, organic material/rootlets, dry no hydrocarbon odor.					0.1			
	5				0.1			
					0.1			
Note: Silty layer observed at 9 feet bgs.					0.1			
SAND (SP), brown, 95% medium to fine sand, 5% non-plastic silt, dry, no hydrocarbon odor.	10			MW32-10	2.1			
					3.1			
SILTY GRAVEL (GM), brown, 45% non-plastic silt, 35% subrounded gravel up to 2" in diameter, 20% fine sand, damp, strong hydrocarbon odor.				MW32-14	481.0			
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, dry, no hydrocarbon odor. **Chumstick Formation.**	15				3.7			
					0.5			
	20				0.1			
SANDSTONE, grayish brown, medium to fine grained, massive, well cemented, micacious, dry, no hydrocarbon odor.					0.1			
	25				0.1			
					0.1			
MUDSTONE, dark brown, laminated, friable, planer fracturing, waxy, organic inclusions, dry, no hydrocarbon odor.				MW32-28				
SANDSTONE, gray, medium to fine grained, massive, well cemented, micacious, dry, no hydrocarbon odor.					0.1			
	30				0.1			
					0.1			
BOTTOM OF BORING AT 35' bgs.	35				0.0			

WELL CONSTRUCTION

Depths (feet bgs)

Borehole: 34.40
Sump: 33.95 - 34.40
Screen: 8.95 - 33.95
Casing: 0 - 8.95
Backfill:
Sand Pack: 7.95 - 34.40
Bentonite: 3 - 7.95
Concrete: 0 - 3
Stabilizers: Yes

MATERIALS USED

Casing: 4" PVC
Well Screen: 20', 0.010" slotting
End Cap: Flat sump
Sand Pack: 9 50lbs bag 10/20 Sand
Bentonite: 2 50lbs bag
Concrete: 1 50lbs bag
Monument: Flush
Well Cap: Locking J-plug
Other:

LEGEND:

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

DRILLING CONTRACTOR: Budinger
DRILLING METHOD: Sonic
BOREHOLE DIAMETER: 8"
SAMPLING METHOD: Continuous core barrel
START CARD NUMBER: Unknown

CASING ELEVATION: 655.83
GROUND SURFACE ELEVATION: 656.21
COORDINATES: 152963.48
COORDINATES: 1771700.96

Appendix B
Well Development Forms

WELL DEVELOPMENT

Well ID #: MW24
Date: 8-7-18
Time: _____

Project name: Columbia
Project #: 2017-079
Engineer: RSH

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 _____ ○ Comments _____

WELL MEASUREMENTS

Total well depth 34.25 ft ○ Clean bottom ○ Muddy bottom ○ Not measured
Depth to product — ft
Depth to water 26.51 ft
Casing volume 7.74 ft (H_2O) X 0.65 gpf = 5.031
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 ○ Monofillament ☑ Other _____
Purge start time 1100 Purge stop time 1143 Purge Rate (GPM) _____
Total Volume Purged (gallons) 55gal

FIELD PARAMETERS

Meters used ○ FlowThru Cell ○ Hach ○ Hanna ☑ Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
	6.7	17.2°C	833 µS	clear		

NOTES/COMMENTS

Drew down to 29.01'
29.20 to 28.20 in 52 sec.
~~28.20 to 27.20 in~~

Engineer's Signature _____ Date _____

Hydro Con

WELL DEVELOPMENT

Well ID #: MW25
Date: 8-8-18
Time: _____

Project name: Coleman 0.1
Project #: 2017-074
Engineer: RAH

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 32.96 ft o Clean bottom o Muddy bottom o Not measured
Depth to product _____ ft
Depth to water 19.51 ft
Casing volume 13.45 ft (H_2O) X 0.65 gpf = 8.7
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 o Peristaltic ✓Submersible o Centrifugal o Other _____
Purge tubing o New LDPE o New HDPE o New Teflon o Other _____
Bailer type o Disposable o Stainless o PVC o Other _____
Bailer cord used o Monofillament o Other _____
Purge start time 1040 Purge stop time _____ Purge Rate (GPM) _____
Total Volume Purged (gallons) _____

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna ✓Other _____

	Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
8/8/18	≥15						

8/10/18 DTW 29.15' 2.5' gallons in well Pumped 0751 To 0754 Dry removed x3 gal Turbid.

NOTES/COMMENTS

1052 Pumped dry DTW 32.14 Recharge To 31.14 in 73 minutes.

Engineer's Signature _____ Date _____

Hydro Con

WELL DEVELOPMENT

Well ID #: MW6
Date: 8-10-18
Time:

Project name: Coleman oil
Project #: 2017-074
Engineer: RLH

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 33.52 ft o Clean bottom o Muddy bottom o Not measured
Depth to product ft
Depth to water 18.20 ft
Casing volume 15.32 ft (H_2O) X 0.65 gpf = 9.95
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 o Peristaltic ☑ Submersible o Centrifugal o Other
Purge tubing o New LDPE o New HDPE o New Teflon o Other
Bailer type o Disposable o Stainless o PVC o Other
Bailer cord used o Monofillament o Other
Purge start time 0810 Purge stop time Purge Rate (GPM)
Total Volume Purged (gallons)

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP

NOTES/COMMENTS

0810 Purged dry 1.5 gal removed rubber Tubing.
Surface @ 0820 32.70' Recharge To 31.70 in 0848 (22) minutes.

Engineer's Signature Date

HydroCon

WELL DEVELOPMENT

Well ID #: MW27
Date: 8-10-14
Time:

Project name: Colonial
Project #: 2017.074
Engineer: KLH

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 38.74 ft o Clean bottom o Muddy bottom o Not measured
Depth to product ____ ft
Depth to water 24.26 ft
Casing volume 14.48 ft (H_2O) X 0.65 gpf = 9.4
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 o Peristaltic ✓ Submersible o Centrifugal o Other
Purge tubing ✓ New LDPE o New HDPE o New Teflon o Other
Bailer type o Disposable o Stainless o PVC o Other
Bailer cord used o Monofillament o Other
Purge start time 1131 Purge stop time 1145 Purge Rate (GPM)
Total Volume Purged (gallons) 3x15

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
≈15 gal						

1145 Pumped dry. Recharged ~~Rotary~~ 37.41 To 36.91 in 55 mins.

NOTES/COMMENTS

Engineer's Signature ____ Date ____

HydroCon

WELL DEVELOPMENT

Well ID #: MW28
Date: 8-13-18
Time: _____

Project name: _____
Project #: 2017-074
Engineer: RAM

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 _____ ○ Comments Soft Bottom

WELL MEASUREMENTS

Total well depth 38.74 ft ○ Clean bottom ○ Muddy bottom ○ Not measured
Depth to product _____ ft
Depth to water 24.39 ft
Casing volume 14.35 ft (H_2O) X 0.65 gpf = 9.3
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 ○ Monofillament ○ Other _____
Purge start time 1026 Purge stop time 1037 Purge Rate (GPM) _____
Total Volume Purged (gallons) _____

FIELD PARAMETERS

Meters used ○ FlowThru Cell ○ Hach ○ Hanna ☑ Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP

NOTES/COMMENTS

Purged 36.30 To 35.80 in 23 mins.

Engineer's Signature _____ Date _____

HydroCon

WELL DEVELOPMENT

Well ID #: MW29 | Project name: _____
Date: 8-14-18 | Project #: 2017-079
Time: _____ | Engineer: RAH

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 39.11 ft o Clean bottom o Muddy bottom o Not measured
Depth to product — ft
Depth to water 25.07 ft
Casing volume 14.04 ft (H_2O) X 0.65 gpf = 9.1
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 o Peristaltic ✓Submersible o Centrifugal o Other _____
Purge tubing ✓New LDPE o New HDPE o New Teflon o Other _____
Bailer type o Disposable o Stainless o PVC o Other _____
Bailer cord used o Monofillament o Other _____
Purge start time 1220 Purge stop time 1255 Purge Rate (GPM) _____
Total Volume Purged (gallons) 10

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP

NOTES/COMMENTS

_____
_____
_____
_____

Engineer's Signature _____ Date _____

HydroCon

WELL DEVELOPMENT

Well ID #: MW30 | Project name: _____
Date: 8-16-18 | Project #: 2017-074
Time: 8 | Engineer: MH

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 39.79 ft o Clean bottom o Muddy bottom o Not measured
Depth to product _____ ft
Depth to water 25.62 ft
Casing volume 14.17 ft (H_2O) X 0.65 gpf = 9.2
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 o Peristaltic o Submersible o Centrifugal o Other _____
Purge tubing o New LDPE o New HDPE o New Teflon o Other _____
Bailer type o Disposable o Stainless o PVC o Other _____
Bailer cord used o Monofillament o Other _____
Purge start time 1225 Purge stop time 1240 Purge Rate (GPM) _____
Total Volume Purged (gallons) _____

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
Turned 3.15 gal	WL @	39.19 @	1240		39.49 @	1225

NOTES/COMMENTS

Engineer's Signature _____ Date _____

HydroCon

WELL DEVELOPMENT

Well ID #: MW31 Project name: _____
Date: 8-16-18 Project #: 2017-079
Time: _____ Engineer: _____

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 39.28 ft o Clean bottom o Muddy bottom o Not measured
Depth to product _____ ft
Depth to water 25.51 ft
Casing volume 13.77 ft (H_2O) X 0.65 gpf = 8.95
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 o Peristaltic o Submersible o Centrifugal o Other _____
Purge tubing o New LDPE o New HDPE o New Teflon o Other _____
Bailer type o Disposable o Stainless o PVC o Other _____
Bailer cord used o Monofillament o Other _____
Purge start time 1248 Purge stop time 13:00 Purge Rate (GPM) _____
Total Volume Purged (gallons) 15

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
Purge 3x 15 Gal. Teflon Tube						

NOTES/COMMENTS

Engineer's Signature _____ Date _____

HydroCon

WELL DEVELOPMENT

Well ID #: MW32
Date: 8-20-18
Time: 1115

Project name:
Project #: 2017.074
Engineer: CH

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 39.02 ft o Clean bottom o Muddy bottom o Not measured
Depth to product _____ ft
Depth to water 12.33 ft
Casing volume 21.09 ft (H_2O) X 0.65 gpf = 14.0
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 o Peristaltic o Submersible o Centrifugal o Other
Purge tubing o New LDPE o New HDPE o New Teflon o Other
Bailer type o Disposable o Stainless o PVC o Other
Bailer cord used o Monofillament o Other
Purge start time 1115 Purge stop time _____ Purge Rate (GPM) _____
Total Volume Purged (gallons) 55

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
1139	5.20	33.90	Turbine to	34.90	^ 1139	

~ 25 gal removed.

Purge well stop after 1gal.

NOTES/COMMENTS

Engineer's Signature _____ Date _____

HydroCon

WELL DEVELOPMENT

Well ID #: MW09R
Date: 8-20-18
Time: _____

Project name: _____
Project #: 2047-004
Engineer: AM

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 32.60 ft o Clean bottom o Muddy bottom o Not measured
Depth to product — ft
Depth to water 19.02 ft
Casing volume 13.58 ft (H_2O) X 0.65 gpf = 8.8
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 o Peristaltic o Submersible o Centrifugal o Other _____
Purge tubing o New LDPE o New HDPE o New Teflon o Other _____
Bailer type o Disposable o Stainless o PVC o Other _____
Bailer cord used o Monofillament o Other _____
Purge start time 1210 Purge stop time _____ Purge Rate (GPM) _____
Total Volume Purged (gallons) _____

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP
1223	33.45	TD	32.45	in	1229	

Removed dry 25 gal.

NOTES/COMMENTS

Engineer's Signature _____ Date _____

HydroCon

WELL DEVELOPMENT

Well ID #: MW(U)
Date: 8-17-18
Time: _____

Project name: _____
Project #: 2017-074
Engineer: RM

WELL INFORMATION

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

WELL MEASUREMENTS

Total well depth 33.59 ft o Clean bottom o Muddy bottom o Not measured
Depth to product _____ ft
Depth to water 22.53 ft
Casing volume 11.06 ft (H_2O) X 0.65 gpf = 7.1
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 o Peristaltic o Submersible o Centrifugal o Other _____
Purge tubing o New LDPE o New HDPE o New Teflon o Other _____
Bailer type o Disposable o Stainless o PVC o Other _____
Bailer cord used o Monofillament o Other _____
Purge start time 1105 Purge stop time 1220 Purge Rate (GPM) 1.0
Total Volume Purged (gallons) 70

FIELD PARAMETERS

Meters used o FlowThru Cell o Hach o Hanna o Other _____

Gallons	pH	Temp.	Conductivity	Turbidity	Dissolved Oxygen	ORP

NOTES/COMMENTS

Recharge 1' in 24 sec.

Engineer's Signature _____ Date _____

Appendix C
Laboratory Reports and Chain-of-Custody Documentation

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Tuesday, August 21, 2018

Craig Hultgren
HydroCon LLC
314 W 15th Street Suite 300
Vancouver, WA 98660

RE: A8H0328 - Coleman Wenatchee - 2017-074

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

Enclosed are the results of analyses for work order A8H0328, which was received by the laboratory on 8/13/2018 at 9:55:00AM.

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.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW24-15	A8H0328-01	Soil	08/06/18 09:30	08/13/18 09:55
MW24-22	A8H0328-02	Soil	08/06/18 10:10	08/13/18 09:55
MW24-28	A8H0328-03	Soil	08/06/18 10:40	08/13/18 09:55
MW24-35	A8H0328-04	Soil	08/06/18 11:00	08/13/18 09:55
MW25-19	A8H0328-05	Soil	08/07/18 08:00	08/13/18 09:55
MW25-22	A8H0328-06	Soil	08/07/18 08:20	08/13/18 09:55
MW25-35	A8H0328-07	Soil	08/07/18 09:00	08/13/18 09:55
MW26-15	A8H0328-08	Soil	08/08/18 08:20	08/13/18 09:55
MW26-19	A8H0328-09	Soil	08/08/18 08:35	08/13/18 09:55
MW26-29	A8H0328-10	Soil	08/08/18 08:50	08/13/18 09:55
MW26-33	A8H0328-11	Soil	08/08/18 09:25	08/13/18 09:55
MW27-15	A8H0328-12	Soil	08/09/18 08:40	08/13/18 09:55
MW27-19	A8H0328-13	Soil	08/09/18 08:55	08/13/18 09:55
MW27-39	A8H0328-14	Soil	08/09/18 10:35	08/13/18 09:55
MW28-19	A8H0328-15	Soil	08/10/18 07:45	08/13/18 09:55
MW28-25	A8H0328-16	Soil	08/10/18 08:10	08/13/18 09:55
MW28-39	A8H0328-17	Soil	08/10/18 09:45	08/13/18 09:55

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

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL CASE NARRATIVE

Work Order: A8H0328

Temperature Exceedance-

Samples were received at 14.4 °C, which exceeds the regulatory requirements for proper storage at less than or equal to 6 °C.

Affected samples have been qualified with a "TEMP" qualifier in this report.

Lisa Domenighini
Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW24-15 (A8H0328-01)				**Matrix: Soil**			**Batch: 8080854**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW24-22 (A8H0328-02)				**Matrix: Soil**			**Batch: 8080854**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 91 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW24-28 (A8H0328-03)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 74 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW24-35 (A8H0328-04)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**73.0**	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	**F-13**
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 65 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW25-19 (A8H0328-05)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 68 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW25-22 (A8H0328-06)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**92.7**	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	**F-13**
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW25-35 (A8H0328-07)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**239**	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	**F-13, F-15**
Oil	**323**	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	**F-03, F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 95 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW26-15 (A8H0328-08)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW26-15 (A8H0328-08)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW26-19 (A8H0328-09)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**34.1**	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	**F-13**
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW26-29 (A8H0328-10)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**94.8**	---	25.0	mg/kg dry	1	08/15/18	NWTPH-Dx	**F-13**
Oil	ND	---	50.0	mg/kg dry	1	08/15/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*		*Limits: 50-150 %*	*1*	*08/15/18*	*NWTPH-Dx*	
MW26-33 (A8H0328-11)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**228**	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	**F-13, F-15**
Oil	**288**	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	**F-03, F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW27-15 (A8H0328-12)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 51 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW27-19 (A8H0328-13)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**263**	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	**F-13**
Oil	ND	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW27-39 (A8H0328-14)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	**69.4**	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	**F-13, F-15**
Oil	**65.9**	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	**F-03, F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 50 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW28-19 (A8H0328-15)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Diesel	ND	---	25.0	mg/kg dry	1	08/16/18	NWTPH-Dx	
Oil	ND	---	50.0	mg/kg dry	1	08/16/18	NWTPH-Dx	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW28-19 (A8H0328-15)				**Matrix: Soil**			**Batch: 8080799**	**TEMP**
Surrogate: o-Terphenyl (Surr)		*Recovery: 67 %*		*Limits: 50-150 %*	*1*	*08/16/18*	*NWTPH-Dx*	
MW28-25 (A8H0328-16)				**Matrix: Soil**			**Batch: 8080754**	**TEMP**
Diesel	ND	---	25.6	mg/kg dry	1	08/14/18	NWTPH-Dx	
Oil	ND	---	51.1	mg/kg dry	1	08/14/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Dx*	
MW28-39 (A8H0328-17)				**Matrix: Soil**			**Batch: 8080754**	**TEMP**
Diesel	**27.8**	---	25.0	mg/kg dry	1	08/14/18	NWTPH-Dx	**F-13**
Oil	ND	---	50.0	mg/kg dry	1	08/14/18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*		*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Dx*	

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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW24-15 (A8H0328-01)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	ND	---	5.29	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*109 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW24-22 (A8H0328-02)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**109**	---	5.59	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*111 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW24-28 (A8H0328-03RE1)				**Matrix: Soil**			**Batch: 8080732**	**TEMP**
Gasoline Range Organics	**179**	---	6.53	mg/kg dry	50	08/14/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*162 %*	*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	*S-08*
1,4-Difluorobenzene (Sur)			*114 %*	*50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
MW24-35 (A8H0328-04)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**19.5**	---	5.72	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*113 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW25-19 (A8H0328-05)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	ND	---	6.67	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*108 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW25-22 (A8H0328-06)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**6.70**	---	5.62	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*106 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*93 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW25-35 (A8H0328-07)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**7.98**	---	6.53	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*113 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW26-15 (A8H0328-08)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	ND	---	6.18	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW26-15 (A8H0328-08)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 110 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW26-19 (A8H0328-09)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**7.69**	---	5.63	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 111 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW26-29 (A8H0328-10)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**33.4**	---	6.27	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 113 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW26-33 (A8H0328-11)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Gasoline Range Organics	ND	---	7.39	mg/kg dry	50	08/14/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
MW27-15 (A8H0328-12)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Gasoline Range Organics	ND	---	6.83	mg/kg dry	50	08/14/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
MW27-19 (A8H0328-13)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Gasoline Range Organics	**126**	---	6.16	mg/kg dry	50	08/14/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 138 %*	*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
MW27-39 (A8H0328-14)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Gasoline Range Organics	ND	---	6.18	mg/kg dry	50	08/14/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 109 %*	*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
MW28-19 (A8H0328-15)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Gasoline Range Organics	ND	---	5.88	mg/kg dry	50	08/14/18	NWTPH-Gx (MS)	

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW28-19 (A8H0328-15)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*109 %*	*Limits: 50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/14/18*	*NWTPH-Gx (MS)*	
MW28-25 (A8H0328-16)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	ND	---	7.04	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*105 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
MW28-39 (A8H0328-17)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Gasoline Range Organics	**28.2**	---	5.23	mg/kg dry	50	08/13/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*113 %*	*Limits: 50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*08/13/18*	*NWTPH-Gx (MS)*	

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW24-15 (A8H0328-01)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0106	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0529	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0265	mg/kg dry	50	08/13/18	5035A/8260C	Q-37
Xylenes, total	ND	---	0.0794	mg/kg dry	50	08/13/18	5035A/8260C	Q-37
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW24-22 (A8H0328-02)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0112	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0559	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0279	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	**0.110**	---	0.0838	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*98 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW24-28 (A8H0328-03RE1)				**Matrix: Soil**			**Batch: 8080732**	**TEMP**
Benzene	ND	---	0.0131	mg/kg dry	50	08/14/18	5035A/8260C	
Toluene	ND	---	0.0653	mg/kg dry	50	08/14/18	5035A/8260C	
Ethylbenzene	ND	---	0.0326	mg/kg dry	50	08/14/18	5035A/8260C	
Xylenes, total	ND	---	0.0979	mg/kg dry	50	08/14/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*98 %*	*Limits: 80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*94 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*106 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
MW24-35 (A8H0328-04)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0114	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0572	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0286	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	**0.117**	---	0.0859	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW25-19 (A8H0328-05)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0133	mg/kg dry	50	08/13/18	5035A/8260C	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW25-19 (A8H0328-05)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Toluene	ND	---	0.0667	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0334	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	ND	---	0.100	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW25-22 (A8H0328-06)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0112	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0562	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0281	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	ND	---	0.0843	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW25-35 (A8H0328-07)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0131	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0653	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0326	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	ND	---	0.0979	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*95 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW26-15 (A8H0328-08)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0124	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0618	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0309	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	ND	---	0.0928	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW26-19 (A8H0328-09)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0113	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0563	mg/kg dry	50	08/13/18	5035A/8260C	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW26-19 (A8H0328-09)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Ethylbenzene	ND	---	0.0282	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	ND	---	0.0845	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW26-29 (A8H0328-10)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0125	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0627	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	ND	---	0.0314	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	ND	---	0.0941	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW26-33 (A8H0328-11)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Benzene	ND	---	0.0148	mg/kg dry	50	08/14/18	5035A/8260C	
Toluene	ND	---	0.0739	mg/kg dry	50	08/14/18	5035A/8260C	
Ethylbenzene	ND	---	0.0369	mg/kg dry	50	08/14/18	5035A/8260C	
Xylenes, total	ND	---	0.111	mg/kg dry	50	08/14/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
MW27-15 (A8H0328-12)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Benzene	ND	---	0.0137	mg/kg dry	50	08/14/18	5035A/8260C	
Toluene	ND	---	0.0683	mg/kg dry	50	08/14/18	5035A/8260C	
Ethylbenzene	ND	---	0.0341	mg/kg dry	50	08/14/18	5035A/8260C	
Xylenes, total	**0.102**	---	0.102	mg/kg dry	50	08/14/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
MW27-19 (A8H0328-13)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Benzene	ND	---	0.0123	mg/kg dry	50	08/14/18	5035A/8260C	
Toluene	ND	---	0.0616	mg/kg dry	50	08/14/18	5035A/8260C	
Ethylbenzene	**0.0992**	---	0.0308	mg/kg dry	50	08/14/18	5035A/8260C	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW27-19 (A8H0328-13)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Xylenes, total	**0.631**	---	0.0924	mg/kg dry	50	08/14/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
MW27-39 (A8H0328-14)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Benzene	ND	---	0.0124	mg/kg dry	50	08/14/18	5035A/8260C	
Toluene	ND	---	0.0618	mg/kg dry	50	08/14/18	5035A/8260C	
Ethylbenzene	ND	---	0.0309	mg/kg dry	50	08/14/18	5035A/8260C	
Xylenes, total	ND	---	0.0926	mg/kg dry	50	08/14/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*101 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
MW28-19 (A8H0328-15)				**Matrix: Soil**			**Batch: 8080733**	**TEMP**
Benzene	ND	---	0.0118	mg/kg dry	50	08/14/18	5035A/8260C	
Toluene	ND	---	0.0588	mg/kg dry	50	08/14/18	5035A/8260C	
Ethylbenzene	ND	---	0.0294	mg/kg dry	50	08/14/18	5035A/8260C	
Xylenes, total	**0.169**	---	0.0882	mg/kg dry	50	08/14/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*95 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/14/18*	*5035A/8260C*	
MW28-25 (A8H0328-16)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0141	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0704	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	**0.0528**	---	0.0352	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	**0.317**	---	0.106	mg/kg dry	50	08/13/18	5035A/8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*97 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
MW28-39 (A8H0328-17)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Benzene	ND	---	0.0105	mg/kg dry	50	08/13/18	5035A/8260C	
Toluene	ND	---	0.0523	mg/kg dry	50	08/13/18	5035A/8260C	
Ethylbenzene	**0.0638**	---	0.0262	mg/kg dry	50	08/13/18	5035A/8260C	
Xylenes, total	**0.223**	---	0.0785	mg/kg dry	50	08/13/18	5035A/8260C	

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW28-39 (A8H0328-17)				**Matrix: Soil**			**Batch: 8080688**	**TEMP**
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*96 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*08/13/18*	*5035A/8260C*	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW24-15 (A8H0328-01)				**Matrix: Soil**			**Batch: 8080686**	**TEMP**
% Solids	**88.7**	---	1.00	% by Weight	1	08/14/18	EPA 8000C	
MW24-22 (A8H0328-02)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**87.7**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW24-28 (A8H0328-03)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**78.1**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW24-35 (A8H0328-04)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**88.8**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW25-19 (A8H0328-05)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**79.9**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW25-22 (A8H0328-06)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**87.4**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW25-35 (A8H0328-07)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**86.7**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW26-15 (A8H0328-08)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**78.7**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW26-19 (A8H0328-09)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**81.3**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW26-29 (A8H0328-10)				**Matrix: Soil**			**Batch: 8080686**	**TEMP**
% Solids	**81.0**	---	1.00	% by Weight	1	08/14/18	EPA 8000C	
MW26-33 (A8H0328-11)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**76.1**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW27-15 (A8H0328-12)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**85.3**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW27-19 (A8H0328-13)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW27-19 (A8H0328-13)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**86.4**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW27-39 (A8H0328-14)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**80.8**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW28-19 (A8H0328-15)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**80.1**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW28-25 (A8H0328-16)				**Matrix: Soil**			**Batch: 8080736**	**TEMP**
% Solids	**72.6**	---	1.00	% by Weight	1	08/15/18	EPA 8000C	
MW28-39 (A8H0328-17)				**Matrix: Soil**			**Batch: 8080686**	**TEMP**
% Solids	**88.7**	---	1.00	% by Weight	1	08/14/18	EPA 8000C	

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080754 - EPA 3546 (Fuels)												**Soil**
Blank (8080754-BLK1)		Prepared: 08/14/18 12:50 Analyzed: 08/14/18 20:41										
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	---	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 107 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (8080754-BS1)		Prepared: 08/14/18 12:50 Analyzed: 08/14/18 21:03										
NWTPH-Dx												
Diesel	116	---	25.0	mg/kg wet	1	125	---	93	76-115%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 104 %*		*Limits: 50-150 %*			*Dilution: 1x*					
Batch 8080799 - EPA 3546 (Fuels)												**Soil**
Blank (8080799-BLK1)		Prepared: 08/15/18 13:42 Analyzed: 08/15/18 20:40										
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (8080799-BS1)		Prepared: 08/15/18 13:42 Analyzed: 08/15/18 20:59										
NWTPH-Dx												
Diesel	118	---	25.0	mg/kg wet	1	125	---	94	76-115%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 92 %*		*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (8080799-DUP1)		Prepared: 08/15/18 13:42 Analyzed: 08/15/18 21:39										
QC Source Sample: MW24-28 (A8H0328-03)												
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	---	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 64 %*		*Limits: 50-150 %*			*Dilution: 1x*					

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080854 - EPA 3546 (Fuels)												**Soil**
Blank (8080854-BLK1)		Prepared: 08/16/18 14:36 Analyzed: 08/16/18 21:56										
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 100 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (8080854-BS1)		Prepared: 08/16/18 14:36 Analyzed: 08/16/18 22:17										
NWTPH-Dx												
Diesel	120	---	25.0	mg/kg wet	1	125	---	96	76-115%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 103 %*		*Limits: 50-150 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080688 - EPA 5035A								**Soil**				
Blank (8080688-BLK1)		Prepared: 08/13/18 09:00 Analyzed: 08/13/18 11:36										
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*		*"*					
LCS (8080688-BS2)		Prepared: 08/13/18 09:00 Analyzed: 08/13/18 11:10										
NWTPH-Gx (MS)												
Gasoline Range Organics	22.4	---	5.00	mg/kg wet	50	25.0	---	89	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 103 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*		*"*					
Duplicate (8080688-DUP1)		Prepared: 08/06/18 09:30 Analyzed: 08/13/18 16:41										**TEMP**
QC Source Sample: MW24-15 (A8H0328-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	5.09	mg/kg dry	50	---	ND	---	---	---	**30%**	Q-05
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 107 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*		*"*					
Duplicate (8080688-DUP2)		Prepared: 08/08/18 08:50 Analyzed: 08/13/18 21:09										**TEMP**
QC Source Sample: MW26-29 (A8H0328-10)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**15.4**	---	6.35	mg/kg dry	50	---	33.4	---	---	**74**	**30%**	Q-05
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 110 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*		*50-150 %*		*"*					

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080732 - EPA 5035A												**Soil**
Blank (8080732-BLK1)		Prepared: 08/14/18 08:00		Analyzed: 08/14/18 11:00								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 95 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*92 %*		*50-150 %*		*"*					
LCS (8080732-BS2)		Prepared: 08/14/18 08:00		Analyzed: 08/14/18 10:33								
NWTPH-Gx (MS)												
Gasoline Range Organics	24.8	---	5.00	mg/kg wet	50	25.0	---	99	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*		*"*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080733 - EPA 5035A												**Soil**
Blank (8080733-BLK1)		Prepared: 08/14/18 11:00 Analyzed: 08/14/18 13:32										
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 107 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*		*50-150 %*		*"*					
LCS (8080733-BS2)		Prepared: 08/14/18 11:00 Analyzed: 08/14/18 13:06										
NWTPH-Gx (MS)												
Gasoline Range Organics	24.3	---	5.00	mg/kg wet	50	25.0	---	97	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 102 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*		*"*					
Duplicate (8080733-DUP1)		Prepared: 08/08/18 09:25 Analyzed: 08/14/18 14:29										**TEMP**
QC Source Sample: MW26-33 (A8H0328-11)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	7.05	mg/kg dry	50	---	3.86	---	---	***	**30%**	Q-05
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 109 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*		*50-150 %*		*"*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080688 - EPA 5035A												**Soil**
Blank (8080688-BLK1)		Prepared: 08/13/18 09:00 Analyzed: 08/13/18 11:36										
5035A/8260C												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 98 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*99 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*100 %*		*80-120 %*			*"*					
LCS (8080688-BS1)		Prepared: 08/13/18 09:00 Analyzed: 08/13/18 10:43										
5035A/8260C												
Benzene	0.875	---	0.0100	mg/kg wet	50	1.00	---	88	80-120%	---	---	
Toluene	0.838	---	0.0500	mg/kg wet	50	1.00	---	84	80-120%	---	---	
Ethylbenzene	0.877	---	0.0250	mg/kg wet	50	1.00	---	88	80-120%	---	---	
Xylenes, total	2.61	---	0.0750	mg/kg wet	50	3.00	---	87	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*97 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*99 %*		*80-120 %*			*"*					
Duplicate (8080688-DUP1)		Prepared: 08/06/18 09:30 Analyzed: 08/13/18 16:41										**TEMP**
QC Source Sample: MW24-15 (A8H0328-01)												
5035A/8260C												
Benzene	ND	---	0.0102	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0509	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	**0.0606**	---	0.0255	mg/kg dry	50	---	ND	---	---		**30%**	Q-04
Xylenes, total	**0.324**	---	0.0764	mg/kg dry	50	---	0.0418	---	---	**154**	**30%**	Q-04
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*96 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*99 %*		*80-120 %*			*"*					
Duplicate (8080688-DUP2)		Prepared: 08/08/18 08:50 Analyzed: 08/13/18 21:09										**TEMP**
QC Source Sample: MW26-29 (A8H0328-10)												
5035A/8260C												

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080688 - EPA 5035A							**Soil**					
Duplicate (8080688-DUP2)		Prepared: 08/08/18 08:50	Analyzed: 08/13/18 21:09									**TEMP**
QC Source Sample: MW26-29 (A8H0328-10)												
Benzene	ND	---	0.0127	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0635	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0317	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.0952	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 100 %*	*Limits: 80-120 %*				*Dilution: 1x*					
Toluene-d8 (Surr)		*96 %*	*80-120 %*				*"*					
4-Bromofluorobenzene (Surr)		*99 %*	*80-120 %*				*"*					
Matrix Spike (8080688-MS1)		Prepared: 08/10/18 09:45	Analyzed: 08/13/18 22:29									**T-02, TEMP**
QC Source Sample: MW28-39 (A8H0328-17)												
5035A/8260C												
Benzene	0.961	---	0.0105	mg/kg dry	50	1.05	ND	92	77-121%	---	---	
Toluene	0.898	---	0.0523	mg/kg dry	50	1.05	ND	86	77-121%	---	---	
Ethylbenzene	0.993	---	0.0262	mg/kg dry	50	1.05	0.0638	89	76-122%	---	---	
Xylenes, total	3.00	---	0.0785	mg/kg dry	50	3.14	0.223	88	78-124%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 100 %*	*Limits: 80-120 %*				*Dilution: 1x*					
Toluene-d8 (Surr)		*96 %*	*80-120 %*				*"*					
4-Bromofluorobenzene (Surr)		*99 %*	*80-120 %*				*"*					

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080732 - EPA 5035A												**Soil**
Blank (8080732-BLK1)		Prepared: 08/14/18 08:00		Analyzed: 08/14/18 11:00								
5035A/8260C												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 95 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*101 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*102 %*		*80-120 %*			*"*					
LCS (8080732-BS1)		Prepared: 08/14/18 08:00		Analyzed: 08/14/18 10:06								
5035A/8260C												
Benzene	0.909	---	0.0100	mg/kg wet	50	1.00	---	91	80-120%	---	---	
Toluene	0.952	---	0.0500	mg/kg wet	50	1.00	---	95	80-120%	---	---	
Ethylbenzene	0.973	---	0.0250	mg/kg wet	50	1.00	---	97	80-120%	---	---	
Xylenes, total	2.95	---	0.0750	mg/kg wet	50	3.00	---	98	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 96 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*98 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*101 %*		*80-120 %*			*"*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080733 - EPA 5035A												**Soil**
Blank (8080733-BLK1)		Prepared: 08/14/18 11:00 Analyzed: 08/14/18 13:32										
5035A/8260C												
Benzene	ND	---	0.00667	mg/kg wet	50	---	---	---	---	---	---	
Toluene	ND	---	0.0333	mg/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.0167	mg/kg wet	50	---	---	---	---	---	---	
Xylenes, total	ND	---	0.0500	mg/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*95 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*98 %*		*80-120 %*			*"*					
LCS (8080733-BS1)		Prepared: 08/14/18 11:00 Analyzed: 08/14/18 12:39										
5035A/8260C												
Benzene	0.914	---	0.0100	mg/kg wet	50	1.00	---	91	80-120%	---	---	
Toluene	0.884	---	0.0500	mg/kg wet	50	1.00	---	88	80-120%	---	---	
Ethylbenzene	0.925	---	0.0250	mg/kg wet	50	1.00	---	92	80-120%	---	---	
Xylenes, total	2.68	---	0.0750	mg/kg wet	50	3.00	---	89	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*97 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*102 %*		*80-120 %*			*"*					
Duplicate (8080733-DUP1)		Prepared: 08/08/18 09:25 Analyzed: 08/14/18 14:29										**TEMP**
QC Source Sample: MW26-33 (A8H0328-11)												
5035A/8260C												
Benzene	ND	---	0.0141	mg/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	---	0.0705	mg/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.0352	mg/kg dry	50	---	ND	---	---	---	30%	
Xylenes, total	ND	---	0.106	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 98 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*96 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*100 %*		*80-120 %*			*"*					
Matrix Spike (8080733-MS1)		Prepared: 08/10/18 07:45 Analyzed: 08/14/18 16:43										**TEMP**
QC Source Sample: MW28-19 (A8H0328-15)												
5035A/8260C												

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080733 - EPA 5035A							**Soil**					
Matrix Spike (8080733-MS1)		Prepared: 08/10/18 07:45		Analyzed: 08/14/18 16:43								**TEMP**
QC Source Sample: MW28-19 (A8H0328-15)												
Benzene	1.12	---	0.0118	mg/kg dry	50	1.18	ND	96	77-121%	---	---	
Toluene	1.05	---	0.0588	mg/kg dry	50	1.18	ND	89	77-121%	---	---	
Ethylbenzene	1.12	---	0.0294	mg/kg dry	50	1.18	0.0276	93	76-122%	---	---	
Xylenes, total	3.48	---	0.0882	mg/kg dry	50	3.53	0.169	94	78-124%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080686 - Total Solids (Dry Weight)												**Soil**

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

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080736 - Total Solids (Dry Weight)												**Soil**
Duplicate (8080736-DUP2)		Prepared: 08/14/18 09:39 Analyzed: 08/15/18 08:37										
QC Source Sample: MW26-15 (A8H0328-08)												
EPA 8000C												
% Solids	**78.6**	---	1.00	% by Weight	1	---	78.7	---	---	0.05	10%	

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

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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: 8080754							
A8H0328-16	Soil	NWTPH-Dx	08/10/18 08:10	08/14/18 12:50	10.78g/5mL	10g/5mL	0.93
A8H0328-17	Soil	NWTPH-Dx	08/10/18 09:45	08/14/18 12:50	10.37g/5mL	10g/5mL	0.96
Batch: 8080799							
A8H0328-03	Soil	NWTPH-Dx	08/06/18 10:40	08/15/18 13:42	10.5g/5mL	10g/5mL	0.95
A8H0328-04	Soil	NWTPH-Dx	08/06/18 11:00	08/15/18 13:42	10.61g/5mL	10g/5mL	0.94
A8H0328-05	Soil	NWTPH-Dx	08/07/18 08:00	08/15/18 13:42	10.36g/5mL	10g/5mL	0.97
A8H0328-06	Soil	NWTPH-Dx	08/07/18 08:20	08/15/18 13:42	10.6g/5mL	10g/5mL	0.94
A8H0328-07	Soil	NWTPH-Dx	08/07/18 09:00	08/15/18 13:42	10.13g/5mL	10g/5mL	0.99
A8H0328-08	Soil	NWTPH-Dx	08/08/18 08:20	08/15/18 13:42	10.91g/5mL	10g/5mL	0.92
A8H0328-09	Soil	NWTPH-Dx	08/08/18 08:35	08/15/18 13:42	10.41g/5mL	10g/5mL	0.96
A8H0328-10	Soil	NWTPH-Dx	08/08/18 08:50	08/15/18 13:42	10.89g/5mL	10g/5mL	0.92
A8H0328-11	Soil	NWTPH-Dx	08/08/18 09:25	08/15/18 13:42	10.72g/5mL	10g/5mL	0.93
A8H0328-12	Soil	NWTPH-Dx	08/09/18 08:40	08/15/18 13:42	10.46g/5mL	10g/5mL	0.96
A8H0328-13	Soil	NWTPH-Dx	08/09/18 08:55	08/15/18 13:42	10.42g/5mL	10g/5mL	0.96
A8H0328-14	Soil	NWTPH-Dx	08/09/18 10:35	08/15/18 13:42	10.5g/5mL	10g/5mL	0.95
A8H0328-15	Soil	NWTPH-Dx	08/10/18 07:45	08/15/18 13:42	10.71g/5mL	10g/5mL	0.93
Batch: 8080854							
A8H0328-01	Soil	NWTPH-Dx	08/06/18 09:30	08/16/18 14:36	10.42g/5mL	10g/5mL	0.96
A8H0328-02	Soil	NWTPH-Dx	08/06/18 10:10	08/16/18 14:36	10.24g/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: 8080688							
A8H0328-01	Soil	NWTPH-Gx (MS)	08/06/18 09:30	08/06/18 09:30	6.06g/5mL	5g/5mL	0.83
A8H0328-02	Soil	NWTPH-Gx (MS)	08/06/18 10:10	08/06/18 10:10	5.84g/5mL	5g/5mL	0.86
A8H0328-04	Soil	NWTPH-Gx (MS)	08/06/18 11:00	08/06/18 11:00	5.53g/5mL	5g/5mL	0.90
A8H0328-05	Soil	NWTPH-Gx (MS)	08/07/18 08:00	08/07/18 08:00	5.78g/5mL	5g/5mL	0.87
A8H0328-06	Soil	NWTPH-Gx (MS)	08/07/18 08:20	08/07/18 08:20	5.84g/5mL	5g/5mL	0.86
A8H0328-07	Soil	NWTPH-Gx (MS)	08/07/18 09:00	08/07/18 09:00	5g/5mL	5g/5mL	1.00
A8H0328-08	Soil	NWTPH-Gx (MS)	08/08/18 08:20	08/08/18 08:20	6.58g/5mL	5g/5mL	0.76
A8H0328-09	Soil	NWTPH-Gx (MS)	08/08/18 08:35	08/08/18 08:35	6.87g/5mL	5g/5mL	0.73
A8H0328-10	Soil	NWTPH-Gx (MS)	08/08/18 08:50	08/08/18 08:50	6.05g/5mL	5g/5mL	0.83
A8H0328-16	Soil	NWTPH-Gx (MS)	08/10/18 08:10	08/10/18 08:10	6.69g/5mL	5g/5mL	0.75

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

SAMPLE PREPARATION INFORMATION

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
A8H0328-17	Soil	NWTPH-Gx (MS)	08/10/18 09:45	08/10/18 09:45	6.13g/5mL	5g/5mL	0.82
Batch: 8080732							
A8H0328-03RE1	Soil	NWTPH-Gx (MS)	08/06/18 10:40	08/06/18 10:40	6.24g/5mL	5g/5mL	0.80
Batch: 8080733							
A8H0328-11	Soil	NWTPH-Gx (MS)	08/08/18 09:25	08/08/18 09:25	5.64g/5mL	5g/5mL	0.89
A8H0328-12	Soil	NWTPH-Gx (MS)	08/09/18 08:40	08/09/18 08:40	4.91g/5mL	5g/5mL	1.02
A8H0328-13	Soil	NWTPH-Gx (MS)	08/09/18 08:55	08/09/18 08:55	5.39g/5mL	5g/5mL	0.93
A8H0328-14	Soil	NWTPH-Gx (MS)	08/09/18 10:35	08/09/18 10:35	6.2g/5mL	5g/5mL	0.81
A8H0328-15	Soil	NWTPH-Gx (MS)	08/10/18 07:45	08/10/18 07:45	6.74g/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: 8080688							
A8H0328-01	Soil	5035A/8260C	08/06/18 09:30	08/06/18 09:30	6.06g/5mL	5g/5mL	0.83
A8H0328-02	Soil	5035A/8260C	08/06/18 10:10	08/06/18 10:10	5.84g/5mL	5g/5mL	0.86
A8H0328-04	Soil	5035A/8260C	08/06/18 11:00	08/06/18 11:00	5.53g/5mL	5g/5mL	0.90
A8H0328-05	Soil	5035A/8260C	08/07/18 08:00	08/07/18 08:00	5.78g/5mL	5g/5mL	0.87
A8H0328-06	Soil	5035A/8260C	08/07/18 08:20	08/07/18 08:20	5.84g/5mL	5g/5mL	0.86
A8H0328-07	Soil	5035A/8260C	08/07/18 09:00	08/07/18 09:00	5g/5mL	5g/5mL	1.00
A8H0328-08	Soil	5035A/8260C	08/08/18 08:20	08/08/18 08:20	6.58g/5mL	5g/5mL	0.76
A8H0328-09	Soil	5035A/8260C	08/08/18 08:35	08/08/18 08:35	6.87g/5mL	5g/5mL	0.73
A8H0328-10	Soil	5035A/8260C	08/08/18 08:50	08/08/18 08:50	6.05g/5mL	5g/5mL	0.83
A8H0328-16	Soil	5035A/8260C	08/10/18 08:10	08/10/18 08:10	6.69g/5mL	5g/5mL	0.75
A8H0328-17	Soil	5035A/8260C	08/10/18 09:45	08/10/18 09:45	6.13g/5mL	5g/5mL	0.82
Batch: 8080732							
A8H0328-03RE1	Soil	5035A/8260C	08/06/18 10:40	08/06/18 10:40	6.24g/5mL	5g/5mL	0.80
Batch: 8080733							
A8H0328-11	Soil	5035A/8260C	08/08/18 09:25	08/08/18 09:25	5.64g/5mL	5g/5mL	0.89
A8H0328-12	Soil	5035A/8260C	08/09/18 08:40	08/09/18 08:40	4.91g/5mL	5g/5mL	1.02
A8H0328-13	Soil	5035A/8260C	08/09/18 08:55	08/09/18 08:55	5.39g/5mL	5g/5mL	0.93
A8H0328-14	Soil	5035A/8260C	08/09/18 10:35	08/09/18 10:35	6.2g/5mL	5g/5mL	0.81
A8H0328-15	Soil	5035A/8260C	08/10/18 07:45	08/10/18 07:45	6.74g/5mL	5g/5mL	0.74

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080686							
A8H0328-01	Soil	EPA 8000C	08/06/18 09:30	08/13/18 19:23			NA
A8H0328-10	Soil	EPA 8000C	08/08/18 08:50	08/13/18 19:23			NA
A8H0328-17	Soil	EPA 8000C	08/10/18 09:45	08/13/18 19:23			NA
Batch: 8080736							
A8H0328-02	Soil	EPA 8000C	08/06/18 10:10	08/14/18 09:39			NA
A8H0328-03	Soil	EPA 8000C	08/06/18 10:40	08/14/18 09:39			NA
A8H0328-04	Soil	EPA 8000C	08/06/18 11:00	08/14/18 09:39			NA
A8H0328-05	Soil	EPA 8000C	08/07/18 08:00	08/14/18 09:39			NA
A8H0328-06	Soil	EPA 8000C	08/07/18 08:20	08/14/18 09:39			NA
A8H0328-07	Soil	EPA 8000C	08/07/18 09:00	08/14/18 09:39			NA
A8H0328-08	Soil	EPA 8000C	08/08/18 08:20	08/14/18 09:39			NA
A8H0328-09	Soil	EPA 8000C	08/08/18 08:35	08/14/18 09:39			NA
A8H0328-11	Soil	EPA 8000C	08/08/18 09:25	08/14/18 09:39			NA
A8H0328-12	Soil	EPA 8000C	08/09/18 08:40	08/14/18 09:39			NA
A8H0328-13	Soil	EPA 8000C	08/09/18 08:55	08/14/18 09:39			NA
A8H0328-14	Soil	EPA 8000C	08/09/18 10:35	08/14/18 09:39			NA
A8H0328-15	Soil	EPA 8000C	08/10/18 07:45	08/14/18 09:39			NA
A8H0328-16	Soil	EPA 8000C	08/10/18 08:10	08/14/18 09:39			NA

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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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.
F-13	The chromatographic pattern does not resemble the fuel standard used for quantitation
F-15	Results for diesel are estimated due to overlap from the reported oil result.
F-16	Results for oil are estimated due to overlap from the reported diesel result.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-37	Sample is non-homogenous. Sample results are less than MRL and duplicate results have hits greater than the MRL. See Duplicate results.
S-08	TPH-Gx Surrogate recovery cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract. See 8260B results for accurate Surrogate recovery.
T-02	This Batch QC sample was analyzed outside of the method specified 12 hour tune window. Results are estimated.
TEMP	Sample(s) received outside of recommended temperature. See Case Narrative.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " 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).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results 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.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
All reported analytes are included in Apex Laboratories' current ORELAP scope.					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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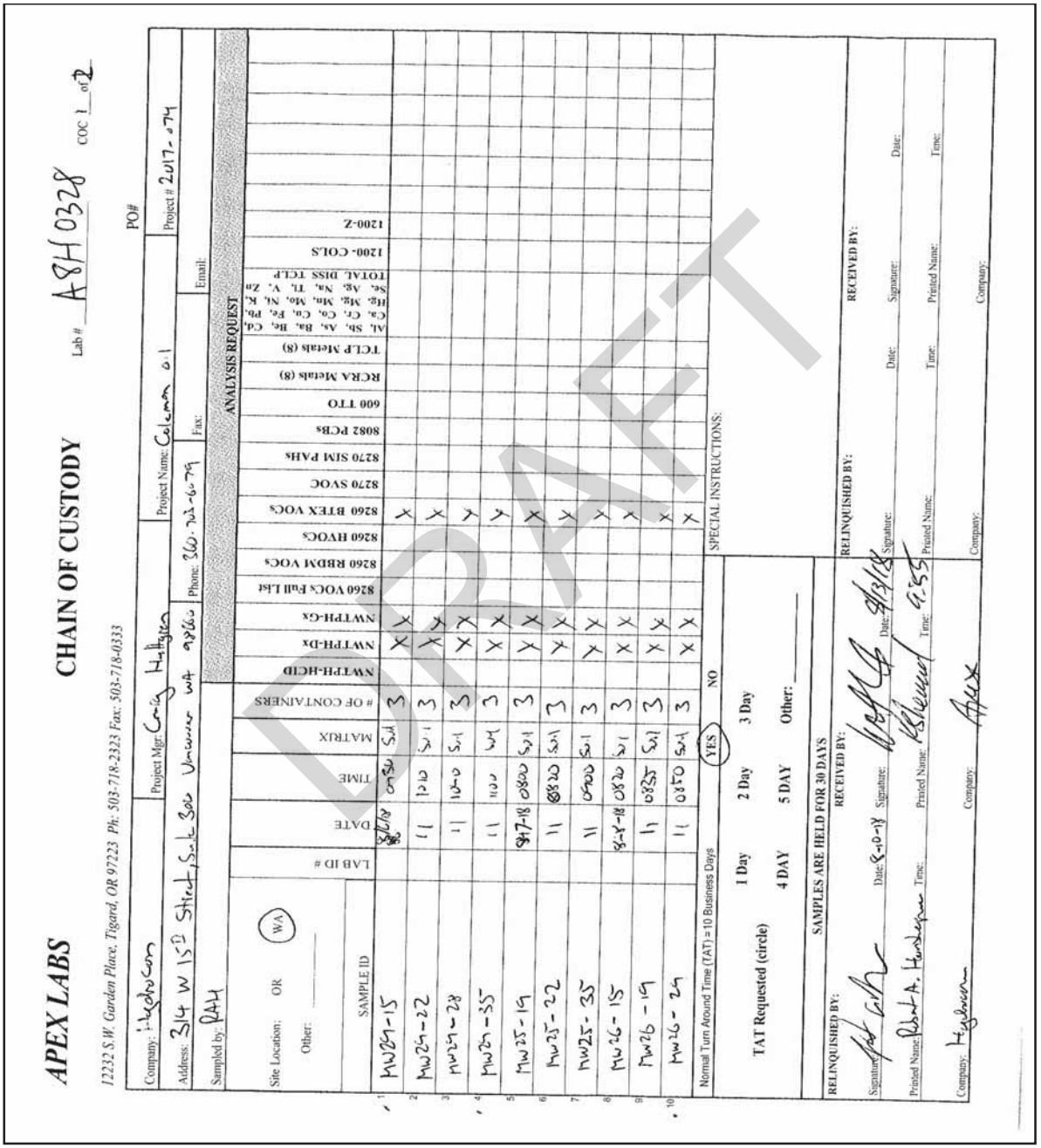

APEX LABS

CHAIN OF CUSTODY

Lab # A8H0328 COC 1 of 2

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

PO#

Company: Hydrocon | Project Mgr: Craig Hultgren | Project Name: Coleman 0.1 | Project # 2017-074

Address: 314 W 15th Street Suite 300 Vancouver WA 98660 | Phone: 360-linda-6079 | Fax: | Email:

Sampled by: RAH

Site Location: OR WA Other: _____

ANALYSIS REQUEST

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, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
MW29-15		8/7/18	0930	Soil	3		X	X				X									
MW29-22		"	1015	"	3		X	X				X									
MW29-28		"	1050	"	3		X	X				X									
MW29-35		"	1120	"	3		X	X				X									
MW25-19		8/7/18	0800	Soil	3		X	X				X									
MW25-22		"	0825	"	3		X	X				X									
MW25-35		"	0900	"	3		X	X				X									
MW26-15		8/8/18	0820	"	3		X	X				X									
MW26-19		"	0835	"	3		X	X				X									
MW26-29		"	0850	"	3		X	X				X									

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

SPECIAL INSTRUCTIONS:

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

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [signature] Printed Name: Robert A. Hutchinson Company: Hydrocon

RECEIVED BY: Date: 8-10-18 Signature: [signature] Time: [illegible] Company: APEX

RELINQUISHED BY: Signature: [signature] Printed Name: [illegible] Company: [illegible]

RECEIVED BY: Date: 8/21/18 Signature: [signature] Time: 0755 Printed Name: [illegible] Company: [illegible]

RELINQUISHED BY: Signature: [illegible] Printed Name: [illegible] Company: [illegible]

RECEIVED BY: Date: [illegible] Signature: [illegible] Time: [illegible] Printed Name: [illegible] Company: [illegible]

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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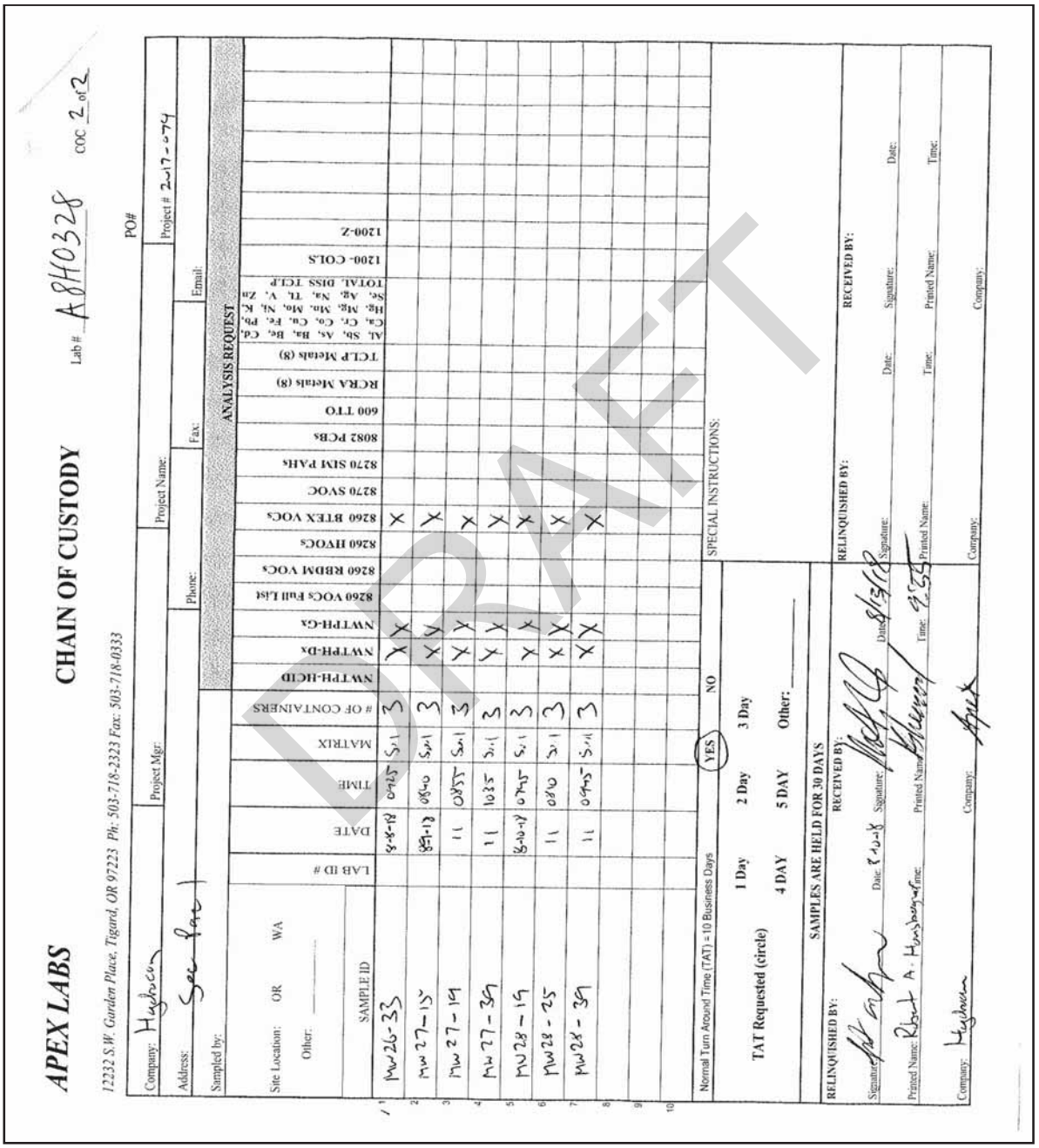
Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**



APEX LABS

CHAIN OF CUSTODY

Lab # A8H0328 COC 2 of 2

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

Company: Hydrocon Project Mgr: Project Name: PO# Project # 2017-074

Address: Phone: Fax: Email:

Sampled by: Sean Post

Site Location: OR WA

Other: _____

ANALYSIS REQUEST

	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, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z
1	MW26-33		8-8-18	0945	Soil	3		X	X				X									
2	MW27-15		8-9-18	0840	Soil	3		X	X				X									
3	MW27-19		8-8-18	0955	Soil	3		X	X				X									
4	MW27-35		8-8-18	1035	Soil	3		X	X				X									
5	MW28-19		8-9-18	0945	Soil	3		X	X				X									
6	MW28-25		8-8-18	0840	Soil	3		X	X				X									
7	MW28-35		8-8-18	0945	Soil	3		X	X				X									
8																						
9																						
10																						

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

SPECIAL INSTRUCTIONS:

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

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Printed Name: Company:

RECEIVED BY: Date: 8/8/18 Signature: Printed Name: Company: Apex

RELINQUISHED BY: Signature: Printed Name: Company:

RECEIVED BY: Date: Signature: Printed Name: Company:

RELINQUISHED BY: Date: 8/13/18 Signature: Printed Name: Company:

RECEIVED BY: Date: Signature: Printed Name: Company:

Time: 0955 Time: Time: Time:

DRAFT

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0328 - 08 21 18 1032**

APEX LABS COOLER RECEIPT FORM

Client: Hydrolon Element WO#: A8 H0328

Project/Project #: Coleman O.I

Delivery info:

Date/Time Received: 9:55 @ 8/13/18 By: MS

Delivered by: Apex___Client___ESS___FedEx___UPS X Swift___Senvoy___SDS___Other___

Cooler Inspection Inspected by: MS : 9:55 @ 8/13/18

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	14.4						
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	N						
Ice Type: (Gel/Real/Other)	Real						
Condition:	out						

Cooler out of temp? (Y/N) Possible reason why: Ice Melted

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: CMB : 8/13/18 @ 1130

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes___ No X Comments: ~~MW29-15 conts read~~ CMB 8/13/18
~~MW24-15~~. 1/2 MeOH VOAs for MW29-35 read

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___No___NA X

Comments:

Additional Information: MW28-35. Matched by time. ~~MW26-24~~ CMB 8/13/18
reads ~~MW26-24 on conts~~ MW26-33 1/2 MeOH VOAs
reads 2017-079. Matched by time + process of elimination.

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

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Wednesday, September 5, 2018

Craig Hultgren
HydroCon LLC
314 W 15th Street Suite 300
Vancouver, WA 98660

RE: A8H0529 - Coleman Wenatchee - 2017-074

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

Enclosed are the results of analyses for work order A8H0529, which was received by the laboratory on 8/18/2018 at 10:30:00AM.

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.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW29-15	A8H0529-01	Soil	08/13/18 08:05	08/18/18 10:30
MW29-24	A8H0529-02	Soil	08/13/18 08:35	08/18/18 10:30
MW29-34	A8H0529-03	Soil	08/13/18 09:20	08/18/18 10:30
MW29-40	A8H0529-04	Soil	08/13/18 09:40	08/18/18 10:30
MW30-15	A8H0529-05	Soil	08/14/18 08:30	08/18/18 10:30
MW30-20	A8H0529-06	Soil	08/14/18 08:50	08/18/18 10:30
MW30-28	A8H0529-07	Soil	08/14/18 09:30	08/18/18 10:30
MW30-32	A8H0529-08	Soil	08/14/18 09:40	08/18/18 10:30
MW30-40	A8H0529-09	Soil	08/14/18 10:00	08/18/18 10:30
MW31-19	A8H0529-10	Soil	08/15/18 07:45	08/18/18 10:30
MW31-28	A8H0529-11	Soil	08/15/18 08:30	08/18/18 10:30
MW31-38	A8H0529-12	Soil	08/15/18 09:00	08/18/18 10:30
MW0912-35	A8H0529-13	Soil	08/16/18 07:40	08/18/18 10:30
MW1012-35	A8H0529-14	Soil	08/16/18 13:45	08/18/18 10:30
MW32-10	A8H0529-15	Soil	08/17/18 07:20	08/18/18 10:30
MW32-14	A8H0529-16	Soil	08/17/18 07:40	08/18/18 10:30
MW32-28	A8H0529-17	Soil	08/17/18 09:00	08/18/18 10:30
SL01-02	A8H0529-18	Soil	08/17/18 09:40	08/18/18 10:30

Apex Laboratories

Lisa Domenighini, Client Services Manager

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Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

AnalRte	Sample 2esult	Detection Limit	2eporting Limit	. nits	Dilution	Date AnalRLey	Methoy 2efd	Notes
MW29-15 (A8H0529-01)				**Matrix: Soil**		**Batch: 8081060**		
Diesel	ND	HH	8-dz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 72 %*		*Limits: 50-150 %*	*1*	*08/24/18*	*NWTPH-Dx*	
MW29-24 (A8H0529-02)				**Matrix: Soil**		**Batch: 8081060**		
Diesel	**81.2**	HH	8-dz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	**F-13**
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*		*Limits: 50-150 %*	*1*	*08/24/18*	*NWTPH-Dx*	
MW29-34 (A8H0529-03)				**Matrix: Soil**		**Batch: 8081060**		
Diesel	ND	HH	8-dz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*		*Limits: 50-150 %*	*1*	*08/24/18*	*NWTPH-Dx*	
MW29-40 (A8H0529-04)				**Matrix: Soil**		**Batch: 8081060**		
Diesel	ND	HH	8-dz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/83/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 84 %*		*Limits: 50-150 %*	*1*	*08/24/18*	*NWTPH-Dx*	
MW30-15 (A8H0529-05)				**Matrix: Soil**		**Batch: 8081025**		
Diesel	ND	HH	8-dz	mg/6g yrR	1	z0/88/10	Nk WPTHDx	
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/88/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*08/22/18*	*NWTPH-Dx*	
MW30-20 (A8H0529-06)				**Matrix: Soil**		**Batch: 8081025**		
Diesel	**424**	HH	8-dz	mg/6g yrR	1	z0/88/10	Nk WPTHDx	**F-13**
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/88/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*	*1*	*08/22/18*	*NWTPH-Dx*	
MW30-28 (A8H0529-07)				**Matrix: Soil**		**Batch: 8081025**		
Diesel	**1900**	HH	8-dz	mg/6g yrR	1	z0/8O10	Nk WPTHDx	**F-13**
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/8O10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 108 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW30-32 (A8H0529-08)				**Matrix: Soil**		**Batch: 8081025**		
Diesel	**407**	HH	8-dz	mg/6g yrR	1	z0/8O10	Nk WPTHDx	**F-13**

Apex Laboratories

Lisa Domenighini, Client Services Manager

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Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

AnalRte	Sample 2esult	Detection Limit	2eporting Limit	.nits	Dilution	Date AnalRLey	Methoy 2efd	Notes
MW30-32 (A8H0529-08)				**Matrix: Soil**			**Batch: 8081025**	
5il	ND	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 103 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW30-40 (A8H0529-09)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	**266**	HHH	84dG	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	**F-13, F-15**
Oil	**250**	HHH	-Qd	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	**F-03, F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 99 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW31-19 (A8H0529-10)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	ND	HHH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
5il	ND	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 104 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW31-28 (A8H0529-11)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	**564**	HHH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	**F-13**
5il	ND	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW31-38 (A8H0529-12)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	ND	HHH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
5il	ND	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW0912-35 (A8H0529-13)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	**176**	HHH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	**F-13, F-15**
Oil	**117**	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	**F-03, F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 89 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW1012-35 (A8H0529-14)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	**50.6**	HHH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	**F-13**
5il	ND	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*08/23/18*	*NWTPH-Dx*	
MW32-10 (A8H0529-15)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	ND	HHH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
5il	ND	HHH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

AnalRte	Sample 2esult	Detection Limit	2eporting Limit	.nits	Dilution	Date AnalRLey	Methoy 2efd	Notes
MW32-10 (A8H0529-15)				**Matrix: Soil**			**Batch: 8081025**	
Surrogate: o-Terphenyl (Surr)		*Recovery: 95 %*	*Limits: 50-150 %*		*1*	*08/23/18*	*NWTPH-Dx*	
MW32-14 (A8H0529-16RE1)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	**3400**	HH	81(	mg/6g yrR	1z	z0/8O/10	Nk WPTHDx	**F-13**
5 il	ND	HH	3O0	mg/6g yrR	1z	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 110 %*	*Limits: 50-150 %*		*10*	*08/23/18*	*NWTPH-Dx*	*S-05*
MW32-28 (A8H0529-17)				**Matrix: Soil**			**Batch: 8081025**	
Diesel	ND	HH	8-dz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
5 il	ND	HH	-zdz	mg/6g yrR	1	z0/8O/10	Nk WPTHDx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 76 %*	*Limits: 50-150 %*		*1*	*08/23/18*	*NWTPH-Dx*	

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW29-15 (A8H0529-01)				**Matrix: Soil**		**Batch: 8080916**		
Gasoline Range Organics	ND	[1]	4.4	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits:* *50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*90 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW29-24 (A8H0529-02)				**Matrix: Soil**		**Batch: 8080916**		
Gasoline Range Organics	**33.6**	[1]	6.8	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*104 %*	*Limits:* *50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*91 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW29-34 (A8H0529-03)				**Matrix: Soil**		**Batch: 8080916**		
Gasoline Range Organics	ND	[1]	3.3	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*99 %*	*Limits:* *50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*91 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW29-40 (A8H0529-04)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	ND	[1]	4.1	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*104 %*	*Limits:* *50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW30-15 (A8H0529-05)				**Matrix: Soil**		**Batch: 8080916**		
Gasoline Range Organics	ND	[1]	4.0	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits:* *50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*91 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW30-20 (A8H0529-06)				**Matrix: Soil**		**Batch: 8080916**		
Gasoline Range Organics	**132**	[1]	4.1G	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*157 %*	*Limits:* *50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	*S-08*
1,4-Difluorobenzene (Sur)			*87 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW30-28 (A8H0529-07RE1)				**Matrix: Soil**		**Batch: 8080959**		
Gasoline Range Organics	**618**	[1]	44.0	mg/kg dry	10	08/21/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery:*	*113 %*	*Limits:* *50-150 %*	*1*	*08/21/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*98 %*	*50-150 %*	*1*	*08/21/18*	*NWTPH-Gx (MS)*	
MW30-32 (A8H0529-08)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	**96.2**	[1]	4.0	mg/kg dry	1	08/20/18	NWTPH-Gx (MS)	

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW30-32 (A8H0529-08)				**Matrix: Soil**		**Batch: 8080917**		
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 120 %*	*Limits: 50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*99 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW30-40 (A8H0529-09)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	ND	[illegible]	4.0	mg/kg wet	1	08/18/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW31-19 (A8H0529-10)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	ND	[illegible]	3.81	mg/kg wet	1	08/18/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW31-28 (A8H0529-11)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	**125**	[illegible]	3.48	mg/kg wet	1	08/18/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 144 %*	*Limits: 50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW31-38 (A8H0529-12)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	ND	[illegible]	3.80	mg/kg wet	1	08/18/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 106 %*	*Limits: 50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW0912-35 (A8H0529-13)				**Matrix: Soil**		**Batch: 8080917**		
Gasoline Range Organics	**12.8**	[illegible]	4.11	mg/kg wet	1	08/18/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*08/20/18*	*NWTPH-Gx (MS)*	
MW1012-35 (A8H0529-14)				**Matrix: Soil**		**Batch: 8080959**		
Gasoline Range Organics	ND	[illegible]	3.64	mg/kg wet	1	08/21/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 107 %*	*Limits: 50-150 %*	*1*	*08/21/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*96 %*	*50-150 %*	*1*	*08/21/18*	*NWTPH-Gx (MS)*	
MW32-10 (A8H0529-15)				**Matrix: Soil**		**Batch: 8080959**		
Gasoline Range Organics	ND	[illegible]	3.26	mg/kg wet	1	08/21/18	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 105 %*	*Limits: 50-150 %*	*1*	*08/21/18*	*NWTPH-Gx (MS)*	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref'd	Notes
MW32-10 (A8H0529-15)				**Matrix: Soil**		**Batch: 8080959**		
Surrogate: 1,4-Difluorobenzene (Sur)		*Recovery: 96 %*		*Limits: 50-150 %*	*1*	*08/21/18*	*NWTPH-Gx (MS)*	
MW32-14 (A8H0529-16RE1)				**Matrix: Soil**		**Batch: 8081010**		
Gasoline Range Organics	**1930**	HH	3Gd	mg/6g yrR	-zz	z0/88/10	Nk WPTHj x 9MS7	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 163 %*		*Limits: 50-150 %*	*1*	*08/22/18*	*NWTPH-Gx (MS)*	*S-04*
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*08/22/18*	*NWTPH-Gx (MS)*	
MW32-28 (A8H0529-17RE1)				**Matrix: Soil**		**Batch: 8081010**		
) asoline 2 ange 5 rganics	ND	HH	-dC0	mg/6g yrR	-z	z0/88/10	Nk WPTHj x 9MS7	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 107 %*		*Limits: 50-150 %*	*1*	*08/22/18*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*97 %*	*50-150 %*	*1*	*08/22/18*	*NWTPH-Gx (MS)*	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW29-15 (A8H0529-01)				**Matrix: Soil**		**Batch: 8080916**		
Benzene	ND	0.00200	0.0110	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	0.00200	0.00440	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	0.00200	0.00800	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	0.00200	0.00603	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*100 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW29-24 (A8H0529-02)				**Matrix: Soil**		**Batch: 8080916**		
Benzene	ND	0.00200	0.0113	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	0.00200	0.00453	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	0.00200	0.00800	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	0.00200	0.0118	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW29-34 (A8H0529-03)				**Matrix: Soil**		**Batch: 8080916**		
Benzene	ND	0.00200	0.0112	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	0.00200	0.00483	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	0.00200	0.00848	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	0.00200	0.0104	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*95 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW29-40 (A8H0529-04)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	0.00200	0.0110	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	0.00200	0.00410	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	0.00200	0.00780	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	0.00200	0.00600	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW30-15 (A8H0529-05)				**Matrix: Soil**		**Batch: 8080916**		
Benzene	ND	0.00200	0.0110	mg/kg dry	1	08/20/18	EPA 8260C	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW30-15 (A8H0529-05)				**Matrix: Soil**		**Batch: 8080916**		
Toluene	ND	[illegible]	0.0104	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	[illegible]	0.0048	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	[illegible]	0.0096	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*94 %*	*Limits:* *80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW30-20 (A8H0529-06)				**Matrix: Soil**		**Batch: 8080916**		
Benzene	ND	[illegible]	0.0018	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	[illegible]	0.0041	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	[illegible]	0.0020	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	[illegible]	0.0048	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*90 %*	*Limits:* *80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*95 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW30-28 (A8H0529-07)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[illegible]	0.0011	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	[illegible]	0.0024	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	**0.0473**	[illegible]	0.0012	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	**0.123**	[illegible]	0.0033	mg/kg dry	1	08/20/18	EPA 8260C	**M-02**
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:* *80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW30-32 (A8H0529-08)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[illegible]	0.0118	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	[illegible]	0.0--0	mg/kg dry	1	08/20/18	EPA 8260C	
Ethylbenzene	ND	[illegible]	0.0080	mg/kg dry	1	08/20/18	EPA 8260C	
Xylenes, total	ND	[illegible]	0.0CG	mg/kg dry	1	08/20/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:* *80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW30-40 (A8H0529-09)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[illegible]	0.0104	mg/kg dry	1	08/20/18	EPA 8260C	
Toluene	ND	[illegible]	0.0040	mg/kg dry	1	08/20/18	EPA 8260C	

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW30-40 (A8H0529-09)				**Matrix: Soil**		**Batch: 8080917**		
Naphthalene	ND	[CALC]	0.0238	mg/kg dry	1	08/17/18	EPA 8260C	
Xylenes, total	**0.109**	[CALC]	0.0476	mg/kg dry	1	08/17/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW31-19 (A8H0529-10)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[CALC]	0.0131	mg/kg dry	1	08/17/18	EPA 8260C	
Toluene	ND	[CALC]	0.0262	mg/kg dry	1	08/17/18	EPA 8260C	
Naphthalene	ND	[CALC]	0.0262	mg/kg dry	1	08/17/18	EPA 8260C	
Xylenes, total	ND	[CALC]	0.0393	mg/kg dry	1	08/17/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW31-28 (A8H0529-11)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[CALC]	0.0125	mg/kg dry	1	08/17/18	EPA 8260C	
Toluene	ND	[CALC]	0.0250	mg/kg dry	1	08/17/18	EPA 8260C	
Naphthalene	ND	[CALC]	0.0250	mg/kg dry	1	08/17/18	EPA 8260C	
Xylenes, total	ND	[CALC]	0.0375	mg/kg dry	1	08/17/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW31-38 (A8H0529-12)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[CALC]	0.0127	mg/kg dry	1	08/17/18	EPA 8260C	
Toluene	ND	[CALC]	0.0254	mg/kg dry	1	08/17/18	EPA 8260C	
Naphthalene	ND	[CALC]	0.0254	mg/kg dry	1	08/17/18	EPA 8260C	
Xylenes, total	ND	[CALC]	0.0381	mg/kg dry	1	08/17/18	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW0912-35 (A8H0529-13)				**Matrix: Soil**		**Batch: 8080917**		
Benzene	ND	[CALC]	0.0108	mg/kg dry	1	08/17/18	EPA 8260C	
Toluene	ND	[CALC]	0.0215	mg/kg dry	1	08/17/18	EPA 8260C	
Ethylbenzene	**0.102**	[CALC]	0.0322	mg/kg dry	1	08/17/18	EPA 8260C	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

AnalRte	Sample 2esult	Detection Limit	2eporting Limit	.nits	Dilution	Date AnalRLey	Methoy 2efd	Notes
MW0912-35 (A8H0529-13)				**Matrix: Soil**			**Batch: 8080917**	
Xylenes, total	**0.495**	HHI	zdz((1	mg/6g yrR	-z	z0/8z/10	-zO-A/084zC	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*102 %*	*80-120 %*	*1*	*08/20/18*	*5035A/8260C*	
MW1012-35 (A8H0529-14)				**Matrix: Soil**			**Batch: 8080959**	
BenUene	ND	HHI	zdz(-O	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
Woluene	ND	HHI	zdz3G4	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
QthRlbenUene	ND	HHI	zdz8C0	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
E Rlenes, total	ND	HHI	zdzG13	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*97 %*	*80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
MW32-10 (A8H0529-15)				**Matrix: Soil**			**Batch: 8080959**	
BenUene	ND	HHI	zdz1z8	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
Woluene	ND	HHI	zdz-z(	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
QthRlbenUene	ND	HHI	zdz8--	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
E Rlenes, total	ND	HHI	zdzG43	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits: 80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
MW32-14 (A8H0529-16)				**Matrix: Soil**			**Batch: 8080959**	
BenUene	ND	HHI	zdz(-z	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
Woluene	ND	HHI	zdz3G-	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
QthRlbenUene	ND	HHI	zdz8C0	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
E Rlenes, total	ND	HHI	zdzG1O	mg/6g yrR	-z	z0/81/10	-zO-A/084zC	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/21/18*	*5035A/8260C*	
MW32-28 (A8H0529-17RE1)				**Matrix: Soil**			**Batch: 8081010**	
BenUene	ND	HHI	zdz1z0	mg/6g yrR	-z	z0/88/10	-zO-A/084zC	
Woluene	ND	HHI	zdz-C0	mg/6g yrR	-z	z0/88/10	-zO-A/084zC	
QthRlbenUene	ND	HHI	zdz84(	mg/6g yrR	-z	z0/88/10	-zO-A/084zC	
E Rlenes, total	ND	HHI	zdz0z0	mg/6g yrR	-z	z0/88/10	-zO-A/084zC	

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref	Notes
MW32-28 (A8H0529-17RE1)				**Matrix: Soil**			**Batch: 8081010**	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits: 80-120 %*	*1*	*08/22/18*	*5035A/8260C*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*08/22/18*	*5035A/8260C*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*08/22/18*	*5035A/8260C*	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

AnalRte	Sample 2esult	Detection Limit	2eporting Limit	. nits	Dilution	Date AnalRLey	Methoy 2efd	Notes
MW29-15 (A8H0529-01)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**93.6**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW29-24 (A8H0529-02)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**86.2**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW29-34 (A8H0529-03)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**88.7**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW29-40 (A8H0529-04)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**87.2**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW30-15 (A8H0529-05)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**87.0**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW30-20 (A8H0529-06)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**80.7**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW30-28 (A8H0529-07)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**85.9**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW30-32 (A8H0529-08)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**83.5**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW30-40 (A8H0529-09)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**73.1**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW31-19 (A8H0529-10)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**88.6**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW31-28 (A8H0529-11)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**89.2**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW31-38 (A8H0529-12)				**Matrix: Soil**		**Batch: 8080919**		
% Solids	**80.9**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW0912-35 (A8H0529-13)				**Matrix: Soil**		**Batch: 8080919**		

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

AnalRte	Sample 2esult	Detection Limit	2eporting Limit	.nits	Dilution	Date AnalRLey	Methoy 2efd	Notes
MW0912-35 (A8H0529-13)				**Matrix: Soil**			**Batch: 8080919**	
% Solids	**82.5**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW1012-35 (A8H0529-14)				**Matrix: Soil**			**Batch: 8080919**	
% Solids	**88.3**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW32-10 (A8H0529-15)				**Matrix: Soil**			**Batch: 8080919**	
% Solids	**89.1**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW32-14 (A8H0529-16)				**Matrix: Soil**			**Batch: 8080919**	
% Solids	**89.4**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	
MW32-28 (A8H0529-17)				**Matrix: Soil**			**Batch: 8080919**	
% Solids	**83.0**	HH	1dzz	% bRk eight	1	z0/81/10	QPA 0zzzC	

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Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Washington Department of Ecology Methods

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref	Notes
SL01-02 (A8H0529-18)				**Matrix: Soil**			**Batch: BGH0567**	
Batch: BGH0567								
C5-C8 Aliphatics	ND	80.8	404	mg/kg dry	20	08/22/18	WA VPH	
C6-C8 Aliphatics	**31.5**	80.8	404	mg/kg dry	20	08/22/18	WA VPH	**J, D**
C8-C10 Aliphatics	**427**	80.8	404	mg/kg dry	20	08/22/18	WA VPH	**D**
C10-C12 Aliphatics	**1260**	80.8	404	mg/kg dry	20	08/22/18	WA VPH	**D**
C8-C10 Aromatics	**605**	80.8	404	mg/kg dry	20	08/22/18	WA VPH	**D**
C10-C12 Aromatics	**995**	80.8	404	mg/kg dry	20	08/22/18	WA VPH	**D**
C12-C13 Aromatics	**801**	80.8	404	mg/kg dry	20	08/22/18	WA VPH	**D**
Batch: BGH0567								
Surrogate: PID: 2,5-Dibromotoluene		*Recovery:*	*130 %*	*Limits:*	*60-140 %*	*1*	*08/22/18*	*WA VPH*
FID: 2,5-Dibromotoluene			*117 %*		*60-140 %*	*1*	*08/22/18*	*WA VPH*
SL01-02 (A8H0529-18RE1)				**Matrix: Soil**			**Batch: BGH0638**	
Batch: BGH0638								
C8-C10 Aliphatics	**625**	90.6	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C10-C12 Aliphatics	**2480**	181	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C12-C16 Aliphatics	**8580**	815	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C16-C21 Aliphatics	**5390**	90.6	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C21-C34 Aliphatics	**458**	815	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C8-C10 Aromatics	**39.4**	45.3	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C10-C12 Aromatics	**130**	90.6	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C12-C16 Aromatics	**481**	181	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C16-C21 Aromatics	**535**	90.6	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
C21-C34 Aromatics	**201**	181	83.3	mg/kg dry	10	09/05/18	WA EPH	**D**
Batch: BGH0638								
Surrogate: o-Terphenyl		*Recovery:*	*75.3 %*	*Limits:*	*30-160 %*	*10*	*09/05/18*	*WA EPH*
1-Chloro-octadecane			*56.7 %*		*30-160 %*	*10*	*09/05/18*	*WA EPH*

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8081025 - EPA 3546 (Fuels)									Soil			
Blank (8081025-BLK1)		Prepared: 09/08/18 10:00		Analyzed: 09/08/18 18:18								
NWTPH-Dx												
Diesel	ND	[CALC]	50.0	mg/kg wet	1	[CALC]		[CALC]				
Oil	ND	[CALC]	250	mg/kg wet	1	[CALC]		[CALC]				
Surr: o-Terphenyl (Surr)		*Recovery: 103 %*		*Limits: 50-150 %*		*Dilution: 1x*						
LCS (8081025-BS1)		Prepared: 09/08/18 10:00		Analyzed: 09/08/18 18:38								
NWTPH-Dx												
Diesel	113	[CALC]	50.0	mg/kg wet	1	1000		113	61-141			
Surr: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*		*Dilution: 1x*						
Duplicate (8081025-DUP1)		Prepared: 09/08/18 10:00		Analyzed: 09/08/18 18:58								
QC Source Sample: MW30-15 (A8H0529-05)												
NWTPH-Dx												
Diesel	ND	[CALC]	50.0	mg/kg dry	1	[CALC]	ND	[CALC]		[CALC]	30%	
Oil	ND	[CALC]	250	mg/kg dry	1	[CALC]	ND	[CALC]		[CALC]	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 98 %*		*Limits: 50-150 %*		*Dilution: 1x*						
Batch 8081060 - EPA 3546 (Fuels)									Soil			
Blank (8081060-BLK2)		Prepared: 09/10/18 12:12		Analyzed: 09/13/18 18:22								
NWTPH-Dx												
Diesel	ND	[CALC]	50.0	mg/kg wet	1	[CALC]		[CALC]				
Oil	ND	[CALC]	250	mg/kg wet	1	[CALC]		[CALC]				
Surr: o-Terphenyl (Surr)		*Recovery: 91 %*		*Limits: 50-150 %*		*Dilution: 1x*						
LCS (8081060-BS1)		Prepared: 09/10/18 12:12		Analyzed: 09/13/18 18:42								
NWTPH-Dx												
Diesel	113	[CALC]	50.0	mg/kg wet	1	1000		113	61-141			
Surr: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*		*Dilution: 1x*						

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080916 - EPA 5035A							**Soil**					
Blank (8080916-BLK1)		Prepared: 08/30/18 08:00		Analyzed: 08/30/18 11:02								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	[1.00]	0.200	mg/kg wet	1	[1.00]						
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*96 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*90 %*		*50-150 %*			*"*				
LCS (8080916-BS2)		Prepared: 08/30/18 08:00		Analyzed: 08/30/18 11:20								
NWTPH-Gx (MS)												
Gasoline Range Organics	8.00	[1.00]	0.200	mg/kg wet	1	8.00		100	80-120 %	[1.00]	[1.00]	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*95 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*95 %*		*50-150 %*			*"*				
Duplicate (8080916-DUP1)		Prepared: 08/30/18 08:00		Analyzed: 08/30/18 13:18								
QC Source Sample: MW29-24 (A8H0529-02)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**37.6**	[1.00]	0.200	mg/kg dry	1		37.6			11	20%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*106 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*91 %*		*50-150 %*			*"*				
Duplicate (8080916-DUP2)		Prepared: 08/30/18 08:00		Analyzed: 08/30/18 14:00								
QC Source Sample: MW30-15 (A8H0529-05)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	[1.00]	4.83	mg/kg dry	1		ND			[1.00]	20%	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*95 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*			*"*				

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8080917 - EPA 5035A							**Soil**					
Blank (8080917-BLK1)		Prepared: 09/05/18 13:30		Analyzed: 09/05/18 18:30								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.200	mg/kg wet	1							
Surr: 4-Bromofluorobenzene (Surr)		*Recovery:*	*98 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Surr)			*93 %*		*50-150 %*			*"*				
LCS (8080917-BS2)		Prepared: 09/05/18 13:30		Analyzed: 09/05/18 18:14								
NWTPH-Gx (MS)												
Gasoline Range Organics	0.838		0.200	mg/kg wet	1	1.00		84	60-120 %			
Surr: 4-Bromofluorobenzene (Surr)		*Recovery:*	*96 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Surr)			*95 %*		*50-150 %*			*"*				
Duplicate (8080917-DUP2)		Prepared: 09/14/18 23:30		Analyzed: 09/05/18 20:48								**T-02**
QC Source Sample: MW0912-35 (A8H0529-13)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**24.0**		0.208	mg/kg dry	1		18.0			**61**	**30%**	QM-07
Surr: 4-Bromofluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Surr)			*98 %*		*50-150 %*			*"*				

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8080959 - EPA 5035A												**Soil**
Blank (8080959-BLK1)		Prepared: 10/08/18 10:10		Analyzed: 10/08/18 11:40								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		0.200	mg/kg wet	1							
Surr: 4-Bromofluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Surr)			*96 %*		*50-150 %*			*"*				
LCS (8080959-BS2)		Prepared: 10/08/18 10:10		Analyzed: 10/08/18 11:10								
NWTPH-Gx (MS)												
Gasoline Range Organics	0.538		0.200	mg/kg wet	1	0.500		108	60-140 %			
Surr: 4-Bromofluorobenzene (Surr)		*Recovery:*	*103 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Surr)			*99 %*		*50-150 %*			*"*				
Duplicate (8080959-DUP2)		Prepared: 10/14/18 10:30		Analyzed: 10/08/18 16:33								
QC Source Sample: MW1012-35 (A8H0529-14)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND		3.33	mg/kg dry	1		ND				20 %	
Surr: 4-Bromofluorobenzene (Surr)		*Recovery:*	*109 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Surr)			*97 %*		*50-150 %*			*"*				

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8081010 - EPA 5035A									**Soil**			
Blank (8081010-BLK1)		Prepared: 08/10/18 08:22		Analyzed: 08/10/18 16:06								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	[CALC]	0.200	mg/kg wet	1	[CALC]		[CALC]	[CALC]	[CALC]	[CALC]	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*103 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*96 %*		*50-150 %*			*"*				
LCS (8081010-BS2)		Prepared: 08/10/18 08:22		Analyzed: 08/10/18 11:12								
NWTPH-Gx (MS)												
Gasoline Range Organics	0.538	[CALC]	0.200	mg/kg wet	1	0.500		108	50-150 %	[CALC]	[CALC]	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery:*	*97 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
1,4-Difluorobenzene (Sur)			*98 %*		*50-150 %*			*"*				

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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8080916 - EPA 5035A							**Soil**					
Blank (8080916-BLK1)		Prepared: 08/27/18 09:00		Analyzed: 08/27/18 11:02								
5035A/8260C												
Benzene	ND		0.0500	mg/kg wet	1							
Toluene	ND		0.0500	mg/kg wet	1							
Ethylbenzene	ND		0.0500	mg/kg wet	1							
Xylenes, total	ND		0.100	mg/kg wet	1							
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 94 %*		*Limits: 80-120 %*		*Dilution: 1x*						
Toluene-d8 (Surr)		*99 %*		*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)		*106 %*		*80-120 %*		*"*						
LCS (8080916-BS1)		Prepared: 08/27/18 09:00		Analyzed: 08/27/18 10:38								
5035A/8260C												
Benzene	0.111		0.0500	mg/kg wet	1	0.100		111	80-120%			
Toluene	0.104		0.0500	mg/kg wet	1	0.100		104	80-120%			
Ethylbenzene	0.100		0.0500	mg/kg wet	1	0.100		100	80-120%			
Xylenes, total	0.310		0.100	mg/kg wet	1	0.300		103	80-120%			
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 94 %*		*Limits: 80-120 %*		*Dilution: 1x*						
Toluene-d8 (Surr)		*100 %*		*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)		*103 %*		*80-120 %*		*"*						
Duplicate (8080916-DUP1)		Prepared: 08/27/18 09:00		Analyzed: 08/27/18 13:18								
QC Source Sample: MW29-24 (A8H0529-02)												
5035A/8260C												
Benzene	ND		0.0500	mg/kg dry	1		ND				30%	
Toluene	ND		0.0500	mg/kg dry	1		ND				30%	
Ethylbenzene	**0.181**		0.0500	mg/kg dry	1		0.140			**200**	**30%**	
Xylenes, total	**0.997**		0.100	mg/kg dry	1		0.44			**175**	**30%**	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 93 %*		*Limits: 80-120 %*		*Dilution: 1x*						
Toluene-d8 (Surr)		*99 %*		*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)		*102 %*		*80-120 %*		*"*						
Duplicate (8080916-DUP2)		Prepared: 08/13/18 09:00		Analyzed: 08/27/18 14:00								
QC Source Sample: MW30-15 (A8H0529-05)												
5035A/8260C												

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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8080916 - EPA 5035A								**Soil**				
Duplicate (8080916-DUP2)		Prepared: 09/13/18 09:02		Analyzed: 09/18/18 14:00								
QC Source Sample: MW30-15 (A8H0529-05)												
Benzene	ND	[1]	0.0180	mg/kg dry	1	[1]	ND	[1]	[1]	[1]	30%	
Toluene	ND	[1]	0.0430	mg/kg dry	1	[1]	ND	[1]	[1]	[1]	30%	
Ethylbenzene	ND	[1]	0.0860	mg/kg dry	1	[1]	ND	[1]	[1]	[1]	30%	
Xylenes, total	**0.101**	[1]	0.241	mg/kg dry	1	[1]	0.144	[1]	[1]	**41**	**30%**	J+, J-
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 95 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*99 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*103 %*		*80-120 %*			*"*					
Matrix Spike (8080916-MS1)		Prepared: 09/13/18 09:02		Analyzed: 09/18/18 14:56								
QC Source Sample: MW30-20 (A8H0529-06)												
5035A/8260C												
Benzene	1.26	[1]	0.0180	mg/kg dry	1	1.08	ND	0	65-135%	[1]	[1]	
Toluene	1.11	[1]	0.0431	mg/kg dry	1	1.08	ND	0	65-135%	[1]	[1]	
Ethylbenzene	1.08	[1]	0.0860	mg/kg dry	1	1.08	ND	0	64-138%	[1]	[1]	
Xylenes, total	0.00	[1]	0.241	mg/kg dry	1	0.00	ND	1.8	60-135%	[1]	[1]	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 91 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)		*97 %*		*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)		*100 %*		*80-120 %*			*"*					

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8080917 - EPA 5035A							**Soil**					
Blank (8080917-BLK1)		Prepared: 10/8/18 09:00		Analyzed: 10/8/18 18:30								
5035A/8260C												
Benzene	ND		0.00144	mg/kg wet	1							
Toluene	ND		0.00500	mg/kg wet	1							
Ethylbenzene	ND		0.00214	mg/kg wet	1							
Xylenes, total	ND		0.00600	mg/kg wet	1							
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 99 %*		*Limits: 80-120 %*		*Dilution: 1x*						
Toluene-d8 (Surr)		*100 %*		*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)		*98 %*		*80-120 %*		*"*						
LCS (8080917-BS1)		Prepared: 10/8/18 09:00		Analyzed: 10/8/18 11:30								
5035A/8260C												
Benzene	0.0968		0.00144	mg/kg wet	1	0.100		96.8	70-130 %			
Toluene	0.0941		0.00500	mg/kg wet	1	0.100		94.1	70-130 %			
Ethylbenzene	0.0910		0.00286	mg/kg wet	1	0.100		91.0	70-130 %			
Xylenes, total	0.281		0.00800	mg/kg wet	1	0.300		93.8	70-130 %			
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 100 %*		*Limits: 80-120 %*		*Dilution: 1x*						
Toluene-d8 (Surr)		*101 %*		*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)		*97 %*		*80-120 %*		*"*						
Duplicate (8080917-DUP2)		Prepared: 10/14/18 23:30		Analyzed: 10/8/18 18:48								**T-02**
QC Source Sample: MW0912-35 (A8H0529-13)												
5035A/8260C												
Benzene	ND		0.00144	mg/kg dry	1		ND				30%	
Toluene	ND		0.00508	mg/kg dry	1		ND				30%	
Ethylbenzene	ND		0.00314	mg/kg dry	1		0.0128			***	**30%**	XH-02
Xylenes, total	ND		0.00878	mg/kg dry	1		0.0363			***	**30%**	XH-02
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 102 %*		*Limits: 80-120 %*		*Dilution: 1x*						
Toluene-d8 (Surr)		*99 %*		*80-120 %*		*"*						
4-Bromofluorobenzene (Surr)		*98 %*		*80-120 %*		*"*						

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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8080959 - EPA 5035A								**Soil**				
Blank (8080959-BLK1)		Prepared: 10/01/18 10:10		Analyzed: 10/01/18 11:04								
5035A/8260C												
Benzene	ND		0.0250	mg/kg wet	1							
Toluene	ND		0.0500	mg/kg wet	1							
Ethylbenzene	ND		0.0250	mg/kg wet	1							
Xylenes, total	ND		0.0750	mg/kg wet	1							
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*			*"*				
LCS (8080959-BS1)		Prepared: 10/01/18 10:10		Analyzed: 10/01/18 12:31								
5035A/8260C												
Benzene	0.0450		0.0250	mg/kg wet	1	0.0500		90	70-130%			
Toluene	0.0490		0.0500	mg/kg wet	1	0.0500		98	70-130%			
Ethylbenzene	0.0480		0.0250	mg/kg wet	1	0.0500		96	70-130%			
Xylenes, total	0.144		0.0750	mg/kg wet	1	0.150		96	70-130%			
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				
Duplicate (8080959-DUP2)		Prepared: 10/01/18 10:03		Analyzed: 10/01/18 16:33								
QC Source Sample: MW1012-35 (A8H0529-14)												
5035A/8260C												
Benzene	ND		0.0250	mg/kg dry	1		ND				30%	
Toluene	ND		0.0500	mg/kg dry	1		ND				30%	
Ethylbenzene	ND		0.0250	mg/kg dry	1		ND				30%	
Xylenes, total	ND		0.0750	mg/kg dry	1		ND				30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*97 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*			*"*				

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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8081010 - EPA 5035A								**Soil**				
Blank (8081010-BLK1)		Prepared: 09/18/18 09:22		Analyzed: 09/18/18 16:06								
5035A/8260C												
Benzene	ND		0.00250	mg/kg wet	1							
Toluene	ND		0.00500	mg/kg wet	1							
Ethylbenzene	ND		0.00250	mg/kg wet	1							
Xylenes, total	ND		0.00750	mg/kg wet	1							
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*98 %*		*80-120 %*		"					
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*		"					
LCS (8081010-BS1)		Prepared: 09/18/18 09:22		Analyzed: 09/18/18 11:30								
5035A/8260C												
Benzene	0.0238		0.00250	mg/kg wet	1	0.0250		95	70-130%			
Toluene	0.0240		0.00500	mg/kg wet	1	0.0250		96	70-130%			
Ethylbenzene	0.0241		0.00250	mg/kg wet	1	0.0250		96	70-130%			
Xylenes, total	0.0731		0.00750	mg/kg wet	1	0.0750		97	70-130%			
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 102 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*101 %*		*80-120 %*		"					
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*		"					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080919 - Total Solids (Dry Weight)								**Soil**				
Duplicate (8080919-DUP3)		Prepared: 08/30/18 13:30		Analyzed: 08/31/18 20:30								
QC Source Sample: MW30-40 (A8H0529-09)												
EPA 8000C												
% Solids	**73.0**	NR	1.00	% by Weight	1	NR	73.0	NR	NR	0.0	10%	
Duplicate (8080919-DUP4)		Prepared: 08/30/18 13:30		Analyzed: 08/31/18 20:30								
QC Source Sample: MW0912-35 (A8H0529-13)												
EPA 8000C												
% Solids	**83.5**	NR	1.00	% by Weight	1	NR	84.0	NR	NR	1	10%	
Duplicate (8080919-DUP5)		Prepared: 08/30/18 13:30		Analyzed: 08/31/18 20:30								
QC Source Sample: MW32-28 (A8H0529-17)												
EPA 8000C												
% Solids	**79.5**	NR	1.00	% by Weight	1	NR	80.0	NR	NR	3	10%	

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

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Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Washington Department of Ecology Methods

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BGH0567 - EPA 5035 (Methanol Extraction)							**Solid**					
Blank (BGH0567-BLK1)		Prepared: 08/10/18 18:00		Analyzed: 08/10/18 18:43								
WA VPH												
C5-C6 Aliphatics	ND	3.00	10.0	mg/kg Wet	1							
C6-C8 Aliphatics	ND	3.00	10.0	mg/kg Wet	1							
C8-C10 Aliphatics	ND	3.00	10.0	mg/kg Wet	1							
C10-C12 Aliphatics	ND	3.00	10.0	mg/kg Wet	1							
C12-C16 Aliphatics	ND	3.00	10.0	mg/kg Wet	1							
C8-C10 Aromatics	ND	3.00	10.0	mg/kg Wet	1							
C10-C12 Aromatics	ND	3.00	10.0	mg/kg Wet	1							
C12-C16 Aromatics	ND	3.00	10.0	mg/kg Wet	1							
C16-C21 Aromatics	ND	3.00	10.0	mg/kg Wet	1							
Surr: PID: 2,5-Dibromotoluene		*Recovery: 83.0 %*		*Limits: 60-140 %*		*Dilution: 1x*						
FID: 2,5-Dibromotoluene		*90.7 %*		*60-140 %*		*"*						
LCS (BGH0567-BS1)		Prepared: 08/10/18 11:23		Analyzed: 08/10/18 11:23								
WA VPH												
Methyl tert-Butyl Ether	47.6	25.0	50.0	mg/kg Wet	1	50.0		95.2	70-130%			
Benzene	49.0	25.0	50.0	mg/kg Wet	1	50.0		98.0	70-130%			
Toluene	48.0	25.0	50.0	mg/kg Wet	1	50.0		96.0	70-130%			
Ethylbenzene	48.6	25.0	50.0	mg/kg Wet	1	50.0		97.2	70-130%			
m,p-Xylene	102	50.0	100	mg/kg Wet	1	100		102	70-130%			
o-Xylene	48.8	25.0	50.0	mg/kg Wet	1	50.0		97.6	70-130%			
1,3,5-Trimethylbenzene	48.0	25.0	50.0	mg/kg Wet	1	50.0		96.0	70-130%			
Naphthalene	48.1	25.0	50.0	mg/kg Wet	1	50.0		96.2	70-130%			
1-Methylnaphthalene	103	25.0	50.0	mg/kg Wet	1	100		103	70-130%			
n-Pentane	47.3	25.0	50.0	mg/kg Wet	1	50.0		94.6	70-130%			
n-Hexane	47.4	25.0	50.0	mg/kg Wet	1	50.0		94.8	70-130%			
n-Octane	48.4	25.0	50.0	mg/kg Wet	1	50.0		96.8	70-130%			
n-Decane	48.2	25.0	50.0	mg/kg Wet	1	50.0		96.4	70-130%			
n-Dodecane	49.1	25.0	50.0	mg/kg Wet	1	50.0		98.2	70-130%			
Surr: PID: 2,5-Dibromotoluene		*Recovery: 88.3 %*		*Limits: 60-140 %*		*Dilution: 1x*						
FID: 2,5-Dibromotoluene		*96.7 %*		*60-140 %*		*"*						
LCS Dup (BGH0567-BSD1)		Prepared: 08/10/18 11:03		Analyzed: 08/10/18 11:03								
WA VPH												

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Washington Department of Ecology Methods

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BGH0567 - EPA 5035 (Methanol Extraction)								**Solid**				
LCS Dup (BGH0567-BSD1)		Prepared: 10/08/18 11:03		Analyzed: 10/08/18 11:03								
Methyl tert-butyl Ether	3.04	0.0500	0.100	mg/kg wet	10	4.00	ND	76.0	60-140	1.64	30	
Benzene	3.96	0.0500	0.100	mg/kg wet	10	4.00	ND	99.0	60-140	1.01	30	
Toluene	3.91	0.0500	0.100	mg/kg wet	10	4.00	ND	97.8	60-140	1.33	30	
Ethylbenzene	3.90	0.0500	0.100	mg/kg wet	10	4.00	ND	97.5	60-140	1.02	30	
m,p-Xylene	7.71	0.0500	0.100	mg/kg wet	10	8.00	ND	96.4	60-140	1.28	30	
o-Xylene	3.84	0.0500	0.100	mg/kg wet	10	4.00	ND	96.0	60-140	1.04	30	
1,3,5-Trimethylbenzene	3.90	0.0500	0.100	mg/kg wet	10	4.00	ND	97.5	60-140	1.33	30	
Naphthalene	3.72	0.0500	0.100	mg/kg wet	10	4.00	ND	93.0	60-140	0.911	30	
1-Methylnaphthalene	3.84	0.0500	0.100	mg/kg wet	10	4.00	ND	96.0	60-140	0.808	30	
n-Pentane	4.26	0.0500	0.100	mg/kg wet	10	4.00	ND	107	60-140	8.40	30	
n-Hexane	3.90	0.0500	0.100	mg/kg wet	10	4.00	ND	97.5	60-140	1.02	30	
n-Octane	3.96	0.0500	0.100	mg/kg wet	10	4.00	ND	99.0	60-140	1.01	30	
n-Decane	3.81	0.0500	0.100	mg/kg wet	10	4.00	ND	95.2	60-140	1.04	30	
n-Dodecane	4.23	0.0500	0.100	mg/kg wet	10	4.00	ND	106	60-140	1.40	30	
Surr: PID: 2,5-Dibromotoluene		*Recovery: 82.7 %*		*Limits: 60-140 %*				*Dilution: 180x*				
FID: 2,5-Dibromotoluene		*92.0 %*		*60-140 %*				*"*				

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Washington Department of Ecology Methods

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BGH0638 - EPA 3546 (Microwave)							**Solid**					
Blank (BGH0638-BLK1)		Prepared: 09/18/18 10:38		Analyzed: 09/19/18 01:34								
WA EPH												
C08-C10 Aliphatics	ND	0.308	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	
C10-C12 Aliphatics	**0.130**	0.308	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	I
C12-C16 Aliphatics	ND	0.308	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	
C16-C21 Aliphatics	ND	0.308	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	
C21-C34 Aliphatics	**0.600**	0.308	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	I
Surr: 1-Chloro-octadecane		*Recovery: 55.8 %*		*Limits: 30-160 %*			*Dilution: 1x*					
Blank (BGH0638-BLK2)		Prepared: 09/18/18 10:38		Analyzed: 09/19/18 08:00								
WA EPH												
C08-C10 Aromatics	ND	0.340	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	
C10-C12 Aromatics	ND	0.340	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	
C12-C16 Aromatics	**0.330**	0.340	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	I
C16-C21 Aromatics	**0.920**	0.340	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	I
C21-C34 Aromatics	**1.50**	0.340	0.400	mg/kg dry	1	[NR]	[NR]	[NR]	[NR]	[NR]	[NR]	I
Surr: o-Terphenyl		*Recovery: 76.5 %*		*Limits: 30-160 %*			*Dilution: 1x*					
LCS (BGH0638-BS1)		Prepared: 09/18/18 10:38		Analyzed: 09/19/18 01:30								
WA EPH												
C08-C10 Aliphatics	0.453	0.308	0.400	mg/kg dry	1	0.667	[NR]	68	40-140%	[NR]	[NR]	
C10-C12 Aliphatics	0.502	0.308	0.400	mg/kg dry	1	0.667	[NR]	75	40-140%	[NR]	[NR]	
C12-C16 Aliphatics	0.503	0.308	0.400	mg/kg dry	1	0.667	[NR]	75	40-140%	[NR]	[NR]	
C16-C21 Aliphatics	0.380	0.308	0.400	mg/kg dry	1	0.667	[NR]	57	40-140%	[NR]	[NR]	
C21-C34 Aliphatics	0.255	0.308	0.400	mg/kg dry	1	0.667	[NR]	38	40-140%	[NR]	[NR]	
Surr: 1-Chloro-octadecane		*Recovery: 66.1 %*		*Limits: 30-160 %*			*Dilution: 1x*					
LCS (BGH0638-BS2)		Prepared: 09/18/18 10:38		Analyzed: 09/19/18 10:16								
WA EPH												
C10-C12 Aromatics	0.420	0.340	0.400	mg/kg dry	1	0.667	[NR]	63	40-140%	[NR]	[NR]	
C12-C16 Aromatics	0.438	0.340	0.400	mg/kg dry	1	0.667	[NR]	66	40-140%	[NR]	[NR]	
C16-C21 Aromatics	0.611	0.340	0.400	mg/kg dry	1	0.667	[NR]	92	40-140%	[NR]	[NR]	
C21-C34 Aromatics	0.504	0.340	0.400	mg/kg dry	1	0.667	[NR]	76	40-140%	[NR]	[NR]	

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Lisa Domenighini, Client Services Manager

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HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Washington Department of Ecology Methods

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BGH0638 - EPA 3546 (Microwave)												**Solid**
LCS (BGH0638-BS2)		Prepared: 08/10/10 10:38		Analyzed: 08/11/10 20:16								
Surr: o-Terphenyl		*Recovery: 78.0 %*		*Limits: 30-160 %*		*Dilution: 1x*						

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Lisa A Domenighini

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sample	Prepared	Sample Initial/Final	Default Initial/Final	2 L Prep Factor
Batch: 8081025							
A0Tz-8(Hz-	Soil	NWTPHDx	z0/13/10 z0:Oz	z0/88/10 1OQ(	1z8Cg/-mL	1zg/-mL	z(G
A0Tz-8(Hz4	Soil	NWTPHDx	z0/13/10 z0:-z	z0/88/10 1OQ(	1z81g/-mL	1zg/-mL	z(4
A0Tz-8(HzG	Soil	NWTPHDx	z0/13/10 z(:Oz	z0/88/10 1OQ(	1zd0g/-mL	1zg/-mL	z(8
A0Tz-8(Hz0	Soil	NWTPHDx	z0/13/10 z(:3z	z0/88/10 1OQ(	1z8(g/-mL	1zg/-mL	z(G
A0Tz-8(Hz(	Soil	NWTPHDx	z0/13/10 1z:zz	z0/88/10 1OQ(	1z8Qg/-mL	1zg/-mL	z(0
A0Tz-8(Hz	Soil	NWTPHDx	z0/1-/10 zG3-	z0/88/10 1OQ(	1z84g/-mL	1zg/-mL	z(0
A0Tz-8(H1	Soil	NWTPHDx	z0/1-/10 z0:Oz	z0/88/10 1OQ(	1zd8g/-mL	1zg/-mL	z(8
A0Tz-8(H8	Soil	NWTPHDx	z0/1-/10 z(:zz	z0/88/10 1OQ(	1zd0g/-mL	1zg/-mL	z(-
A0Tz-8(HO	Soil	NWTPHDx	z0/14/10 zG3z	z0/88/10 1OQ(	1z8(g/-mL	1zg/-mL	z(-
A0Tz-8(H3	Soil	NWTPHDx	z0/14/10 1O3-	z0/88/10 1OQ(	1zdz(g/-mL	1zg/-mL	z((
A0Tz-8(H-	Soil	NWTPHDx	z0/1G/10 zG8z	z0/88/10 1OQ(	1z8Cg/-mL	1zg/-mL	z(4
A0Tz-8(H42Ql	Soil	NWTPHDx	z0/1G/10 zG3z	z0/88/10 1OQ(	1z81g/-mL	1zg/-mL	z(0
A0Tz-8(HG	Soil	NWTPHDx	z0/1G/10 z(:zz	z0/88/10 1OQ(	1z84g/-mL	1zg/-mL	z(0
Batch: 8081060							
A0Tz-8(Hz1	Soil	NWTPHDx	z0/1O/10 z0:z-	z0/8O/10 1z:1z	1z80g/-mL	1zg/-mL	z(G
A0Tz-8(Hz8	Soil	NWTPHDx	z0/1O/10 z0:O-	z0/8O/10 1z:1z	1zdOg/-mL	1zg/-mL	z(G
A0Tz-8(HzO	Soil	NWTPHDx	z0/1O/10 z(:8z	z0/8O/10 1z:1z	1zd(3g/-mL	1zg/-mL	z(1
A0Tz-8(Hz3	Soil	NWTPHDx	z0/1O/10 z(:3z	z0/8O/10 1z:1z	1zd-Cg/-mL	1zg/-mL	z(-

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

Prep: EPA 5035A

Lab Number	Matrix	Method	Sample	Prepared	Sample Initial/Final	Default Initial/Final	2 L Prep Factor
Batch: 8080916							
A0Tz-8(Hz1	Soil	NWTPHgx 9MS7	z0/1O/10 z0:z-	z0/1O/10 z0:z-	-dz8g/-mL	-g/-mL	1dzz
A0Tz-8(Hz8	Soil	NWTPHgx 9MS7	z0/1O/10 z0:O-	z0/1O/10 z0:O-	3dO4g/-mL	-g/-mL	1dl-
A0Tz-8(HzO	Soil	NWTPHgx 9MS7	z0/1O/10 z(:8z	z0/1O/10 z(:8z	4dlQg/-mL	-g/-mL	zd08
A0Tz-8(Hz-	Soil	NWTPHgx 9MS7	z0/13/10 z0:Oz	z0/13/10 z0:Oz	-dl8g/-mL	-g/-mL	zd0(
A0Tz-8(Hz4	Soil	NWTPHgx 9MS7	z0/13/10 z0:-z	z0/13/10 z0:-z	4d8Qg/-mL	-g/-mL	zd0z
Batch: 8080917							
A0Tz-8(Hz3	Soil	NWTPHgx 9MS7	z0/1O/10 z(:3z	z0/1O/10 z(:3z	4dB(g/-mL	-g/-mL	zdCG
A0Tz-8(Hz0	Soil	NWTPHgx 9MS7	z0/13/10 z(:3z	z0/13/10 z(:3z	4d-8g/-mL	-g/-mL	zdCG
A0Tz-8(Hz(	Soil	NWTPHgx 9MS7	z0/13/10 1z:zz	z0/13/10 1z:zz	4d0(g/-mL	-g/-mL	zdCO
A0Tz-8(Hz	Soil	NWTPHgx 9MS7	z0/1-/10 zG3-	z0/1-/10 zG3-	4dlQg/-mL	-g/-mL	zd01
A0Tz-8(H1	Soil	NWTPHgx 9MS7	z0/1-/10 z0:Oz	z0/1-/10 z0:Oz	Gdl-g/-mL	-g/-mL	zdCz

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

SAMPLE PREPARATION INFORMATION

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

Prep: EPA 5035A

Lab Number	Matrix	Method	Sample	Prepared	Sample Initial/Final	Default Initial/Final	2 L Prep Factor
A0T2-8(H8	Soil	NW WPTH) x 9MS7	20/1-/10 2(:22	20/1-/10 2(:22	G.48 g/-mL	-g/-mL	2.44
A0T2-8(HO	Soil	NW WPTH) x 9MS7	20/14/10 2G32	20/14/10 2G32	-.B4 g/-mL	-g/-mL	2.(8
Batch: 8080959							
A0T2-8(H2G2 Q1	Soil	NW WPTH) x 9MS7	20/13/10 2(:O2	20/13/10 2(:O2	4.2- g/-mL	-g/-mL	2.0O
A0T2-8(H3	Soil	NW WPTH) x 9MS7	20/14/10 1Q3-	20/14/10 1Q3-	4.(g/-mL	-g/-mL	2.CO
A0T2-8(H-	Soil	NW WPTH) x 9MS7	20/1G/10 2G8Z	20/1G/10 2G8Z	4.8Cg/-mL	-g/-mL	2.02
Batch: 8081010							
A0T2-8(H42 Q1	Soil	NW WPTH) x 9MS7	20/1G/10 2G32	20/1G/10 2G32	4.C8g/-mL	-g/-mL	2.CB
A0T2-8(HG2 Q1	Soil	NW WPTH) x 9MS7	20/1G/10 2(:22	20/1G/10 2(:22	4.(g/-mL	-g/-mL	2.CO

BTEX Compounds by EPA 8260C

Prep: EPA 5035A

Lab Number	Matrix	Method	Sample	Prepared	Sample Initial/Final	Default Initial/Final	2 L Prep Factor
Batch: 8080916							
A0T2-8(H21	Soil	-2O-A/084zC	20/1O/10 20:2-	20/1O/10 20:2-	-.28 g/-mL	-g/-mL	1.2z
A0T2-8(H28	Soil	-2O-A/084zC	20/1O/10 20:O-	20/1O/10 20:O-	3.O4 g/-mL	-g/-mL	1.1-
A0T2-8(H2O	Soil	-2O-A/084zC	20/1O/10 2(:8z	20/1O/10 2(:8z	4.1Cg/-mL	-g/-mL	2.08
A0T2-8(H2-	Soil	-2O-A/084zC	20/13/10 20:O2	20/13/10 20:O2	-.48 g/-mL	-g/-mL	2.0(
A0T2-8(H24	Soil	-2O-A/084zC	20/13/10 20:-2	20/13/10 20:-2	4.8Cg/-mL	-g/-mL	2.02
Batch: 8080917							
A0T2-8(H23	Soil	-2O-A/084zC	20/1O/10 2(:32	20/1O/10 2(:32	4.B(g/-mL	-g/-mL	2.CG
A0T2-8(H2G	Soil	-2O-A/084zC	20/13/10 2(:O2	20/13/10 2(:O2	4.2- g/-mL	-g/-mL	2.0O
A0T2-8(H20	Soil	-2O-A/084zC	20/13/10 2(:32	20/13/10 2(:32	4.- 8g/-mL	-g/-mL	2.CG
A0T2-8(H2(	Soil	-2O-A/084zC	20/13/10 12:22	20/13/10 12:22	4.0(g/-mL	-g/-mL	2.CO
A0T2-8(H2	Soil	-2O-A/084zC	20/1-/10 2G3-	20/1-/10 2G3-	4.1Cg/-mL	-g/-mL	2.01
A0T2-8(H1	Soil	-2O-A/084zC	20/1-/10 20:O2	20/1-/10 20:O2	G.1- g/-mL	-g/-mL	2.C2
A0T2-8(H8	Soil	-2O-A/084zC	20/1-/10 2(:22	20/1-/10 2(:22	G.48 g/-mL	-g/-mL	2.44
A0T2-8(HO	Soil	-2O-A/084zC	20/14/10 2G32	20/14/10 2G32	-.B4 g/-mL	-g/-mL	2.(8
Batch: 8080959							
A0T2-8(H3	Soil	-2O-A/084zC	20/14/10 1Q3-	20/14/10 1Q3-	4.(g/-mL	-g/-mL	2.CO
A0T2-8(H-	Soil	-2O-A/084zC	20/1G/10 2G8Z	20/1G/10 2G8Z	4.8Cg/-mL	-g/-mL	2.02
A0T2-8(H4	Soil	-2O-A/084zC	20/1G/10 2G32	20/1G/10 2G32	4.C8g/-mL	-g/-mL	2.CB
Batch: 8081010							
A0T2-8(HG2 Q1	Soil	-2O-A/084zC	20/1G/10 2(:22	20/1G/10 2(:22	4.(g/-mL	-g/-mL	2.CO

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314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

SAMPLE PREPARATION INFORMATION

BTEX Compounds by EPA 8260C

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Methoy	Sampley	Preparey	Sample 'nitial/qinal	Default 'nitial/qinal	2 L Prep qactor
Batch: 8080919							
A0Tz-8(Hz1	Soil	QPA 0zzzC	z0/1O/10 z0:z-	z0/8z/10 1z:zG			NA
A0Tz-8(Hz8	Soil	QPA 0zzzC	z0/1O/10 z0:O-	z0/8z/10 1z:zG			NA
A0Tz-8(HzO	Soil	QPA 0zzzC	z0/1O/10 z(:8z	z0/8z/10 1z:8z			NA
A0Tz-8(Hz3	Soil	QPA 0zzzC	z0/1O/10 z(:3z	z0/8z/10 1z:8z			NA
A0Tz-8(Hz-	Soil	QPA 0zzzC	z0/13/10 z0:Oz	z0/8z/10 1z:8z			NA
A0Tz-8(Hz4	Soil	QPA 0zzzC	z0/13/10 z0:- z	z0/8z/10 1z:8z			NA
A0Tz-8(HzG	Soil	QPA 0zzzC	z0/13/10 z(:Oz	z0/8z/10 1z:8z			NA
A0Tz-8(Hz0	Soil	QPA 0zzzC	z0/13/10 z(:3z	z0/8z/10 1z:8z			NA
A0Tz-8(Hz(	Soil	QPA 0zzzC	z0/13/10 1z:zz	z0/8z/10 1z:8z			NA
A0Tz-8(Hz	Soil	QPA 0zzzC	z0/1-/10 zG3-	z0/8z/10 1z:8z			NA
A0Tz-8(H1	Soil	QPA 0zzzC	z0/1-/10 z0:Oz	z0/8z/10 1z:8z			NA
A0Tz-8(H8	Soil	QPA 0zzzC	z0/1-/10 z(:zz	z0/8z/10 1z:8z			NA
A0Tz-8(HO	Soil	QPA 0zzzC	z0/14/10 zG3z	z0/8z/10 1z:8z			NA
A0Tz-8(H3	Soil	QPA 0zzzC	z0/14/10 1O3-	z0/8z/10 1z:8z			NA
A0Tz-8(H-	Soil	QPA 0zzzC	z0/1G/10 zG8z	z0/8z/10 1z:8z			NA
A0Tz-8(H4	Soil	QPA 0zzzC	z0/1G/10 zG3z	z0/8z/10 1z:8z			NA
A0Tz-8(HG	Soil	QPA 0zzzC	z0/1G/10 z(:zz	z0/8z/10 1z:8z			NA

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503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Washington Department of Ecology Methods

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Methoy	Sampley	Preparey	Sample 'nitial/qinal	Default 'nitial/qinal	2 L Prep qactor
Batch: BGH0638							
A0Tz-8(H02Ql	Soil	k A QPT	z0/1G/10 z(:3z	z0/8G/10 1O:38	1zdz(g/1mL	1zg/1mL	zd((

Prep: EPA 5035 (Methanol Extraction)

Lab Number	Matrix	Methoy	Sampley	Preparey	Sample 'nitial/qinal	Default 'nitial/qinal	2 L Prep qactor
Batch: BGH0567							
A0Tz-8(H0	Soil	k A wPT	z0/1G/10 z(:3z	z0/88/10 18:zz	-d(4g/-mL	-g/-mL	zd03

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

F-03	Whe result for this hRyrocarbon range is elevatey yue to the presence of inyiviyual analRte pea6s in the Vuantitation range that are not representative of the fuel pattern reporteyd
F-13	Whe chromatographic pattern yoes not resemble the fuel stanyary usey for Vuantitation
F-15	2esults for yiesel are estimatey yue to overlap from the reportey oil resultd
F-16	2esults for oil are estimatey yue to overlap from the reportey yiesel resultd
M-02	Due to matrix interference, this analRte cannot be accuratelR Vuantifieyd Whe reportey result is estimateyd
Q-04	Spi6e recoverR any/or 2PD is outsiye control limits yue to a nonHhomogeneous sample matrixd
Q-05	AnalRses are not controlley on 2PD values from sample any yuplicate concentrations that are beloF - times the reporting leveld
Q-39	2esults for sample yuplicate are significantlR higher than the sample resultsd See yuplicate results in XC section of the reportd
S-04	Surrogate recoverR is outsiye of establishey control limits yue to a sample matrix effectd
S-05	Surrogate recoverR is estimatey yue to sample yilution reVuirey for high analRte concentration any/or matrix interferenced
S-08	WPTHx Surrogate recoverR cannot be accuratelR Vuantifiey yue to interference from coeluting organic compounys present in the sample extractd See 084zB results for accurate Surrogate recoverRd
T-02	Whis Batch XC sample Fas analRLey outsiye of the methoy specifiey 18 hour tune Finyofd 2esults are estimateyd

Analytical Resources, Inc.

D	Whe reportey value is from a yilution
J	Qstimatey concentration value yetectey beloF the reporting limitd
U	Whis analRte is not yetectey above the applicable reporting or yetection limitd

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DQW AnalRte DQWQCWQD at or above the yetection or reporting limitd
ND AnalRte N5 WDQWQCWQD at or above the yetection or reporting limitd
N2 2 esult Not 2 eportey
2 PD 2 elative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection 9L5 Ds7 are normallR set at a level of one half the valiyatey Limit of Xuantitation 9L5 X7d
' f no value is listey 9'HHHH7, then the yata has not been evaluatey beloF the 2 eporting Limitd

Reporting Limits: Limit of Quantitation (LOQ)

waliyatey Limits of Xuantitation 9L5 Xs7 are reportey as the 2 eporting Limits for all analRses F here the L5 X, M2 L, PXL or C2 L are reVuesteydWhe L5 X represents a level at or above the loF point of the calibration curve, that has been valiyatey accorying to Apex Laboratories"comprehensive L5 X policies any proceyuresd

Reporting Conventions:

Basis: 2 esults for soil samples are generallR reportey on a 1zz% yrR F eight basisd
Whe 2 esult Basis is listey folloF ing the units as * yrR*, * F et*, or * * 9blan67 yesignationd

* yrR* Sample results any 2 eporting Limits are reportey on a yrR F eight basisd9ided*ug/6g yrR*7
See Percent Soliys section for yetails of yrR F eight analRsisd
* F et* Sample results any 2 eporting Limits for this analRsis are normallR yrR F eight correctey, but have not been moyifiey in this cased
* * 2 esults F ithout 'F et" or 'yrR" yesignation are not normallR yrR F eight correcteydWhese results are consiyerey "As 2 eceivey'd

QC Source:

' n cases F here there is insufficient sample proviyey for Sample Duplicates any/or Matrix Spi6es, a Lab Control Sample Duplicate 9LCS Dup7 maR be analRUey to yemonstrate accuracR any precision of the extraction batchd

NonHClient Batch XC Samples 9Duplicates any Matrix Spi6e/Duplicates7 are not incluyey in this reportdPlease reVuest a qull XC report if this yata is reVuireyd

Miscellaneous Notes:

* HH" XC results are not applicabledqor example, % 2 ecoveries for Blan6s any Duplicates, % 2 PD for Blan6s, Blan6 Spi6es any Matrix Spi6es, etcd

* ½½" . sey to inyicate a possible yiscrepancR F ith the Sample any Sample Duplicate results F hen the %2 PD is not availabled ' n this case, either the Sample or the Sample Duplicate has a reportable result for this analRte, F hile the other is Non Detect 9ND7d

Blanks:

Stanyary practice is to evaluate the results from Blan6 XC Samples yoF n to a level eVual to J the 2 eporting Limit 92 L7d
Hqor Blan6 hits falling betF een J the 2 L any the 2 L 9I flaggey hits7, the associatey sample any XC yata F ill receive a 'BH28' Vualifierd
Hqor Blan6 hits above the 2 L, the associatey sample any XC yata F ill receive a 'B' Vualifier, per Apex Laboratories"Blan6 PolicRd qor further yetails, please reVuest a copR of this yocumentd

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flaggey F ith a "B" or "BH8" Vualifier are potentiallR biasey high if the blan6 results are less than ten times the level founy in the blan6 for inorganic analRses, or less than five times the level founy in the blan6 for organic analRsesd

'B' any 'BH8' Vualifications are onlR appliey to sample results yetectey above the 2 eporting Leveld

Preparation Notes:

Mixey Matrix Samples:

k ater Samples:

k ater samples containing significant amounts of seyiment are yecantey or separatey prior to extraction, any onlR the F ater portion analRUey, unless otherF ise yirectey bR the clientd

Soil any Seyiment Samples:

Soil any Seyiment samples containing significant amounts of F ater are yecantey prior to extraction, any onlR the soliy portion analRUey, unless otherF ise yirectey bR the clientd

Sampling and Preservation Notes:

Certain regulatorR programs, such as National Pollutant Discharge Qimination SRstem 9NPDQS7, reVuire that activities such as sample filtration 9for yissolvey metals, orthophosphate, hexavalent chromium, etcd7 any testing of short holy analRtes 9pT , Dissolvey 5 xRgen, etcd7 be performey in the fiely 9onHsite7 F ithin a short time F inyoF d' n ayyition, sample matrix spi6es are reVuirey for some analRses, any sufficient volume must be proviyey, any billable site specific XC reVuestey, if this is reVuireydAll regulatorR permits shouly be revieF ey to ensure that these reVuirements are being metd

Data users shouly be aF are of F hich regulations pertain to the samples theR submit for testingd' f relatey sample collection activities are not approvey for a particular regulatorR program, results shouly be consiyerey estimatesdApex Laboratories F ill VualifR these analRtes accorying to the most stringent reVuirements, hoF ever results for samples that are for nonHegulatorR purposes maR be acceptabled

Samples that have been filterey any preservey at Apex Laboratories per client reVuest are listey in the preparation section of the report F ith the yate any time of filtration listeyd

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Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methoys any analRtes reportey from F or6 performey at Apex Laboratories are incluyey on Apex Laboratories"5 2 QLAP Scope of Certification, F ith the exception of anR analRte9s7 listey beloF :

Apex Laboratories

Matrix	AnalRsis	WN'_'D	AnalRte	WN'_'D	Accreyitation
All reportey analRtes are incluyey in Apex Laboratories"current 5 2 QLAP scoped					

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreyitation F ith nonHWN' states 9k ashington D5 Q7, as F ell as other state specific accreyitations not listey hered

Subcontract Laboratory Accreditations

Subcontractey yata falls outsiye of Apex Laboratories"Scope of Accreyitationd
Please see the Subcontract LaboratorR report for full yetails, or contact Rour Project Manager for more informationd

Field Testing Parameters

2 esults for qiely Westey yata are provyey bR the client or sampler, any fall outsiye of Apex Laboratories"Scope of Accreyitationd

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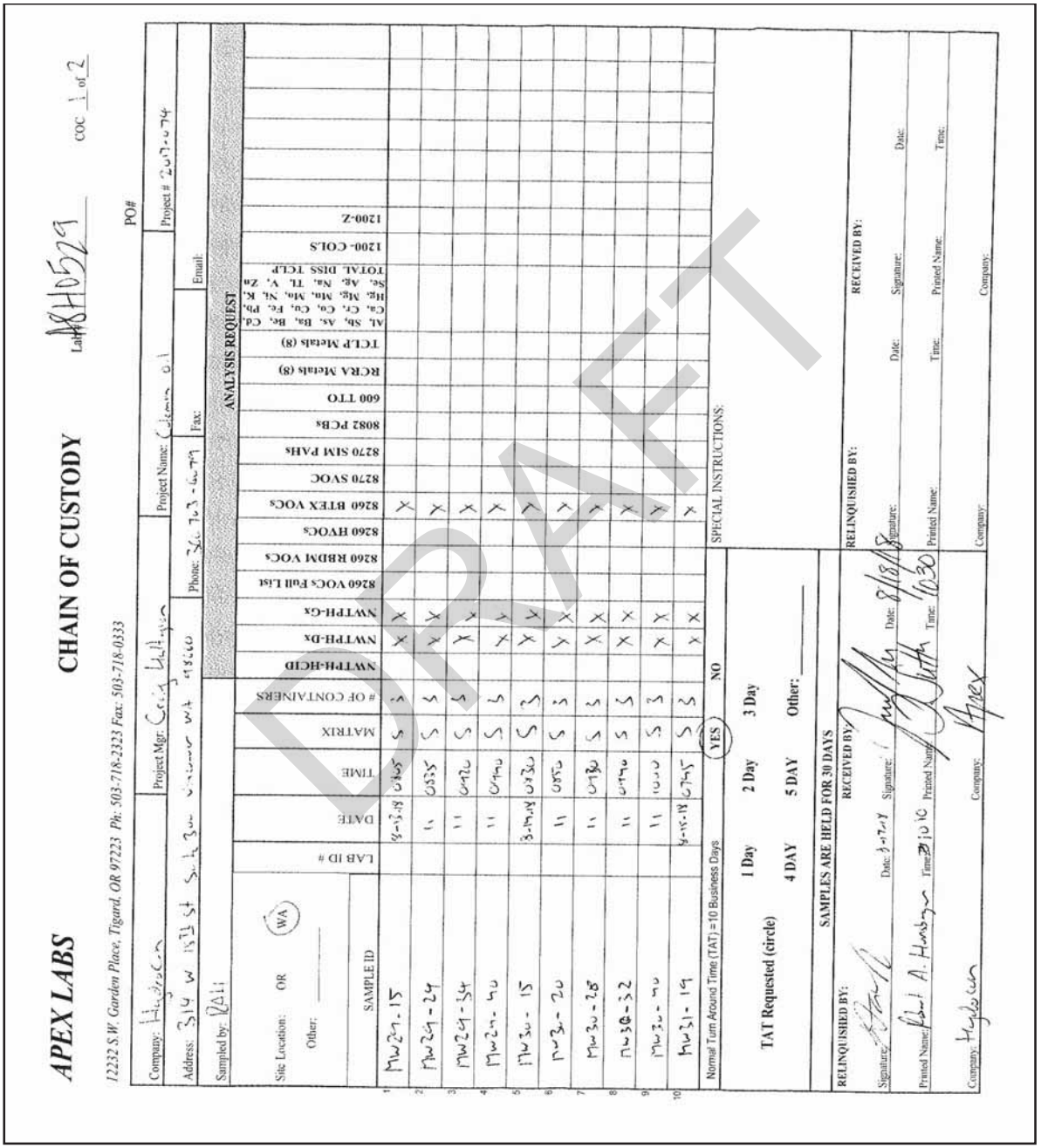
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**



APEX LABS

CHAIN OF CUSTODY

Lab# A8H0529

COC 1 of 2

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

PO#

Company: HydroCon | Project Mgr: Craig Hultgren | Project Name: Coleman 0.1 | Project # 2017-074

Address: 314 W 15th St Suite 300 Vancouver WA 98660 | Phone: 360-693-6519 | Fax: | Email:

Sampled by: DAH

Site Location: OR WA Other: _____

ANALYSIS REQUEST

	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, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z
1	MW29-15		8-30-17	0845	S	3		X	X				X								
2	MW29-24		"	0935	S	3		X	X				X								
3	MW29-34		"	0940	S	3		X	X				X								
4	MW29-45		"	0945	S	3		X	X				X								
5	MW30-15		8-30-17	0930	S	3		X	X				X								
6	MW30-20		"	0935	S	3		X	X				X								
7	MW30-25		"	0940	S	3		X	X				X								
8	MW30-32		"	0945	S	3		X	X				X								
9	MW30-45		"	1000	S	3		X	X				X								
10	MW31-19		8-30-17	0945	S	3		X	X				X								

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

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

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: RECEIVED BY: Date: 8-30-17 Time: 1630

RELINQUISHED BY: RECEIVED BY: Date: Time:

RELINQUISHED BY: RECEIVED BY: Date: Time:

Signature: Printed Name: Company: Apex

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

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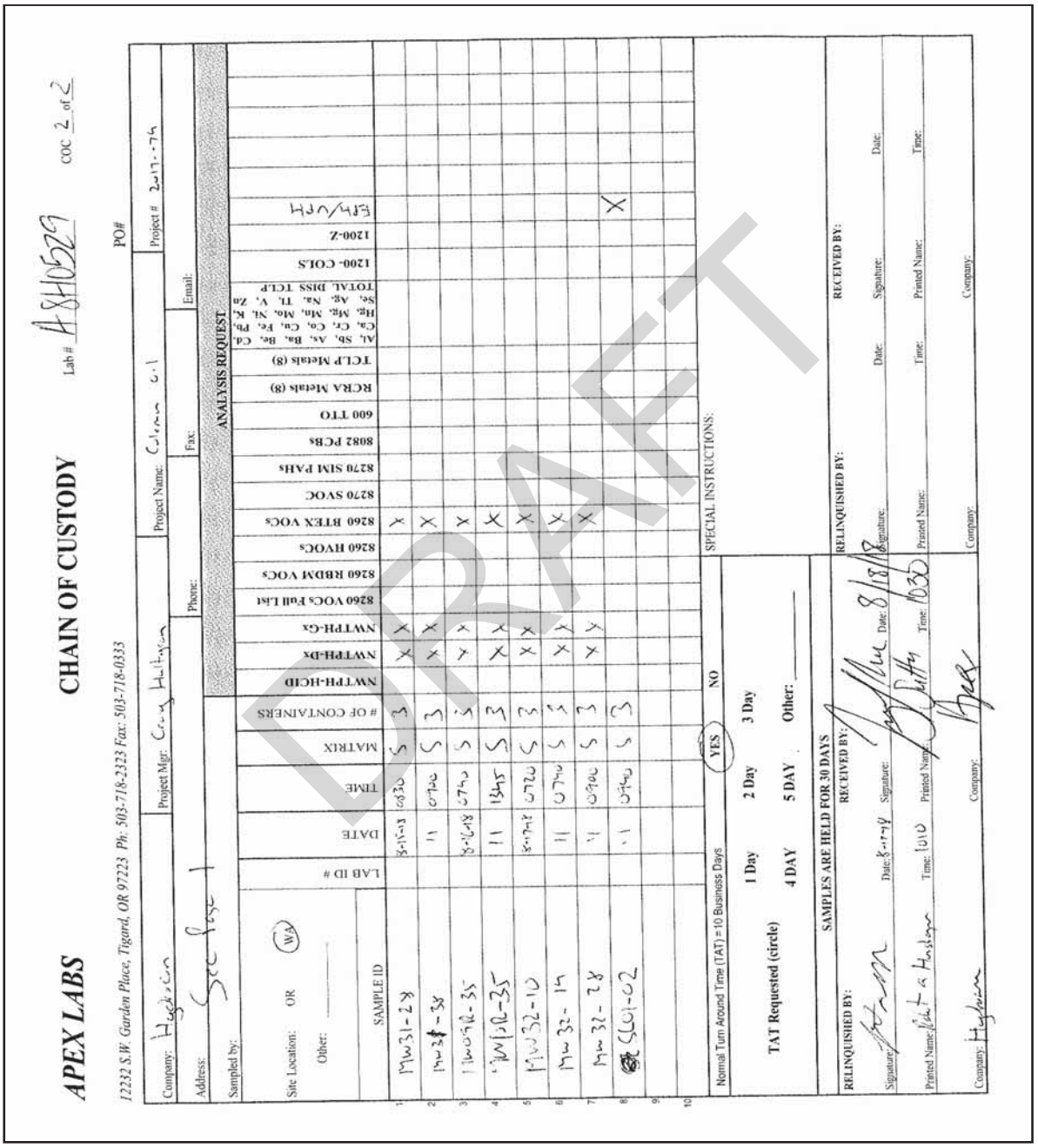
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**



APEX LABS

CHAIN OF CUSTODY

Lab # A8H0529 COC 2 of 2

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

PO#

Company: Hydrocon | Project Mgr: Craig Hultgren | Project Name: Coleman 0.1 | Project # 2017-074

Address: | Phone: | Fax: | Email:

Sampled by: See Page 1

Site Location: OR (WA) Other: _____

ANALYSIS REQUEST

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, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	EPH/VPH
1 MW31-28		8-10-18	0830	S	3		X	X				X									
2 MW34-38		11	0930	S	3		X	X				X									
3 MW0918-35		8-10-18	0745	S	3		X	X				X									
4 MW118-35		11	1345	S	3		X	X				X									
5 MW32-15		8-10-18	0720	S	3		X	X				X									X
6 MW32-19		11	0740	S	3		X	X				X									
7 MW32-28		11	0900	S	3		X	X				X									
8 SG01-02		11	0945	S	3																
9																					
10																					

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

SPECIAL INSTRUCTIONS:

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: 8-10-18 | Signature:

Printed Name: Lisa A Hultgren | Time: 1610 | Printed Name:

Company: Hydrocon | Company:

RELINQUISHED BY: | RECEIVED BY:

Signature: | Date: 8/18/18 | Signature: | Date:

Printed Name: | Time: 1035 | Printed Name: | Time:

Company: | Company:

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

HydroCon LLC	Project: **Coleman Wenatchee**	
314 W 15th Street Suite 300	Project Number: **2017-074**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Craig Hultgren**	**A8H0529 - 09 05 18 1443**

APEX LABS COOLER RECEIPT FORM

Client: Hydrocon Element WO#: A8 H0529

Project/Project #: Coleman oil

Delivery info:

Date/Time Received: 8/18/18 @ 1030 By: JS

Delivered by: Apex___ Client___ ESS___ FedEx___ UPS X Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: JS : 8/18/18 @ 1035

Chain of Custody Included? Yes X No___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No___

Signed/Dated by Apex? Yes X No___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	5.4						
Received on Ice? (Y/N)	yes						
Temp. Blanks? (Y/N)	yes						
Ice Type: (Gel/Real/Other)	real						
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: JS : 8/18/18 @ 1100

All Samples Intact? Yes X No___ Comments:

Bottle Labels/COCs agree? Yes___ No X Comments: 1/2 meoh VOAs Treads 100 for MW042 Sample MW30-40. 1/3 cont. Reads ~~MW042~~ MW042 for sample ~~MW042~~ MW042 JS

Containers/Volumes Received Appropriate for Analysis? Yes X No___ Comments:

1/2 meoh VOAs for sample MW29-15 meoh leaked no meoh in cont.

Do VOA Vials have Visible Headspace? Yes___ No___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___ No___ NA X

Comments:

Additional Information:

Labeled by: JS Witness: 40mL meoh JS Cooler Inspected by: JS See Project Contact Form: Y

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Appendix D
Data Quality Review Reports

TO:	Craig Hultgren, HydroCon
FROM:	Manon Tanner-Dave
DATE:	November 19, 2018
SUBJECT:	Laboratory Validation Report

HydroCon TOC Site No.	Coleman Wenatchee - 2017-074		
Sampling Event Type:	Soil Sampling	**Number of Samples:**	17
Laboratory Work Order:	A8H0328	**Final Report Date & Time:**	August 21, 2018

Analysis & Method

- ☒ Gasoline Range Hydrocarbon (NWTPH-Gx)
- ☒ Diesel Range Hydrocarbon without Silica Gel (NWTPH-Dx) ☐
- ☐ Diesel Range Organics with Silica Gel (NWTPH-DxSG)
- ☐ Volatile Organic Compounds (EPA 8260C)
- ☒ BETX (8021B)
- ☐ Dissolved Lead (200.8)
- ☐ Sulfate (300.0)
- ☒ Other – Percent Dry Weight

Data Package Completeness:

Data package was complete.

EDD to Hardcopy Verification:

An EDD was not provided.

Technical Data Validation:

- ☒ Holding Times & Sample Receipt
- ☒ Surrogate Compounds
- ☒ Associated Matrix Spike/Matrix Spike Duplicate (MS/MSD)
- ☒ Associated Laboratory Duplicate
- ☒ Laboratory Control Sample/ Laboratory Control Sample Duplicates (LCS/LCSD)
- ☒ Method Blank
- ☐ Field Duplicates
- ☒ Target Analyte List
- ☒ Reporting Limits (MDL and MRL)
- ☒ Reported Results

Holding Times & Sample Receipt:

All holding times and sample receipt were acceptable, with the exceptions noted below:

Discrepancies were noted in the cooler receipt form that the time and date information on VOA vials received for MW28-35 and MW26-33 compared to the chain of custody form. Samples were received at 14.4°C; all results were qualified as estimated (J/UJ-HT) for the temperature exceedance.

Surrogate Compounds:

All surrogate percent recoveries (%R) were within laboratory limits.

Associated Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Matrix spikes were analyzed at the appropriate frequency and all %R were within the acceptance criteria.

Associated Laboratory Duplicate:

Laboratory duplicates were analyzed at the appropriate frequency and all relative percent difference (RPD) were within the acceptance criteria.

Laboratory Control Sample/Laboratory Control Sample Duplicates:

LCS were analyzed at the appropriate frequency and all %R were within the acceptance criteria.

Method Blank:

Method blanks were analyzed at the appropriate frequency and were non-detect (ND) for all target analytes.

Field Duplicate(s):

Not applicable.

Target Analyte List:

All requested analytes were present.

Reporting Limits (MDL and MRL):

Reporting limits were within the acceptance criteria, with the following exceptions noted below:

Select samples had elevated MRLs due to sample dilution as a result of high analyte concentrations or matrix interference issues. Results were reported from the dilution analyses, as applicable.

Reported Results:

All reported results are acceptable.

Laboratory qualifiers for NWTPH-Dx:

- (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.
    - J/UJ-Other qualify affected results.
- (F-13) The chromatographic pattern does not resemble the fuel standard used for quantitation.
    - J/UJ-Chrom qualify affected results.
- (F-15) Results for diesel are estimated due to overlap from the reported oil result.
    - J/UJ-Mi qualify affected results.
- (F-16) Results for oil are estimated due to overlap from the reported diesel result.
    - J/UJ-Mi qualify affected results.

Lab Validation Assessment

Analytical results are usable to meet the project objectives.

Data Quality Review Statement for Report

Aside from the data quality issues discussed above, the data quality review identified no concerns with respect to the quality or usability of the data presented herein.

The data meet the criteria outlined above, with the noted exceptions. No data were rejected and completeness was 100 percent. All results are usable for their intended purpose.

Appendix A. Data Validation Qualifiers and Definitions

The following lists the data validation qualifier codes and their definitions that were assigned to analytical results in this data validation review process.

Data Validation Qualifiers and Definitions:

☐ (R) The sample result is reject due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

☐ (DNR) Do not report. A more appropriate result is reported from another analysis or dilution.

Appendix B. Data Validation Qualified Summary Table

Laboratory 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.
- (F-13) The chromatographic pattern does not resemble the fuel standard used for quantitation.
- (F-15) Results for diesel are estimated due to overlap from the reported oil result.
- (F-16) Results for oil are estimated due to overlap from the reported diesel result.

Validation qualifiers:

- (J) The result is an estimated quantity.
- (UJ) Estimated and not detected. The analyte is considered not detected at the reported value, and the associated numerical value is an estimated value.

Reason codes:

- Chrom = Chromatographic pattern doesn't match the pattern of the calibration standard.
- HT = Holding time/sample preservation.
- Mi = Matrix interference.
- Other = Other, described in data validation report.

Appendix B. Validator Qualified Data Summary Table

Sample ID	Laboratory ID	Method	Parameter Name	Result	Result Units	Laboratory Qualifier	Validator Qualifier	Reason Code
MW24-15	A8H0328-01	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW24-15	A8H0328-01	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW24-22	A8H0328-02	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW24-22	A8H0328-02	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW24-28	A8H0328-03	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW24-28	A8H0328-03	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW24-35	A8H0328-04	NWTPH-Dx	Diesel	73.0	mg/kg	F-13	J	HT, Chrom
MW24-35	A8H0328-04	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW25-19	A8H0328-05	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW25-19	A8H0328-05	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW25-22	A8H0328-06	NWTPH-Dx	Diesel	92.7	mg/kg	F-13	J	HT, Chrom
MW25-22	A8H0328-06	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW25-35	A8H0328-07	NWTPH-Dx	Diesel	239	mg/kg	F-13, F-15	J	HT, Chrom, Mi
MW25-35	A8H0328-07	NWTPH-Dx	Oil	323	mg/kg	F-03, F-16	J	HT, Other, Mi
MW26-15	A8H0328-08	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW26-15	A8H0328-08	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW26-19	A8H0328-09	NWTPH-Dx	Diesel	34.1	mg/kg	F-13	J	HT, Chrom
MW26-19	A8H0328-09	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW26-29	A8H0328-10	NWTPH-Dx	Diesel	94.8	mg/kg	F-13	J	HT, Chrom

MW26-29	A8H0328-10	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW26-33	A8H0328-11	NWTPH-Dx	Diesel	228	mg/kg	F-13, F-15	J	HT, Chrom, Mi
MW26-33	A8H0328-11	NWTPH-Dx	Oil	288	mg/kg	F-03, F-16	J	HT, Other, Mi
MW27-15	A8H0328-12	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW27-15	A8H0328-12	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW27-19	A8H0328-13	NWTPH-Dx	Diesel	263	mg/kg	F-13	J	HT, Chrom
MW27-19	A8H0328-13	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW27-39	A8H0328-14	NWTPH-Dx	Diesel	69.4	mg/kg	F-13, F-15	J	HT, Chrom, Mi
MW27-39	A8H0328-14	NWTPH-Dx	Oil	65.9	mg/kg	F-03, F-16	J	HT, Other, Mi
MW28-19	A8H0328-15	NWTPH-Dx	Diesel	< 25.0	mg/kg		UJ	HT
MW28-19	A8H0328-15	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW28-25	A8H0328-16	NWTPH-Dx	Diesel	< 25.6	mg/kg		UJ	HT
MW28-25	A8H0328-16	NWTPH-Dx	Oil	< 51.1	mg/kg		UJ	HT
MW28-39	A8H0328-17	NWTPH-Dx	Diesel	27.8	mg/kg		J	HT, Chrom
MW28-39	A8H0328-17	NWTPH-Dx	Oil	< 50.0	mg/kg		UJ	HT
MW24-15	A8H0328-01	NWTPH-Gx	Gasoline Range Organics	< 5.29	mg/kg		UJ	HT
MW24-22	A8H0328-02	NWTPH-Gx	Gasoline Range Organics	109	mg/kg		J	HT
MW24-28	A8H0328-03RE1	NWTPH-Gx	Gasoline Range Organics	179	mg/kg		J	HT
MW24-35	A8H0328-04	NWTPH-Gx	Gasoline Range Organics	19.5	mg/kg		J	HT
MW25-19	A8H0328-05	NWTPH-Gx	Gasoline Range Organics	< 6.67	mg/kg		UJ	HT
MW25-22	A8H0328-06	NWTPH-Gx	Gasoline Range Organics	6.70	mg/kg		J	HT

MW25-35	A8H0328-07	NWTPH-Gx	Gasoline Range Organics	7.98	mg/kg		J	HT
MW26-15	A8H0328-08	NWTPH-Gx	Gasoline Range Organics	< 6.18	mg/kg		UJ	HT
MW26-19	A8H0328-09	NWTPH-Gx	Gasoline Range Organics	7.69	mg/kg		J	HT
MW26-29	A8H0328-10	NWTPH-Gx	Gasoline Range Organics	33.4	mg/kg		J	HT
MW26-33	A8H0328-11	NWTPH-Gx	Gasoline Range Organics	< 7.39	mg/kg		UJ	HT
MW27-15	A8H0328-12	NWTPH-Gx	Gasoline Range Organics	< 6.83	mg/kg		UJ	HT
MW27-19	A8H0328-13	NWTPH-Gx	Gasoline Range Organics	126	mg/kg		J	HT
MW27-39	A8H0328-14	NWTPH-Gx	Gasoline Range Organics	< 6.18	mg/kg		UJ	HT
MW28-19	A8H0328-15	NWTPH-Gx	Gasoline Range Organics	< 5.88	mg/kg		UJ	HT
MW28-25	A8H0328-16	NWTPH-Gx	Gasoline Range Organics	< 7.04	mg/kg		UJ	HT
MW28-39	A8H0328-17	NWTPH-Gx	Gasoline Range Organics	28.2	mg/kg		J	HT
MW24-15	A8H0328-01	EPA 8260C	Benzene	< 0.0106	mg/kg		UJ	HT
MW24-15	A8H0328-01	EPA 8260C	Toluene	< 0.0529	mg/kg		UJ	HT
MW24-15	A8H0328-01	EPA 8260C	Ethylbenzene	< 0.0265	mg/kg		UJ	HT
MW24-15	A8H0328-01	EPA 8260C	Xylenes, total	< 0.0794	mg/kg		UJ	HT
MW24-22	A8H0328-02	EPA 8260C	Benzene	< 0.0112	mg/kg		UJ	HT
MW24-22	A8H0328-02	EPA 8260C	Toluene	< 0.0559	mg/kg		UJ	HT
MW24-22	A8H0328-02	EPA 8260C	Ethylbenzene	< 0.0279	mg/kg		UJ	HT
MW24-22	A8H0328-02	EPA 8260C	Xylenes, total	0.110	mg/kg		J	HT
MW24-28	A8H0328-03RE1	EPA 8260C	Benzene	< 0.0131	mg/kg		UJ	HT

MW24-28	A8H0328-03RE1	EPA 8260C	Toluene	< 0.0653	mg/kg		UJ	HT
MW24-28	A8H0328-03RE1	EPA 8260C	Ethylbenzene	< 0.0326	mg/kg		UJ	HT
MW24-28	A8H0328-03RE1	EPA 8260C	Xylenes, total	< 0.0979	mg/kg		UJ	HT
MW24-35	A8H0328-04	EPA 8260C	Benzene	< 0.0114	mg/kg		UJ	HT
MW24-35	A8H0328-04	EPA 8260C	Toluene	< 0.0572	mg/kg		UJ	HT
MW24-35	A8H0328-04	EPA 8260C	Ethylbenzene	< 0.0286	mg/kg		UJ	HT
MW24-35	A8H0328-04	EPA 8260C	Xylenes, total	0.117	mg/kg		J	HT
MW25-19	A8H0328-05	EPA 8260C	Benzene	< 0.0133	mg/kg		UJ	HT
MW25-19	A8H0328-05	EPA 8260C	Toluene	< 0.0667	mg/kg		UJ	HT
MW25-19	A8H0328-05	EPA 8260C	Ethylbenzene	< 0.0334	mg/kg		UJ	HT
MW25-19	A8H0328-05	EPA 8260C	Xylenes, total	< 0.100	mg/kg		UJ	HT
MW25-22	A8H0328-06	EPA 8260C	Benzene	< 0.0112	mg/kg		UJ	HT
MW25-22	A8H0328-06	EPA 8260C	Toluene	< 0.0562	mg/kg		UJ	HT
MW25-22	A8H0328-06	EPA 8260C	Ethylbenzene	< 0.0281	mg/kg		UJ	HT
MW25-22	A8H0328-06	EPA 8260C	Xylenes, total	< 0.0843	mg/kg		UJ	HT
MW25-35	A8H0328-07	EPA 8260C	Benzene	< 0.0131	mg/kg		UJ	HT
MW25-35	A8H0328-07	EPA 8260C	Toluene	< 0.0653	mg/kg		UJ	HT
MW25-35	A8H0328-07	EPA 8260C	Ethylbenzene	< 0.0326	mg/kg		UJ	HT
MW25-35	A8H0328-07	EPA 8260C	Xylenes, total	< 0.0979	mg/kg		UJ	HT
MW26-15	A8H0328-08	EPA 8260C	Benzene	< 0.0124	mg/kg		UJ	HT

MW26-15	A8H0328-08	EPA 8260C	Toluene	< 0.0618	mg/kg		UJ	HT
MW26-15	A8H0328-08	EPA 8260C	Ethylbenzene	< 0.0309	mg/kg		UJ	HT
MW26-15	A8H0328-08	EPA 8260C	Xylenes, total	< 0.0928	mg/kg		UJ	HT
MW26-19	A8H0328-09	EPA 8260C	Benzene	< 0.0113	mg/kg		UJ	HT
MW26-19	A8H0328-09	EPA 8260C	Toluene	< 0.0563	mg/kg		UJ	HT
MW26-19	A8H0328-09	EPA 8260C	Ethylbenzene	< 0.0282	mg/kg		UJ	HT
MW26-19	A8H0328-09	EPA 8260C	Xylenes, total	< 0.0845	mg/kg		UJ	HT
MW26-29	A8H0328-10	EPA 8260C	Benzene	< 0.0125	mg/kg		UJ	HT
MW26-29	A8H0328-10	EPA 8260C	Toluene	< 0.0627	mg/kg		UJ	HT
MW26-29	A8H0328-10	EPA 8260C	Ethylbenzene	< 0.0314	mg/kg		UJ	HT
MW26-29	A8H0328-10	EPA 8260C	Xylenes, total	< 0.0941	mg/kg		UJ	HT
MW26-33	A8H0328-11	EPA 8260C	Benzene	< 0.0148	mg/kg		UJ	HT
MW26-33	A8H0328-11	EPA 8260C	Toluene	< 0.0739	mg/kg		UJ	HT
MW26-33	A8H0328-11	EPA 8260C	Ethylbenzene	< 0.0369	mg/kg		UJ	HT
MW26-33	A8H0328-11	EPA 8260C	Xylenes, total	< 0.111	mg/kg		UJ	HT
MW27-15	A8H0328-12	EPA 8260C	Benzene	< 0.0137	mg/kg		UJ	HT
MW27-15	A8H0328-12	EPA 8260C	Toluene	< 0.0683	mg/kg		UJ	HT
MW27-15	A8H0328-12	EPA 8260C	Ethylbenzene	< 0.0341	mg/kg		UJ	HT
MW27-15	A8H0328-12	EPA 8260C	Xylenes, total	0.102	mg/kg		J	HT
MW27-19	A8H0328-13	EPA 8260C	Benzene	< 0.0123	mg/kg		UJ	HT

MW27-19	A8H0328-13	EPA 8260C	Toluene	< 0.0616	mg/kg		UJ	HT
MW27-19	A8H0328-13	EPA 8260C	Ethylbenzene	0.0992	mg/kg		J	HT
MW27-19	A8H0328-13	EPA 8260C	Xylenes, total	0.631	mg/kg		J	HT
MW27-39	A8H0328-14	EPA 8260C	Benzene	< 0.0124	mg/kg		UJ	HT
MW27-39	A8H0328-14	EPA 8260C	Toluene	< 0.0618	mg/kg		UJ	HT
MW27-39	A8H0328-14	EPA 8260C	Ethylbenzene	< 0.0309	mg/kg		UJ	HT
MW27-39	A8H0328-14	EPA 8260C	Xylenes, total	< 0.0926	mg/kg		UJ	HT
MW28-19	A8H0328-15	EPA 8260C	Benzene	< 0.0118	mg/kg		UJ	HT
MW28-19	A8H0328-15	EPA 8260C	Toluene	< 0.0588	mg/kg		UJ	HT
MW28-19	A8H0328-15	EPA 8260C	Ethylbenzene	< 0.0294	mg/kg		UJ	HT
MW28-19	A8H0328-15	EPA 8260C	Xylenes, total	0.169	mg/kg		J	HT
MW28-25	A8H0328-16	EPA 8260C	Benzene	< 0.0141	mg/kg		UJ	HT
MW28-25	A8H0328-16	EPA 8260C	Toluene	< 0.0704	mg/kg		UJ	HT
MW28-25	A8H0328-16	EPA 8260C	Ethylbenzene	0.0528	mg/kg		J	HT
MW28-25	A8H0328-16	EPA 8260C	Xylenes, total	0.317	mg/kg		J	HT
MW28-39	A8H0328-17	EPA 8260C	Benzene	< 0.0105	mg/kg		UJ	HT
MW28-39	A8H0328-17	EPA 8260C	Toluene	< 0.0523	mg/kg		UJ	HT
MW28-39	A8H0328-17	EPA 8260C	Ethylbenzene	0.0638	mg/kg		J	HT
MW28-39	A8H0328-17	EPA 8260C	Xylenes, total	0.223	mg/kg		J	HT

TO:	Craig Hultgren, HydroCon
FROM:	Manon Tanner-Dave
DATE:	October 15, 2018
SUBJECT:	Laboratory Validation Report

HydroCon TOC Site No.	Coleman Wenatchee - 2017-074		
Sampling Event Type:	Soil Sampling	**Number of Samples:**	18
Laboratory Work Order:	A8H0529	**Final Report Date & Time:**	September 5, 2018

Analysis & Method

- ☒ Gasoline Range Hydrocarbon (NWTPH-Gx)
- ☒ Diesel Range Hydrocarbon without Silica Gel (NWTPH-Dx) ☐
- ☐ Diesel Range Organics with Silica Gel (NWTPH-DxSG)
- ☐ Volatile Organic Compounds (EPA 8260C)
- ☒ BETX (8021B)
- ☐ Dissolved Lead (200.8)
- ☐ Sulfate (300.0)
- ☒ Other – Percent solids, WA VPH/EPH

Data Package Completeness:

Data package did not include a formal case narrative form. Data package included a cover letter; no issues were noted.

EDD to Hardcopy Verification:

An EDD was not provided.

Technical Data Validation:

- ☒ Holding Times & Sample Receipt
- ☒ Surrogate Compounds
- ☒ Associated Matrix Spike/Matrix Spike Duplicate (MS/MSD)
- ☒ Associated Laboratory Duplicate
- ☒ Laboratory Control Sample/ Laboratory Control Sample Duplicates (LCS/LCSD)
- ☒ Method Blank
- ☐ Field Duplicates
- ☒ Target Analyte List
- ☒ Reporting Limits (MDL and MRL)
- ☒ Reported Results

Holding Times & Sample Receipt:

All holding times and sample receipt were acceptable, with the exceptions noted below:

Discrepancies were noted in the cooler receipt form that the sample IDs on the sample jars and their associated VOAs were different.

Surrogate Compounds:

All surrogate percent recoveries (%R) were within laboratory limits, with the exceptions noted below:

Sample ID	Analyte	Surrogate %R	Control Limits	Qualifier/Comments
MW32-14	Diesel/Oil	110%	50-150%	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference. Since the percent recovery fell within control limits; no qualifiers were applied to the results.
MW30-20	Gasoline Range Organics	157% (NWTPH-Gx) 99% (8260)	50-150% 80-120%	TPH-Gx surrogate recovery cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract. See 8260C results for accurate surrogate recovery. Since the 8260C surrogate recovery was within control limits; no qualifiers were applied to the results.
MW32-14	Gasoline Range Organics	163%	50-150%	Surrogate recovery is outside of established control limits due to a sample matrix effect. J-SSR qualify result.

Associated Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Matrix spikes were analyzed at the appropriate frequency and all %R were within the acceptance criteria.

Associated Laboratory Duplicate:

Laboratory duplicates were analyzed at the appropriate frequency and all relative percent difference (RPD) were within the acceptance criteria, with the exceptions noted below:

Analyte	Parent Sample MW0912-35	Duplicate Sample 8080917-DUP2	RL	RPD (CL = 30%)	Qualifier/Comments
Gasoline Range Organics	12.8	24.0	8.32	61%	Both concentrations were <5x the reporting limit and their absolute difference was <2x the reporting limit; no qualifiers were applied to the results.

Analyte	Parent Sample MW29-24	Duplicate Sample 8080916-DUP1	RL	RPD (CL = 30%)	Qualifier/Comments
Ethylbenzene	ND (0.0168)	0.181	0.0267	200%	Parent sample result <5x the reporting limit (RL); duplicate sample result >5x RL. Absolute difference >2x RL; J-REP qualify results.
Xylenes, total	ND (0.0656)	0.997	0.0800	175%	

Analyte	Parent Sample MW30-15	Duplicate Sample 8080916-DUP2	RL	RPD (CL = 30%)	Qualifier/Comments
Xylenes, total	ND (0.0667)	0.101	0.0961	41%	Parent and duplicate sample results <5x RL. Absolute difference <2x RL; no qualifiers applied to the results.

Laboratory Control Sample/Laboratory Control Sample Duplicates:

LCS were analyzed at the appropriate frequency and all %R were within the acceptance criteria.

Method Blank:

Method blanks were analyzed at the appropriate frequency and were non-detect (ND) for all target analytes, with the exceptions noted below:

Blank ID	Analyte	Units	Concentration	MRL	Associated Samples	Qualifier/Comments
Blank (BGH0638-BLK1)	C10-C12 Aliphatics	mg/kg wet	0.130 J	2.00	SL01-02 (A8H0529-18RE1)	All associated results are >5x the blank concentration; no qualifiers applied to the results.
	C21-C34 Aliphatics	mg/kg wet	0.600 J	2.00		
	C12-C16 Aromatics	mg/kg wet	0.330 J	2.00		
	C16-C21 Aromatics	mg/kg wet	0.920 J	2.00		
	C21-C34-Aromatics	mg/kg wet	1.50 J	2.00		

Field Duplicate(s):

Not applicable.

Target Analyte List:

All requested analytes were present.

Reporting Limits (MDL and MRL):

Reporting limits were within the acceptance criteria, with the following exceptions noted below:

Select samples had elevated MRLs due to sample dilution as a result of high analyte concentrations or matrix interference issues. Results were reported from the dilution analyses, as applicable.

Reported Results:

All reported results are acceptable.

Laboratory qualifiers for NWTPH-Dx:

- (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.
    - J/UJ-Other qualify affected results.
- (F-13) The chromatographic pattern does not resemble the fuel standard used for quantitation.
    - J/UJ-Chrom qualify affected results.
- (F-15) Results for diesel are estimated due to overlap from the reported oil result.
    - J/UJ-Mi qualify affected results.
- (F-16) Results for oil are estimated due to overlap from the reported diesel result.
    - J/UJ-Mi qualify affected results.

Laboratory qualifiers for NWTPH-Gx:

- (S-04) Surrogate recovery is outside of established control limits due to a sample matrix effect.
    - J/UJ-SSR qualify affected results.

Laboratory qualifiers for BTEX:

- (M-02) Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
    - J/UJ-Mi qualify affected results.
- (Q-04) Spike recovery and/or RPD is outside control limits due to a non-homogenous sample matrix.
    - J/UJ-REP qualify affected results.

Lab Validation Assessment

Analytical results are usable to meet the project objectives.

Data Quality Review Statement for Report

Aside from the data quality issues discussed above, the data quality review identified no concerns with respect to the quality or usability of the data presented herein.

The data meet the criteria outlined above, with the noted exceptions. No data were rejected and completeness was 100 percent. All results are usable for their intended purpose.

Appendix A. Data Validation Qualifiers and Definitions

The following lists the data validation qualifier codes and their definitions that were assigned to analytical results in this data validation review process.

Data Validation Qualifiers and Definitions:

☐ (R) The sample result is reject due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

☐ (DNR) Do not report. A more appropriate result is reported from another analysis or dilution.

Appendix B. Data Validation Qualified Summary Table

Laboratory 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.
- (F-13) The chromatographic pattern does not resemble the fuel standard used for quantitation.
- (F-15) Results for diesel are estimated due to overlap from the reported oil result.
- (F-16) Results for oil are estimated due to overlap from the reported diesel result.
- (M-02) Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
- (Q-04) Spike recovery and/or RPD is outside control limits due to a non-homogenous sample matrix.
- (S-04) Surrogate recovery is outside of established control limits due to a sample matrix effect.

Validation qualifiers:

- (J) The result is an estimated quantity.
- (UJ) Estimated and not detected. The analyte is considered not detected at the reported value, and the associated numerical value is an estimated value.

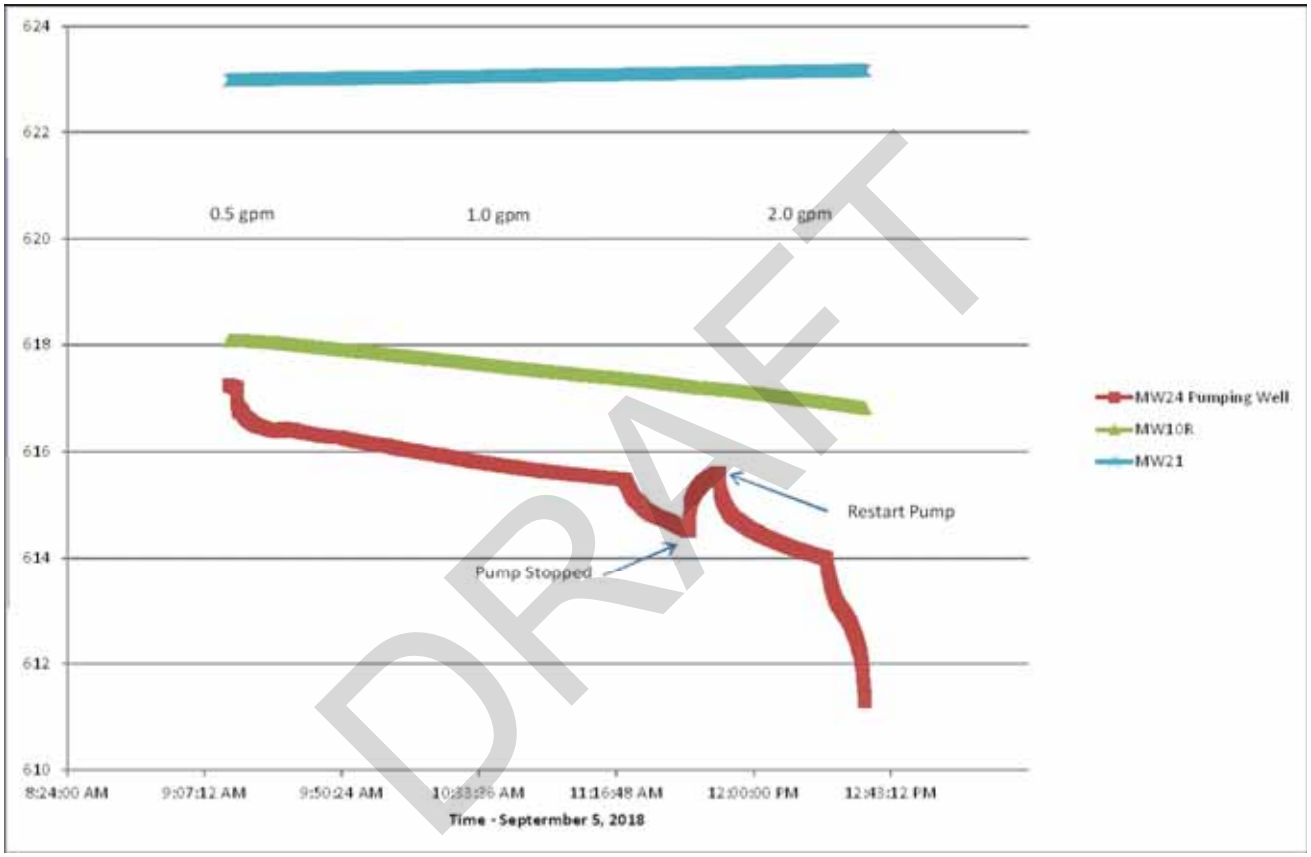
Reason codes:

- Chrom = Chromatographic pattern doesn't match the pattern of the calibration standard.
- Mi = Matrix interference.
- Other = Other, described in data validation report.
- REP = Replication (MS/MSD or laboratory duplicate RPD; laboratory triplicate RSD), field replicate. Precision (all replicates).
- SSR = Surrogate spike/labeled compound recovery.

Appendix B. Validator Qualified Data Summary Table

Sample ID	Laboratory ID	Method	Parameter Name	Result	Result Units	Laboratory Qualifier	Validator Qualifier	Reason Code
MW29-24	A8H0529-02	NWTPH-Dx	Diesel	81.2	mg/kg	F-13	J	Chrom
MW30-20	A8H0529-06	NWTPH-Dx	Diesel	424	mg/kg	F-13	J	Chrom
MW30-28	A8H0529-07	NWTPH-Dx	Diesel	1900	mg/kg	F-13	J	Chrom
MW30-32	A8H0529-08	NWTPH-Dx	Diesel	407	mg/kg	F-13	J	Chrom
MW30-40	A8H0529-09	NWTPH-Dx	Diesel	266	mg/kg	F-13, F-15	J	Chrom, Mi
MW30-40	A8H0529-09	NWTPH-Dx	Oil	250	mg/kg	F-03, F-16	J	Other, Mi
MW31-28	A8H0529-11	NWTPH-Dx	Diesel	564	mg/kg	F-13	J	Chrom
MW0912-35	A8H0529-13	NWTPH-Dx	Diesel	176	mg/kg	F-13, F-15	J	Chrom, Mi
MW0912-35	A8H0529-13	NWTPH-Dx	Oil	117	mg/kg	F-03, F-16	J	Other, Mi
MW1012-35	A8H0529-14	NWTPH-Dx	Diesel	50.6	mg/kg	F-13	J	Chrom
MW32-14	A8H0529-16RE1	NWTPH-Dx	Diesel	3400	mg/kg	F-13	J	Chrom
MW32-14	A8H0529-16RE1	NWTPH-Gx	Gasoline Range Organics	1930	mg/kg	S-04	J	SSR
MW29-24	A8H0529-02	BTEX (8260)	Ethylbenzene	ND	mg/kg	Q-04	UJ	REP
MW29-24	A8H0529-02	BTEX (8260)	Xylenes, total	ND	mg/kg	Q-04	UJ	REP
MW30-28	A8H0529-07	BTEX (8260)	Xylenes, total	0.123	mg/kg	M-02	J	Mi

Appendix E
Step Drawdown Tests



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

DATE: 11-26-18
DWN: JJT
CHK: NV
APPROVED: NV
PRJ. MGR: CH
PROJECT NO: 2017-074

FIGURE E1
STEP DRAWDOWN PLOTS MW24

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

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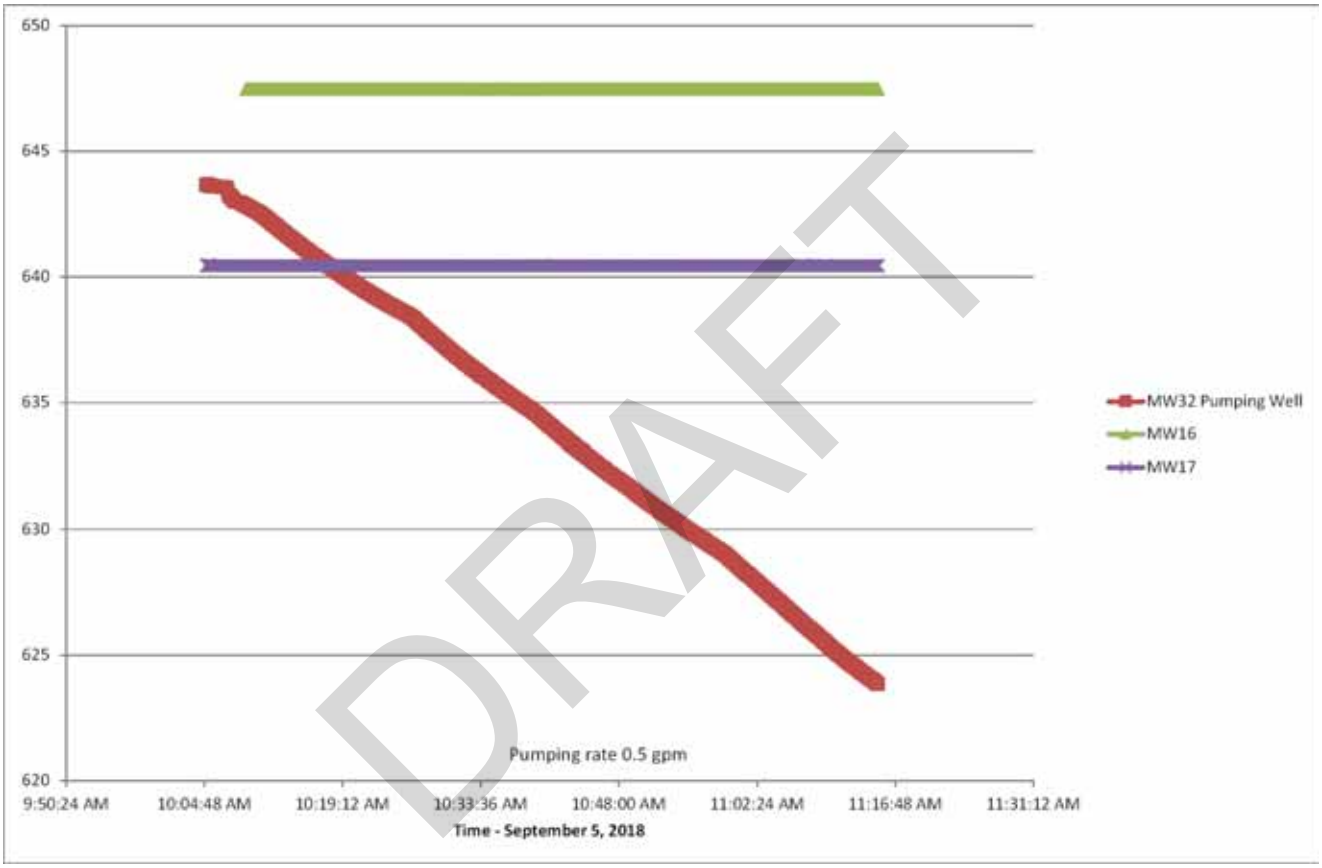


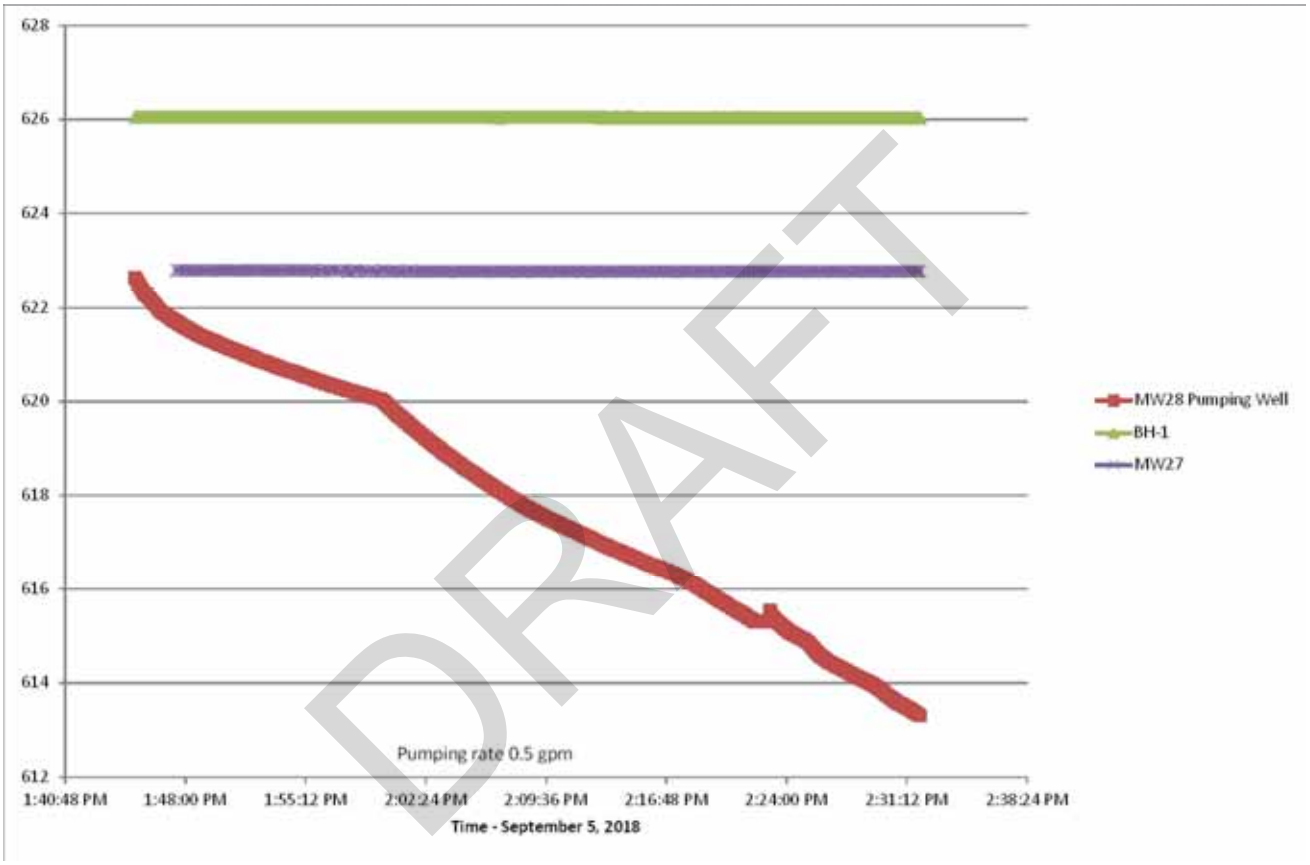
Hydro Con
510 Allen St. Suite B Kelso, Wa 98626, Ph(360)-703-6086

DATE: 11-26-18
DWN: JJT
CHK: NV
APPROVED: NV
PRJ. MGR: CH
PROJECT NO: 2017-074

FIGURE E3
STEP DRAWDOWN PLOTS MW32

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Nov 2018\2017-074_BM-112618.dwg



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

DATE: 11-26-18
DWN: JJT
CHK: NV
APPROVED: NV
PRJ. MGR: CH
PROJECT NO: 2017-074

FIGURE E2
STEP DRAWDOWN PLOTS MW28

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Nov 2018\2017-074_BM-112618.dwg

Appendix F
Upgrades to Groundwater Remediation System

UPGRADES TO GROUNDWATER REMEDIATION SYSTEM

COLEMAN OIL

3 CHEHALIS ST.

WENATCHEE, WASHINGTON

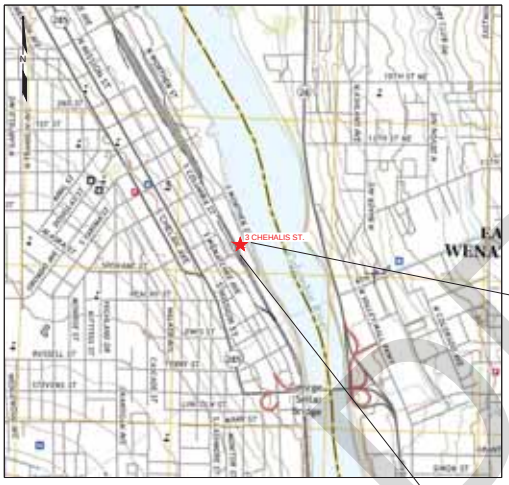


TABLE OF CONTENTS

PROJECT NAME: COLEMAN OIL
PROJECT NUMBER: 2017-074
STREET ADDRESS: 3 CHEHALIS ST.
CITY, STATE: WENATCHEE, WA.

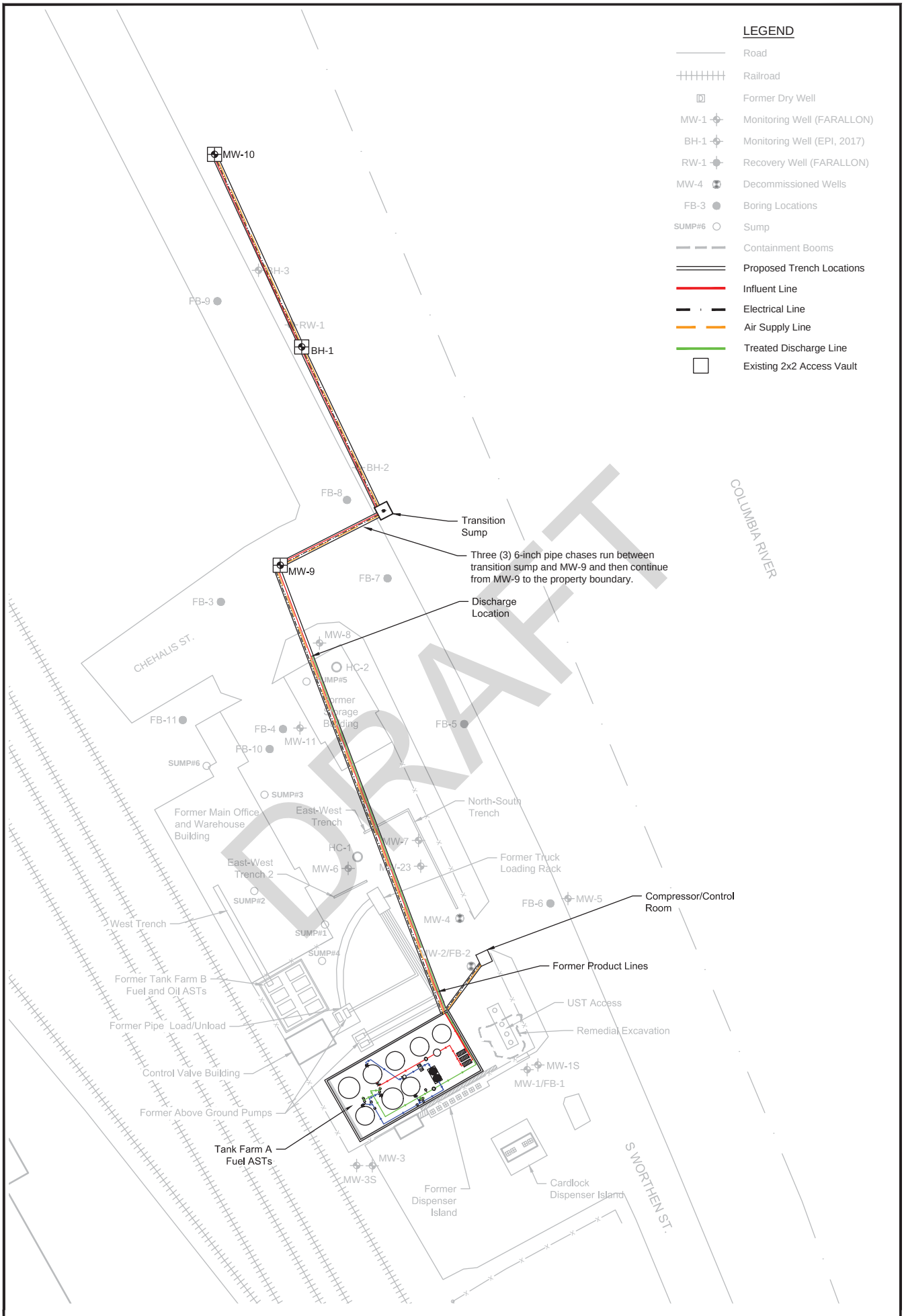
DATE: 10-11-18
DRAWN BY: JJT
CHECKED BY: MES

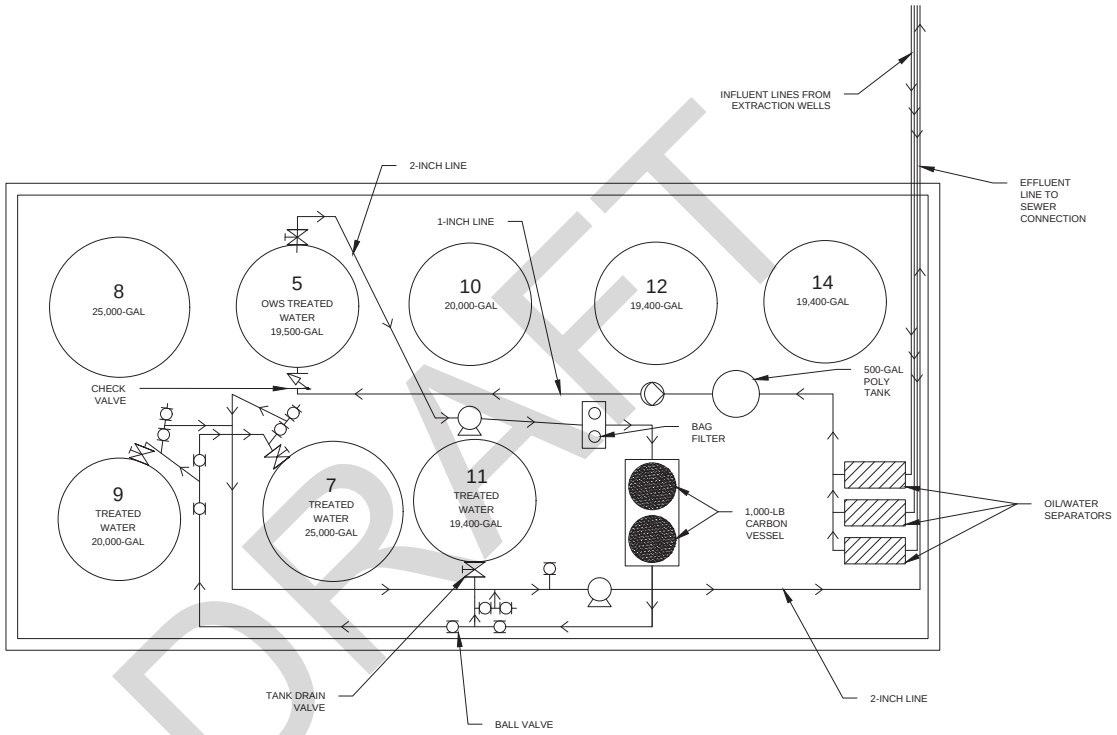
SHEET G-100
COVER SHEET

NOT TO SCALE

SELMAN

HydroCon


LEGEND
Road
Railroad
Former Dry Well
MW-1 Monitoring Well (FARALLON)
BH-1 Monitoring Well (EPI, 2017)
RW-1 Recovery Well (FARALLON)
MW-4 Decommissioned Wells
FB-3 Boring Locations
SUMP#6 Sump
Containment Booms
Proposed Trench Locations
Influent Line
Electrical Line
Air Supply Line
Treated Discharge Line
Existing 2x2 Access Vault
MW-10
BH-3
FB-9
RW-1
BH-1
BH-2
FB-8
Transition Sump
Three (3) 6-inch pipe chases run between transition sump and MW-9 and then continue from MW-9 to the property boundary.
MW-9
FB-7
FB-3
Discharge Location
MW-8
HC-2
SUMP#5
Former Storage Building
FB-11
FB-4
MW-11
FB-5
FB-10
SUMP#6
SUMP#3
Former Main Office and Warehouse Building
East-West Trench
North-South Trench
HC-1
MW-7
East-West Trench 2
MW-6
MW-23
Former Truck Loading Rack
SUMP#2
FB-6
MW-5
Compressor/Control Room
West Trench
SUMP#1
MW-4
SUMP#4
MW-2/FB-2
Former Product Lines
Former Tank Farm B Fuel and Oil ASTs
UST Access
Former Pipe Load/Unload
Remedial Excavation
Control Valve Building
MW-1S
MW-1/FB-1
Former Above Ground Pumps
Tank Farm A Fuel ASTs
MW-3
MW-3S
Former Dispenser Island
Cardlock Dispenser Island
CHEHALIS ST.
COLUMBIA RIVER
S WORTHEN ST.
DRAFT
N
W
E
S
0
50
100
SCALE IN FEET
1" = 50'
HydroCon
510 Allen St. Suite B Kelso, Wa 98626, Ph(360)-703-6086
DATE: 10-16-18
DWN: JH/JJT
CHK: MS
APPROVED: MS
PRJ. MGR: CH
PROJECT NO: 2017-074
SHEET R-100
EXISTING REMEDIATION SYSTEM LAYOUT
COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.
C:\Users\Josh\Desktop\Autocad Files\Hydrocon-Autocad\2017-074 Coleman Oil\2018\Sept 2018\2017-074_2018_C-SHEETS-JH.dwg



LEGEND

- TANK CONTAINMENT AREA
- INFLUENT LINE (IMPACTED WATER)
- OWS-TREATED WATER
- SYSTEM-TREATED WATER
- TRASH PUMP
- DIAPHRAGM PUMP
- CHECK VALVE
- TANK DRAIN VALVE
- TANK DRAIN VALVE
- FLOW DIRECTION ARROW

0 8 16
SCALE IN FEET
1" = 8'

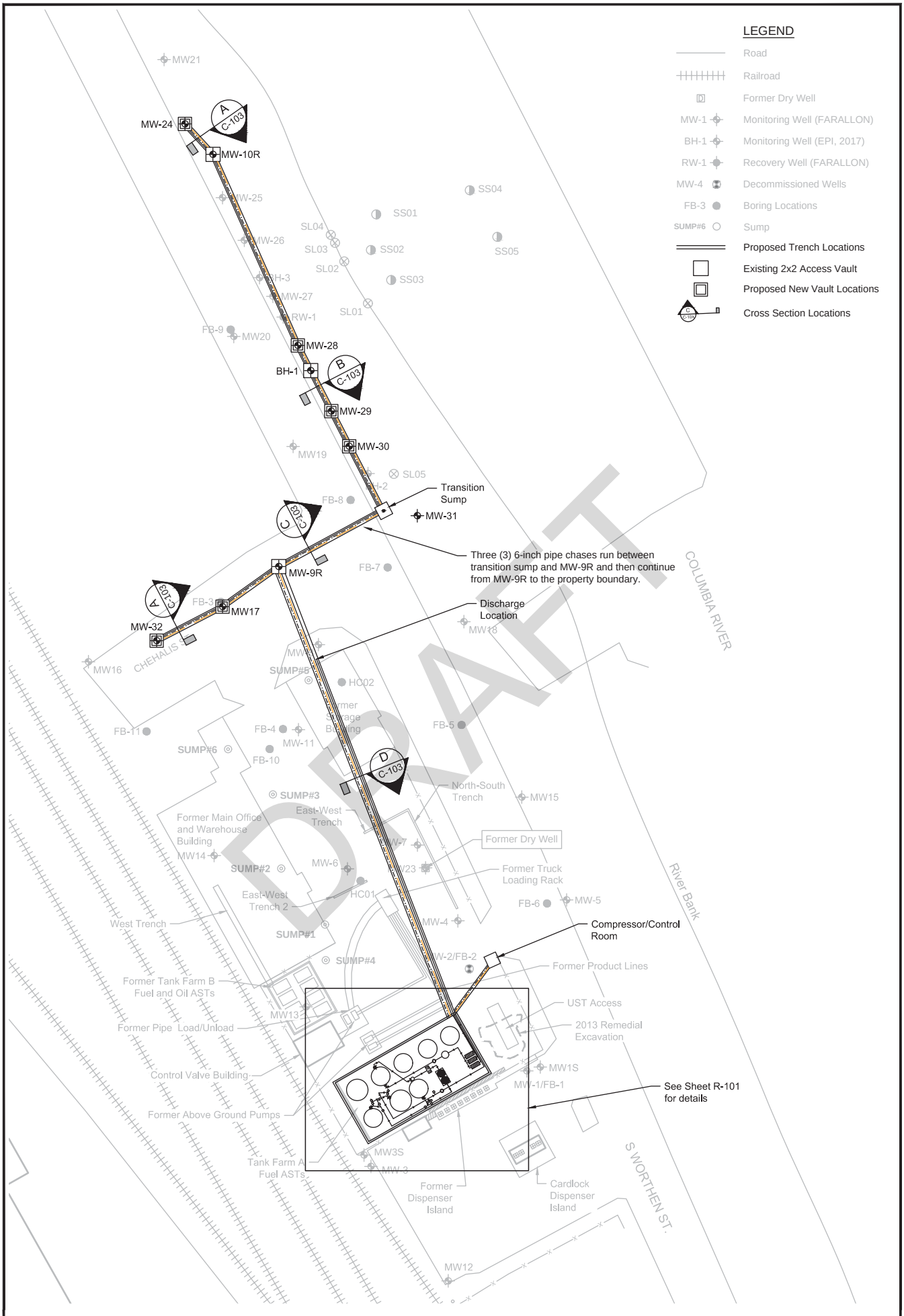
HydroCon
510 Allen St. Suite B Kelso, Wa 98626. Ph(360)-703-6086

DATE: 10-11-18
DWN: JH/JJT
CHK: MS
APPROVED: MS
PRJ. MGR: CH
PROJECT NO: 2017-074

SHEET R-101
TANK FARM A LAYOUT

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

C:\Users\Josh\Desktop\Autocad Files\Hydrocon Autocad\2017-074 Coleman OK\2018\Sept 2018\2017-074_2018_C-SHEETS-092718.dwg



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N W E S

0 50 100

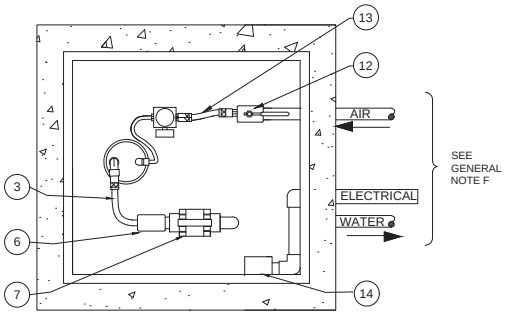
SCALE IN FEET
1" = 50'

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

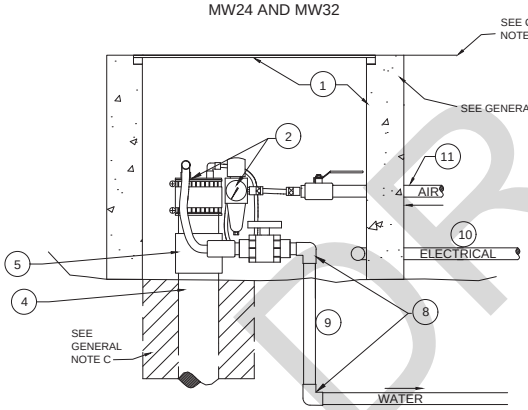
DATE: 10-11-18
DWN: JJT
CHK: MS
APPROVED: MS
PRJ. MGR: MS
PROJECT NO: 2017-074

SHEET R-102
PROPOSED REMEDIATION SITE LAYOUT

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.



TYPICAL PLAN VIEW FOR TERMINAL WELL VAULTS:
MW24 AND MW32



TYPICAL SECTIONAL VIEW FOR TERMINAL WELL VAULTS:
MW24 AND MW32

GENERAL NOTES:

A. CONTRACTOR SHALL REMOVE EXISTING WELL MONUMENTS PRIOR TO INSTALLING NEW WELL VAULTS.

B. CONTRACTOR SHALL INSTALL THE VAULTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. AN UNYIELDING SURFACE ON THE FINAL LIFT OF THE BACKFILL SHALL BE PROVIDED PRIOR TO PAVING. CONTRACTOR WILL REMEDY ANY SUBSIDENCE THAT OCCURS WITHIN 1 YEAR WITHOUT COST TO HYDROCON., OR PROPERTY OWNER.

C. THE CONTRACTOR SHALL AVOID DAMAGING THE EXISTING GROUTED WELL SEAL [I.E., THE SEAL BETWEEN THE WELL CASING AND THE BORE HOLE WALL (ANNULAR SEAL)] WHEN INSTALLING THE PRECAST VAULT AND WHEN DRILLING DRAIN HOLES IN THE BOTTOM OF THE VAULT. THE WELL SEAL TYPICALLY EXTENDS A MINIMUM OF FOUR INCHES HORIZONTALLY BEYOND THE SIDE OF THE WELL CASING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ANNULAR SEAL AT THE CONTRACTOR'S EXPENSE IF THE SEAL IS DAMAGED BY THE CONTRACTOR DURING THE INSTALLATION OF THE VAULT.

D. CONTRACTOR SHALL GROUT THE FLOOR OF THE VAULT TO MINIMIZE VACUUM SHORT CIRCUITING. PROVIDE A MINIMUM OF FOUR $\frac{1}{4}$-INCH DIAMETER WEEP HOLES FOR DRAINAGE. PROVIDE A MINIMUM THICKNESS OF 6 INCHES OF GROUT IN THE BASE OF THE VAULT.

E. CONTRACTOR SHALL SET THE TOP OF VAULT FLUSH WITH THE EXISTING GRADE.

F. THE 1-INCH SCHEDULE PEX TUBING FOR THE WATER SHOULD BE INSTALLED AT A MINIMUM DEPTH OF 36 INCHES IN THE PIPE TRENCH. TUBING FOR COMPRESSED AIR CAN BE INSTALLED AT A SHALLOWER DEPTH AND SHOULD BE INSTALLED THROUGH KNOCKOUTS IN THE WALL OF THE VAULT. ELECTRICAL CONDUIT SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW GROUND SURFACE.

DESCRIPTION OF WELLHEAD ITEMS:

1. OLDCASTLE PRECAST "24 X 24 X VARIES VAULT". SPECIFY A DEPTH OF 24 INCHES, WITH OPEN BOTTOM; KNOCKOUTS ON ONE SIDE OF VAULT AND GALVANIZED LID.
2. QED ENVIRONMENTAL - STANDARD 4-INCH WELL CAP WITH FITTINGS FOR WELL PUMP AP3 BOTTOM LOADING SHORT PUMP; EQUIPPED WITH FILTER REGULATOR; PUMP CYCLE COUNTER; BRASS QUICK-CONNECT FITTINGS ($\frac{3}{8}$-INCH O.D. AIR SUPPLY AND $\frac{3}{4}$-INCH O.D. LIQUID DISCHARGE LINES);
3. QED $\frac{3}{4}$-INCH O.D. LIQUID DISCHARGE LINE.
4. EXISTING WELL (4-INCH DIAMETER SCHEDULE 40 PVC).
5. 4-INCH DIAMETER SCHEDULE 40 PVC COUPLING SOC X SOC (SPEARS PART NO. 429=040.
6. 1-INCH DIAMETER CHECK VALVE (SPEARS S1580-10F) THREADED
7. 1-INCH DIAMETER TRUE UNION BALL VALVE (SPEARS 3629-010) THREADED OR SOCKET.
8. 1-INCH DIAMETER PEX 90° ELBOW, PUSH CONNECTORS.
9. 1-INCH DIAMETER PEX TUBING
10. 1-INCH DIAMETER (MINIMUM) PVC ELECTRICAL CONDUIT
11. 3/4-INCH NOMINAL DIAMETER PEX TUBING FOR COMPRESSED AIR SUPPLY
12. 3/4 - INCH REGULAR PORT THREADED BRONZE BALL VALVE; APOLLO VALVE SERIES 32-104.
13. QED $\frac{3}{8}$-INCH O.D. AIR SUPPLY LINE.
14. NEMA-6P JUNCTION BOX FOR 120V ELECTRICAL. PROVIDE AND HARD WIRE CHROMALOX HEAT CABLE MODEL SRL-5-1CT INTO JUNCTION BOX. SECURE HEAT CABLE TO WATER LINE, VALVES, AND FITTINGS USING CHROMALOX-SUPPLIED SPLICES, TAPE, AND ENDS. PROVIDE AND INSTALL FOAM PIPE INSULATION.

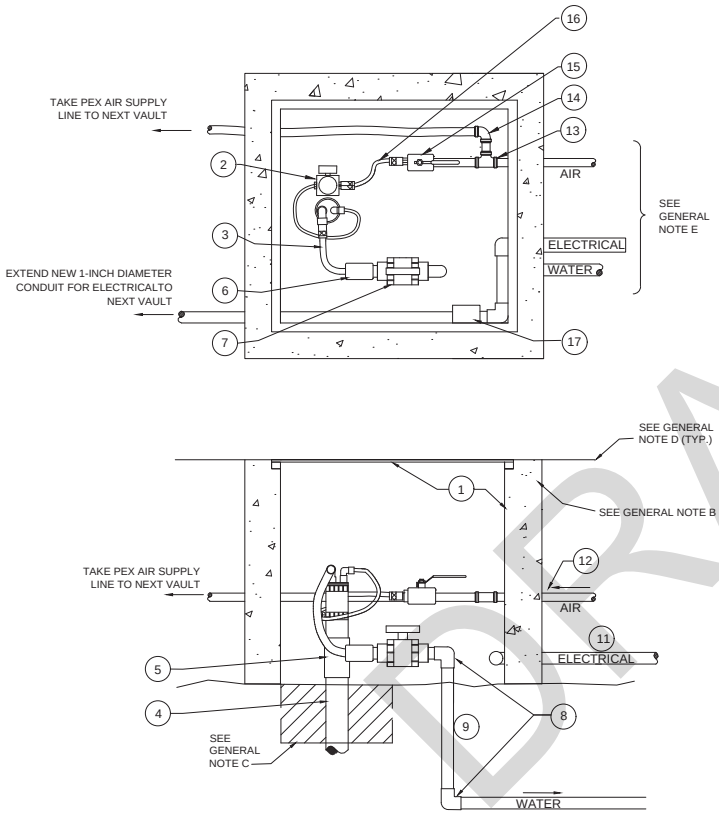
NOT TO SCALE

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

DATE: 10-11-18
DWN: MES/JJT
CHK: MES
APPROVED: MES
PRJ. MGR: CH
PROJECT NO:
2017-074

SHEET C-100
DETAILS FOR TERMINAL VAULTS MW-24 AND MW-32

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.



GENERAL NOTES:

A. CONTRACTOR SHALL REMOVE EXISTING WELL MONUMENTS PRIOR TO INSTALLING NEW WELL VAULTS.

B. CONTRACTOR SHALL INSTALL THE VAULTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. AN UNYIELDING SURFACE ON THE FINAL LIFT OF THE BACKFILL SHALL BE PROVIDED PRIOR TO PAVING. CONTRACTOR WILL REMEDY ANY SUBSIDENCE THAT OCCURS WITHIN 1 YEAR WITHOUT COST TO HYDROCON., OR PROPERTY OWNER.

C. THE CONTRACTOR SHALL AVOID DAMAGING THE EXISTING GROUTED WELL SEAL [I.E., THE SEAL BETWEEN THE WELL CASING AND THE BORE HOLE WALL (ANNULAR SEAL)] WHEN INSTALLING THE PRECAST VAULT AND WHEN DRILLING DRAIN HOLES IN THE BOTTOM OF THE VAULT. THE WELL SEAL TYPICALLY EXTENDS A MINIMUM OF FOUR INCHES HORIZONTALLY BEYOND THE SIDE OF THE WELL CASING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ANNULAR SEAL AT THE CONTRACTOR'S EXPENSE IF THE SEAL IS DAMAGED BY THE CONTRACTOR DURING THE INSTALLATION OF THE VAULT.

D. CONTRACTOR SHALL SET THE TOP OF VAULT FLUSH WITH THE EXISTING GRADE.

E. THE 1-INCH DIAMETER PEX TUBING FOR THE WATER SHOULD BE INSTALLED AT A MINIMUM DEPTH OF 36 INCHES IN THE PIPE TRENCH. TUBING FOR COMPRESSED AIR CAN BE INSTALLED AT A SHALLOWER DEPTH AND SHOULD BE INSTALLED THROUGH KNOCKOUTS IN THE WALL OF THE VAULT. ELECTRICAL CONDUIT SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW GROUND SURFACE.

DESCRIPTION OF WELLHEAD ITEMS:

1. OLDCASTLE PRECAST "24 X 24 X VARIES VAULT". SPECIFY A DEPTH OF 24 INCHES, WITH OPEN BOTTOM; KNOCKOUTS ON ONE SIDE OF VAULT AND GALVANIZED LID.
2. QED ENVIRONMENTAL - STANDARD 2-INCH WELL CAP WITH FITTINGS FOR WELL PUMP AP2 BOTTOM LOADING SHORT PUMP; EQUIPPED WITH FILTER REGULATOR; PUMP CYCLE COUNTER; BRASS QUICK-CONNECT FITTINGS ($\frac{3}{8}$-INCH O.D. AIR SUPPLY AND $\frac{3}{4}$-INCH O.D. LIQUID DISCHARGE LINES);
3. QED $\frac{5}{8}$-INCH O.D. LIQUID DISCHARGE LINE.
4. EXISTING WELL (2-INCH DIAMETER SCHEDULE 40 PVC).
5. 2-INCH DIAMETER SCHEDULE 40 PVC COUPLING SOC X SOC (SPEARS PART NO. 429=020.
6. 1-INCH DIAMETER CHECK VALVE (SPEARS S1580-10F) THREADED
7. 1-INCH DIAMETER TRUE UNION BALL VALVE (SPEARS 3629-010) THREADED OR SOCKET.
8. 1-INCH DIAMETER PEX 90° ELBOW PUSH CONNECTIONS
9. 1-INCH DIAMETER PEX TUBING
10. REPLACE EXISTING 90° ELBOW WITH A 1-INCH DIAMETER SCHEDULE 80 PVC "TEE " FOR EXTENDING WATER LINE TO THE NORTH TO CONNECT NEW WELL MW28 TO SYSTEM
11. 1-INCH DIAMETER (MINIMUM) PVC ELECTRICAL CONDUIT
12. 3/4-INCH NOMINAL DIAMETER PEX TUBING FOR COMPRESSED AIR SUPPLY
13. 3/4-INCH PEX "T" FITTING PUSH CONNECTOR
14. 3/4-INCH PEX 90 DEGREE ELBOW PUSH CONNECTOR
15. 3/4 - INCH REGULAR PORT THREADED BRONZE BALL VALVE; APOLLO VALVE SERIES 32-104.
16. QED $\frac{3}{8}$-INCH O.D. AIR SUPPLY LINE.
17. NEMA-6P JUNCTION BOX FOR 120V ELECTRICAL. PROVIDE AND HARD WIRE CHROMALOX HEAT CABLE MODEL SRL-5-1CT INTO JUNCTION BOX. SECURE HEAT CABLE TO WATER LINE, VALVES, AND FITTINGS USING CHROMALOX-SUPPLIED SPLICES, TAPE, AND ENDS. PROVIDE AND INSTALL FOAM PIPE INSULATION.

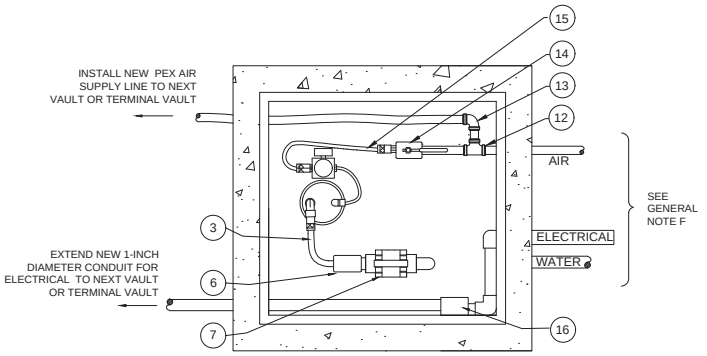
NOT TO SCALE

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

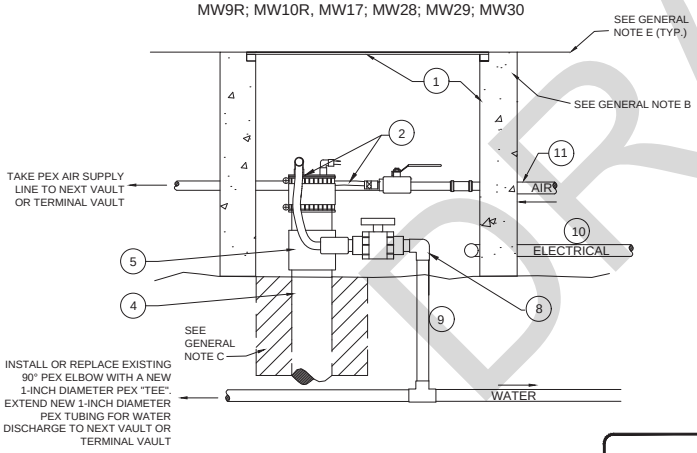
DATE: 10-11-18
DWN: MES/JJT
CHK: MES
APPROVED: MES
PRJ. MGR: CH
PROJECT NO: 2017-074

SHEET C-101
DETAILS FOR VAULT BH-1

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.



TYPICAL PLAN VIEW FOR PASS THROUGH VAULTS
MW9R; MW10R, MW17; MW28; MW29; MW30



TYPICAL SECTIONAL VIEW FOR PASS THROUGH VAULTS
MW9R; MW10R, MW17; MW28; MW29; MW30

GENERAL NOTES:

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B. CONTRACTOR SHALL INSTALL THE VAULTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES. AN UNYIELDING SURFACE ON THE FINAL LIFT OF THE BACKFILL SHALL BE PROVIDED PRIOR TO PAVING. CONTRACTOR WILL REMEDY ANY SUBSIDENCE THAT OCCURS WITHIN 1 YEAR WITHOUT COST TO HYDROCON., OR PROPERTY OWNER.

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D. CONTRACTOR SHALL GROUT THE FLOOR OF THE VAULT TO MINIMIZE VACUUM SHORT CIRCUITING. PROVIDE A MINIMUM OF FOUR $\frac{1}{2}$-INCH DIAMETER WEEP HOLES FOR DRAINAGE. PROVIDE A MINIMUM THICKNESS OF 6 INCHES OF GROUT IN THE BASE OF THE VAULT.

E. CONTRACTOR SHALL SET THE TOP OF VAULT FLUSH WITH THE EXISTING GRADE.

F. THE 1-INCH PEX TUBING FOR THE WATER SHOULD BE INSTALLED AT A MINIMUM DEPTH OF 36 INCHES IN THE PIPE TRENCH. TUBING FOR COMPRESSED AIR CAN BE INSTALLED AT A SHALLOWER DEPTH AND SHOULD BE INSTALLED THROUGH KNOCKOUTS IN THE WALL OF THE VAULT. ELECTRICAL CONDUIT SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW GROUND SURFACE.

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2. QED ENVIRONMENTAL - STANDARD 4-INCH WELL CAP WITH FITTINGS FOR WELL PUMP AP3 BOTTOM LOADING SHORT PUMP; EQUIPPED WITH FILTER REGULATOR; PUMP CYCLE COUNTER; BRASS QUICK-CONNECT FITTINGS ($\frac{1}{4}$-INCH O.D. AIR SUPPLY AND $\frac{3}{4}$-INCH O.D. LIQUID DISCHARGE LINES);
3. QED $\frac{3}{4}$-INCH O.D. LIQUID DISCHARGE LINE.
4. EXISTING WELL (4-INCH DIAMETER SCHEDULE 40 PVC).
5. 4-INCH DIAMETER SCHEDULE 40 PVC COUPLING SOC X SOC (SPEARS PART NO. 429=040.
6. 1-INCH DIAMETER CHECK VALVE (SPEARS S1580-10F) THREADED
7. 1-INCH DIAMETER TRUE UNION BALL VALVE (SPEARS 3629-010) THREADED OR SOCKET.
8. 1-INCH DIAMETER PEX 90° ELBOW PUSH CONNECTIONS
9. 1-INCH DIAMETER PEX TUBING
10. 1-INCH DIAMETER (MINIMUM) PVC ELECTRICAL CONDUIT
11. 3/4-INCH NOMINAL DIAMETER PEX TUBING FOR COMPRESSED AIR SUPPLY
12. 3/4-INCH PEX "T" FITTING PUSH CONNECTOR
13. 3/4-INCH PEX 90 DEGREE ELBOW PUSH CONNECTOR
14. 3/4 - INCH REGULAR PORT THREADED BRONZE BALL VALVE; APOLLO VALVE SERIES 32-104.
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NOT TO SCALE

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

DATE: 10-11-18
DWN: MES/JJT
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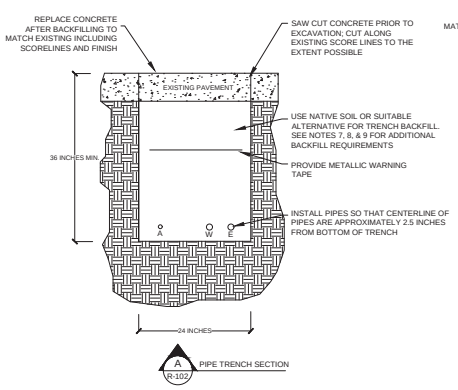
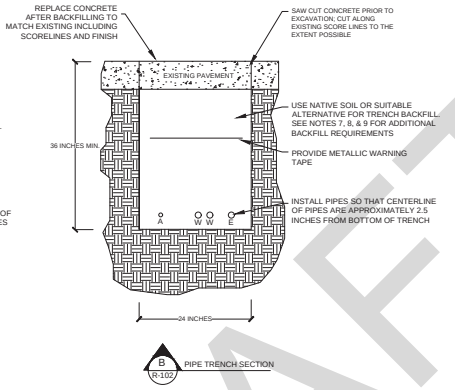
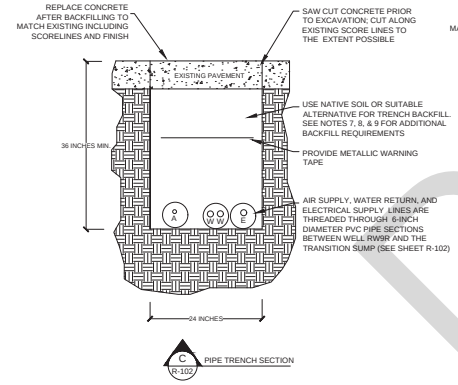
APPROVED: MES
PRJ. MGR: CH
PROJECT NO: 2017-074

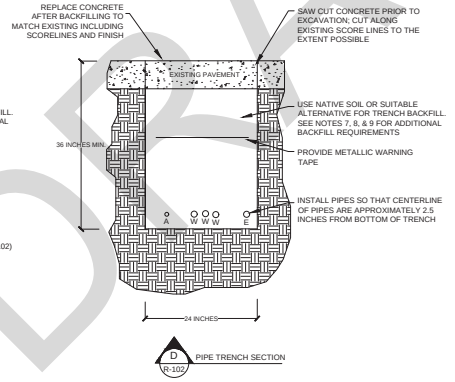
SHEET C-102
DETAILS FOR PASS-THROUGH VAULTS

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.









GENERAL NOTES:

1. INSPECT ALL PIPES FOR CUTS, SCRATCHES, GOUGES, OR SPLIT END UPON DELIVERY TO SITE AND PRIOR TO INSTALLATION. DO NOT USE DAMAGED SECTIONS OF PIPE.
2. STORE AND HANDLE PIPING IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. TRENCH BOTTOM SHALL BE CONTINUOUS, FREE OF ROCKS, AND RELATIVELY SMOOTH.
4. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PIPE SOLVENT CONNECTIONS AND CURE TIMES.
5. TEST PIPES FOR LEAKS PRIOR TO BACKFILLING.
6. FOLLOW PVC PIPING MANUFACTURER'S RECOMMENDATIONS FOR SNAKING BURIED PIPE TO COMPENSATE FOR THERMAL EXPANSION/CONTRACTION.
7. PLACE AND SURROUND PIPE(S) WITH A 6-INCH THICKNESS OF BACKFILL FREE OF ROCKS WITH A PARTICLE SIZE OF $\frac{1}{2}$ INCH OR LESS. CLEAN SAND IS PREFERRED.
8. PLACE BACKFILL IN 6- TO 8-INCH LOOSE LIFTS AND COMPACT BY HAND OR WITH A MECHANICAL TAMPER. PLACE A 12-INCH LOOSE LIFT ABOVE PIPE PRIOR TO BEGINNING COMPACTION. REMOVE LARGE OR SHARP ROCKS, FROZEN CLODS, AND OTHER DEBRIS GREATER THAN 2" IN DIAMETER.
9. PROVIDE AN UNYIELDING SURFACE ON THE FINAL LIFT OF THE BACKFILL PRIOR TO PAVING.

PIPING LEGEND

A	3/4"-DIA. PEX AIR LINE
E	1"-DIA. PVC ELECTRICAL CONDUIT LINE
W	1"-DIA. PEX WATER LINE

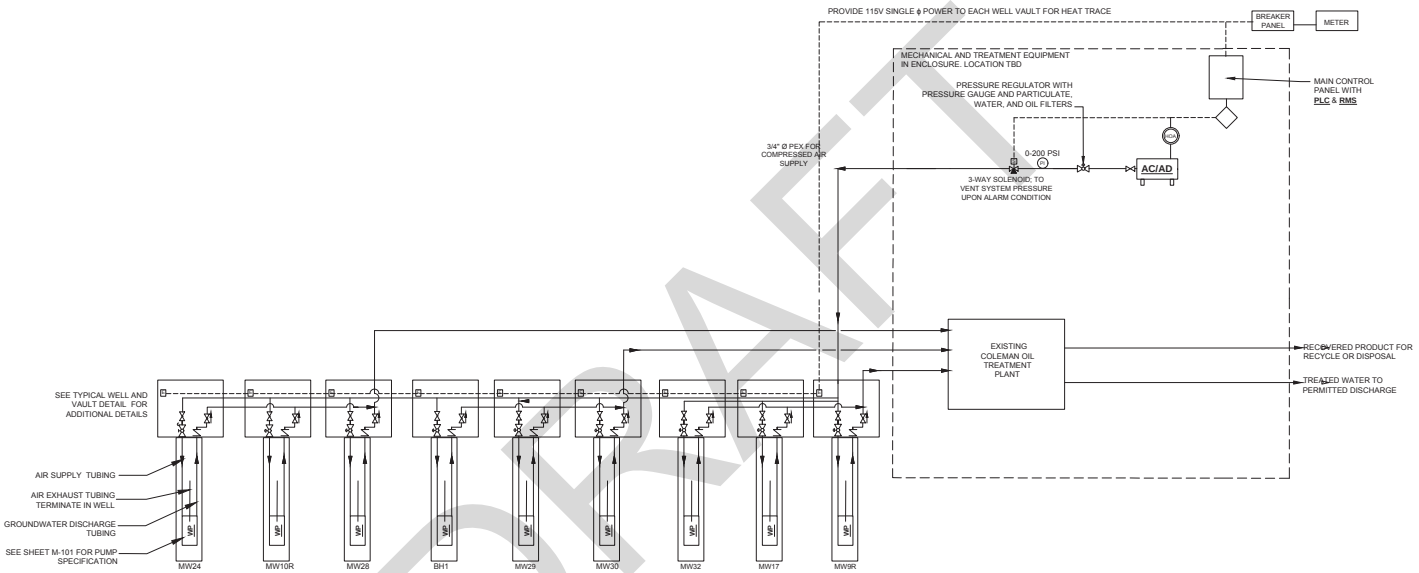
NOT TO SCALE

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

DATE: 10-11-18
DWN: MES/JJT
CHK: MES
APPROVED: MES
PRJ. MGR: CH
PROJECT NO: 2017-074

SHEET C-103
UTILITY TRENCH DETAILS

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.



MAJOR EQUIPMENT

AC	AIR COMPRESSOR
AD	AIR DRYER
PLC	PROGRAMMABLE LOGIC CONTROLLER
RMS	REM
WP	OTE MONITORING SYSTEM WELL PUMP

LEGEND

PI	PRESSURE INDICATOR
SP	SAMPLE PORT
TYP.	TYPICAL
HOA	HAND/OFF/AUTO SWITCH - CONTROL PANEL MOUNTED

- VALVE - NORMALLY OPEN
- VALVE NORMALLY CLOSED
- FILTER REGULATOR
- 3-WAY SOLENOID VALVE
- PRESSURE/VACUUM RELIEF VALVE
- CHECK VALVE

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SHEET M-100
PROCESS FLOW & INSTRUMENTATION

COLEMAN OIL COMPANY
3 CHEHALIS ST.
WENATCHEE, WA.

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EQUIPMENT; INSTRUMENTATION; AND WELL SCHEDULES

COLEMAN OIL GROUNDWATER RECOVERY SYSTEM;
(REFER TO SHEET M-100 FOR MAJOR EQUIPMENT ABBREVIATIONS)

EQUIPMENT SCHEDULE

- **AC/AD - AIR COMPRESSOR/AIR DRYER**
  CHAMPION PNEUMATIC L-SERIES ROTARY SCREW COMPRESSOR;
  7.5 HP AVAILABLE WITH EITHER 1ϕ 230V; OR 3ϕ 208/230V/460V
  TEFC MOTOR; EQUIPPED WITH ONBOARD REFRIGERANT DRYER
- **PLC - PROGRAMMABLE LOGIC CONTROLLER**
  DIRECT LOGIC DL205 OR EQUIVALENT
- **REMOTE MONITORING SYSTEM**
  TBD
- **WP- WELL PUMPS**
  SEE WELL AND PUMP SCHEDULE THIS SHEET FOR PUMP MODEL TO BE INSTALLED

INSTRUMENTATION SCHEDULE

PI - PRESSURE INDICATORS; RANGE AND UNITS SHOWN ON SHEET M-100

WELL AND PUMP SCHEDULE

WELL ID	DIAMETER INCHES	TOTAL DEPTH FT. BELOW TOC	SCREENED INTERVAL	WELL PUMP
MW09R	4	35	10-35'	QED; AP3T SHORT
MW10R	4	35	10-35'	QED; AP3T SHORT
BH-1	2	30	20-30'	QED; AP2T SHORT
MW17	4	29.75	9.52-29.52'	QED; AP2T SHORT
MW24	4	35	15-35'	QED; AP3T SHORT
MW28	4	40	15-40'	QED; AP3T SHORT
MW29	4	39.50	14.05-39.05'	QED; AP3T SHORT
MW30	4	40.12	14.67-39.67'	QED; AP3T SHORT
MW31	4	39.56	14.11-39.11'	NONE
MW32	4	34.40	8.95-33.95'	QED; AP3T SHORT

ABBREVIATIONS

ACFM = ACTUAL CUBIC FEET PER MINUTE
HP = HORSEPOWER
Hz = HERTZ
ϕ = ELECTRICAL PHASE
PSIG = POUNDS PER SQUARE INCH GAUGE
SCFM = STANDARD CUBIC FEET PER MINUTE
TBD = TO BE DETERMINED
TEFC = TOTAL ENCLOSED FAN COOLED
TOC = TOP OF CASING
V = ALTERNATING CURRENT VOLTAGE

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SHEET M-101
EQUIPMENT & INSTRUMENTATION SCHEDULE

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