Third Quarter 2022 Groundwater Monitoring Report

1655 Highway 101
Coos Bay, Oregon 97420
HydroCon Project Number: 2021-083-001
DEQ LUST No.: 06-16-0741, 06-15-1789 and 06-91-0096

Prepared for:

Marti Sharp
CECO, Inc.
3125 NW 35th Avenue
Portland, OR 97210

November 7, 2022

Prepared by:

HydroCon, LLC
314 W 15th Street, Suite 300 Vancouver, Washington 98660
Phone: (360) 703-6079 Fax: (360) 703-6086
www.hydroconllc.net

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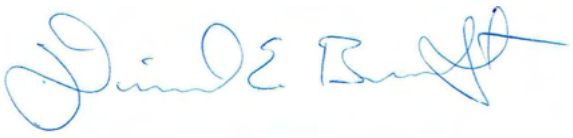
Coos Bay Pacific Pride
1655 Highway 101
Coos Bay, OR 97420

Prepared for:

CECO, Inc.
3125 NW 35th Avenue
Portland, Oregon 97228

HydroCon Project No: 2021-083-001

Prepared by:



Dan Becraft, R.G.
Senior Geologist

1.0 INTRODUCTION

This third quarter 2022 groundwater monitoring report has been prepared by HydroCon Environmental, LLC (HCE) on behalf of CECO, Inc., (CECO) to describe groundwater monitoring and hydrogeologic assessment activities conducted at 1655 Highway 101 in Coos Bay, Oregon (the Site; Figures 1 and 2). The Site is associated with Department of Environmental Quality (DEQ) leaking underground storage tank (LUST) numbers 06-16-0741, 06-15-1789 and 06-91-0096.

Previous site investigations identified the presence of elevated petroleum concentrations in soil and groundwater, and a sheen has been observed in a surface water drainage ditch that borders the Site to the east.

Groundwater monitoring and surface water observations were conducted consistent with the DEQ-approved work plan dated April 8, 2022 and DEQ comments presented in an email dated April 11, 2022.

2.0 BACKGROUND INFORMATION

The following section provides a summary of the Site location and description, geologic setting, and historical land use at the Site.

2.1 Site Description

The subject property is utilized as a Pacific Pride Cardlock. Two 6,000-gallon registered underground storage tanks (USTs), and one 10,000-gallon above-ground storage tank (AST) supply gasoline and diesel fuel to multiple cardlock operated dispensers, located beneath a canopy in the central portion of the property. The Oregon DEQ currently identifies the subject property as the Coos Bay Pac-Pride II (UST Facility ID 10858). The Site has two active and one closed LUST files associated with it as listed above.

2.2 Regulatory History

The following section summarizes the regulatory history of the Site and is based on the site history described in BB&A Environmental (BB&A) *Work Plan for Mitigating Surface Water Impact*[1]. A detailed site history is presented in that plan.

In September 1991, an underground release of diesel was discovered during the decommissioning of an underground piping system associated with a 10,000-gallon AST. In response, DEQ issued LUST 06-91-0096 which was closed in April 2003. The piping system and approximately 900 to 1000 cubic yards of soil with elevated levels of petroleum hydrocarbons were removed from the impacted area by Industrial Petroleum Equipment Company. In addition to the removal of piping and impacted soils, approximately 70 to 80 gallons of separate-phase product (diesel) and approximately 15 gallons of

[1] BB&A, 2016. *Work Plan for Mitigating Surface Water Impact, Coos Bay Pac-Pride II (Former Davis Oil Inc. Cardlock, 62590 S. Highway 101, Coos Bay, OR*. August 31, 2016.

"sludge" were removed from the excavation area. After cleanup activities were performed, new USTs were installed in the excavated area.

Assessment of residual contamination in soil and groundwater (including the installation of observation wells within the previously excavated area) was subsequently conducted by BB&A in October 1991. Results showed residual concentrations in soil above target cleanup levels at the time.

Subsequent groundwater sampling of observation wells OB-SE and OB-SW from 1991 to 1993, identified low levels of benzene, toluene, ethylbenzene, and xylene (BTEX) compounds as well as naphthalene. No polycyclic aromatic hydrocarbons (PAHs) were detected.

Additional characterization of residual diesel in soil and groundwater was conducted by BB&A in August of 2002. Investigation consisted of advancing six borings (P-1 through P-6) and soil/groundwater sampling and analysis. Diesel was identified at depths ranging from six to seven feet below ground surface (bgs) in P-1, P-2, and P-3 at concentrations of 4700, 3900, and 5500 mg/kg, respectively. Diesel concentrations were not detected in samples from borings P-4 through P-6. Additionally, a grab groundwater sample collected from P-2 showed low concentrations of BTEX compounds and various PAHs. The historical boring locations are shown on Figure 2. Based on the results, BB&A estimated that approximately 1,681 cubic yards of petroleum-containing soil (PCS) remained. The estimated remaining PCS is shown on BB&A's Figure 3 in Appendix A[2]. As shown on the figure, gasoline, diesel, and oil range hydrocarbons were detected in the residual soil with diesel being the primary component of residual petroleum.

On November 18, 2015, DEQ observed a sheen on water within a drainage ditch adjacent and east of the facility. The ditch receives water from the Site, in addition to several other properties to the north, south, and west, which are hydraulically connected to the ditch.

On May 17, 2016, a spill bucket associated with an onsite dispenser released a limited amount of gasoline, resulting in the removal of approximately 1.45 tons of PCS. No PCS was left in-place.

On September 5, 2017, DEQ again observed sheen in the drainage ditch.

In December 2021, HCE performed an investigation to assist in identifying the source of the sheen. Seven onsite borings (HC01 through HC07) were advanced to a depth of 15 feet bgs. Boring locations are shown on Figure 2. Grab soil and groundwater samples were collected from each location and three of the borings (HC01, HC02, and HC04) were converted to monitoring wells (MW01, MW02, and MW03, respectively). An additional groundwater sample was collected from an onsite tank basin observation well (OBS-NE-W). Grab soil sample analytical results showed concentrations of diesel-range petroleum hydrocarbons (DRPH) in four samples (HC03-6, HC04-5, HC06-6, and HC07-6) above RBCs for occupational and/or construction worker direct contact. Additionally, analytical results show

[2] BB&A, 2016. *Work Plan for Mitigating Surface Water Impact, Coos Bay Pac-Pride II (Former Davis Oil Inc. Cardlock, 62590 S. Highway 101, Coos Bay, OR*. August 31, 2016.

groundwater concentrations of DRPH, gasoline-range petroleum hydrocarbons (GRPH), and/or volatile organic compounds (VOCs) above the occupational direct contact RBC and at least one ecological RBC in every sample with the exception of HC05-W. Concentrations of PAHs in groundwater exceeded at least one ecological RBC in every sample with the exception of HC02-W and HC05-W.

2.3 Local Geology and Hydrogeology

The property is bordered by a seasonal creek (Brainard Creek) and Linton Avenue to the north, Highway 101 and Isthmus Slough on the east, and Carlisle Street to the south. Land use in the vicinity is primarily commercial with intermixed residential. The Site lies in an area of historically filled wetlands. Portions of the Site are subject to tidal flooding during heavy winter storms and tidal surges. The water table beneath the Site is shallow and tidally influenced.

The Site is located within the Coast range of the Pacific Border physiographic province. The Site is located along the north bank of the Isthmus Slough at an approximate elevation of 10 feet above mean sea level (MSL). Precipitation occurs mainly in the form of rain with an average of 56.82 inches per year. The geology of the Site has been determined by research of available published data and observations from bore hole cuttings during drilling at the Site. The Site is underlain by approximately five to eight feet of sands and silty sands overlying a black, silty clay deposit. The geology of the Site corresponds locally to the Coaledo Formation. Depth to groundwater ranges from 2.5 to 7 feet bgs as measured during the collection of groundwater samples from the tank pit observation well (various BB&A groundwater monitoring events 1991 to 1993.

3.0 QUARTERLY MONITORING ACTIVITIES

HCE performed the quarterly monitoring activities in compliance with the site-specific Health and Safety Plan, in accordance with rules established by the Occupational Safety and Health Administration (OSHA).

The third quarter 2022 quarterly groundwater monitoring was performed on August 30, 2022, consistent with the standard operating procedures (SOPs) presented in Appendix B. The work included two rounds of depth-to-water and surface-water elevation measurements and groundwater sampling. The LNAPL observations, depth-to-water measurements and groundwater sampling occurred within a 24-hour period with one gauging and sampling event correlated to the low tide that occurred at 10:03 am and high tide at 4:27 pm on August 30, 2022. The tidal chart from the National Oceanic and Atmospheric Administration (NOAA) is included as Appendix C.

Each event included both groundwater and surface-water monitoring and observations for the presence of LNAPL in site wells and the drainage ditch. The presence of LNAPL in wells was evaluated by using an oil/water interface probe in each monitoring well. Groundwater gauging included collecting depth-to-water measurements from monitoring wells MW01, MW02 and MW03 and observation wells OBS-NE, OBS-SE, OBS-NW and OBS-SW.

Surface water gauging was performed by measuring the depth-to-surface-water relative to the top of the metal tee post installed in the drainage ditch. In addition, the drainage ditch was observed for the presence of a LNAPL. The evaluation of LNAPL was conducted consistent with the Interstate Technology Regulatory Council LNAPL Update.

Groundwater samples were collected during the morning (low tide) by purging monitoring wells MW01, MW02, and MW03 using low-flow methodology (Appendix B). With consideration that the intent of the two sampling events is to collect groundwater samples at both high and low tides to evaluate if tidal effects result in significantly different hydrocarbon concentrations, the groundwater samples collected in the afternoon of August 30 (low tide) were grab samples collected using a peristaltic pump from the same depth in each monitoring well.

Groundwater samples were collected into laboratory-provided sample bottles, stored in a cooler packed with ice, and delivered under chain-of-custody protocol, to Apex Labs of Tigard, Oregon.

Samples were analyzed for the following:

- GRPH by Northwest Method NWTPH-Gx;
- DRPH and oil-range petroleum hydrocarbons (ORPH) by Northwest Method NWTPH-Dx;
- RBDM VOCs by EPA Method 826B; and
- PAHs by EPA Method 8270.

4.0 RESULTS

This section provides a summary of the LNAPL observations, water gauging and groundwater analytical results. Photographic documentation is included in Appendix D. Field forms from the quarterly monitoring activities are included in Appendix E. Copies of analytical laboratory reports and chain-of-custody documentation are included in Appendix F.

Groundwater Elevations and LNAPL

Groundwater elevations are presented in Table 1. Static water levels in the monitoring and observations wells ranged from 3.09 feet below top of casing (btoc) in monitoring well MW01 to 4.39 feet btoc in monitoring well MW03. A groundwater flow map from data collected from the low-tide sampling event is presented in Figure 4. Consistent with topography, the direction of groundwater flow is toward the east and the Isthmus Slough. The rate of groundwater recharge in well MW02 is slow and the well had not recovered from the morning purging and sampling, therefore a groundwater elevation map was not prepared from depth-to-water measurements collected during the high-tide sampling event.

LNAPL was not detected in any of the monitoring wells or observation wells using the oil/water interface probe.

Water Levels and LNAPL Observations in Drainage Ditch

The drainage ditch was observed for the presence of LNAPL at 8:30 am on August 30, one hour and thirty-three minutes before the 10:03 am low tide. At this time, water was not flowing from the drainage ditch to Brainard Creek, and standing water was observed in the ditch to the south of the adjacent telephone pole (Photos 1 and 2, Appendix D). Sheen was observed in mud and on the water surface in the southern quarter of the drainage ditch in the area of MW03. Sheen was not present in the remainder of the drainage ditch north of the MW03.

The southern portion of the drainage ditch where sheen is observed (MWO3 area), contains a substantial amount of organic-rich mud with decaying grasses, algae, and cattails and other plants. A section of PVC pipe was used to test if the sheen is biological. Two different locations were tested by poking the sheen with the PVC pipe, and at both locations the sheen broke into platelets and did not recoalesce, a response suggestive of a biological sheen rather than a petroleum sheen (Photos 3 through 7, Appendix D).

The drainage ditch was again observed at 5:30 on August 30, approximately one hour after the 4:27 pm high tide. No sheen was present on the water in the drainage ditch except in the same area observed earlier in the day (and during the May 2022 drainage ditch observations), the area between MW01 and MW03 extending to the southern end of the ditch.

The drainage ditch was observed at 9:00 am on August 31, approximately one hour and thirty-four minutes prior to the 10:34 am low tide. The ditch observations were similar to the previous low tide event, where no surface water was flowing from the drainage ditch and sheen was only observed in the standing water in the area of MW03 extending to the southern end of the ditch. A patch of sheen was again tested by breaking it up with the length of PCV, and the sheen again broke into platelets and did not recoalesce.

Groundwater Analytical Results and Risk

Groundwater analytical results are reported as micrograms per liter (µ/L) and are summarized in Tables 2 and 3 and presented on Figure 5.

DRPH were detected in samples collected from each well, at similar concentrations between high- and low-tide sampling events. The only RBCs exceeded for DRPH were for ecological chronic exposures for fresh and saltwater, and the occupational ingestion and inhalation from tapwater pathway in all samples from each monitoring well.

Relatively low concentrations of GRPH were detected in the samples collected from MW01 and MW03. GRPH were not detected above the MRLs in samples collected from MW02. The RBCs were slightly exceeded for DRPH for ecological chronic exposures for freshwater, and the occupational ingestion

and inhalation from tap water pathway, in samples from wells MW01 and MW03 from the August 30 high-tide sampling event.

Relatively low concentrations of three VOCs were detected in samples collected from MW01, and one VOC in the sample collected from MW02. The only RBC exceeded for VOCs was for benzene, for the occupational ingestion and inhalation from tapwater pathway, in samples collected from MW01.

The analytical results for PAHs indicate relatively low concentrations of PAHs were detected in samples from each well. The only RBCs exceeded for PAHs were for 1-Methylnaphthalene and 2-Methylnaphthalene in the samples collected from MW01 for the ecological chronic exposure for freshwater, and for phenanthrene in the low-tide sample collected from well MW02.

5.0 DISCUSSION AND RECOMMENDATIONS

The data from the 3rd quarter are consistent with the results of the 2nd quarter, and include the following observations:

1) The analytical results do not vary substantially between high and low tide sampling events.
2) No product thickness has been observed in the monitoring or observation wells.
3) No non-biologic sheens have been observed discharging from the Site to the drainage ditch.
4) The depth-to-water measurements do not indicate the groundwater elevation at the Site is readily influenced by tidal changes. Between high and low tides, the depth-to-water measurements have varied by only a few hundredths of a foot, or have remained identical. The slow or negligible response of water levels at the Site indicate a lower hydraulic conductivity of the shallow sand layer than originally anticipated. This observation contradicts the background information in the BB&A work plan which states: “the water table fluctuates daily and is greatly influenced by the tides.”

In addition to the apparent lower hydraulic conductivity of the sand layer, the hydraulic conductivity in the area of monitoring well MW02 is lower than in the areas of monitoring wells MW01 and MW03, as evidenced by continuous drawdown of the water level in MW02 and slow recharge during low-flow sampling. The HC02/MW02 boring log shows lithology around the well is silty sand rather than sand above the underlying marine silt. In addition, review of the boring logs for MW02 and HCO5 indicate the top of the marine silt is shallower in the northeast corner of the site. The lower hydraulic conductivity in the northeast portion of the Site also explains why the tidal changes do not significantly influence water level in MW02, and why the direction of groundwater flow is not toward the northeast and Brainard Creek, as might be expected.

Also consistent with the drainage ditch observations from the 2nd quarter, sheen (interpreted to be biologic in nature) was observed in the southern portion of the drainage ditch. There have been no verifiable seepages of sheen from the Site to the drainage ditch water, only observations of sheen on organic-rich mud and floating on the surface water. When the sheen was disturbed using a length of PVC piping, it broke into platelets indicative if a biological sheen. There was no petroleum odor noted from the sheen.

The biologic nature of the sheen is also supported by drainage ditch observations that indicate water can stagnate in the southern end of the drainage ditch. The elevation of the bed of the drainage ditch is higher at the northern end than the southern portion of the drainage ditch, as evidenced by the lack of water draining from the ditch at low tide on August 22 (Photo 1), and the modest outflows observed at low tide during the 2nd quarter, and the December 2021 site investigation (Photo 8).

Some groundwater samples collected during the December 21, 2021 site investigation indicate a positive sample bias due to subsurface disturbance and turbidity associated with direct-push drilling methods and sampling of temporary wells. The diesel-range hydrocarbons detected in the investigation sample from the temporary well in boring HCO4 (156,000 µ/L), were almost two orders of magnitude higher than the quarterly monitoring results from MW03 (1,830 µ/L – 2,590 µ/L), the permanent well installed in that boring. Elevated diesel-range concentrations inconsistent with the quarterly monitoring results were also detected in samples from HC03, HC06 and HC07.

Residual LNAPL at the Site does not appear to be migrating and does not appear to be contributing to the biological sheen observed in the drainage ditch. This is supported by: (1) variations in groundwater concentrations between the initial investigation and quarterly monitoring events; (2) lack of measurable product thickness in the on-Site wells; (3) direct LNAPL seeps have not been observed in the drainage ditch; and (4) sheen in the ditch appears to be biological in nature and associated with organic-rich mud and decaying vegetation.

Based on the results of the 2nd and 3rd quarter monitoring events, HydroCon recommends discontinuing the low and high tide sampling, with only one round of samples to be collected during future quarterly monitoring events.

6.0 QUALIFICATIONS

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

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

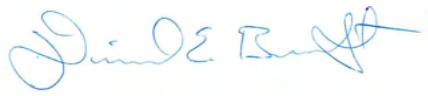
This report is intended for the sole use of **CECO**. This report may not be used or relied upon by any other party without the written consent of HydroCon. The scope of services performed in execution of

this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

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

Signature:

Report Prepared By:



Daniel Becraft , RG
Senior Geologist

Review By:

Chris Sheridan, RG
Senior Geologist

HydroCon

Table 1
Summary of Groundwater and Surface Water Elevations
CECO Pacific Pride
1655 Highway 101
Coos Bay, Oregon

Well Identification	Date	Time	Tide/ Peak Tide Time	Elevation Top of Casing [1] (feet)	Depth to LNAPL (feet below top of casing)	Depth to Water (feet below top of casing)	LNAPL Thickness (feet)	Groundwater Elevation (feet MSL)
MW01*	5/19/2022	1519	H/1753	9.79	---	1.90	---	7.89
	5/19/2022	1808	H/1753		---	1.89	---	7.90
	5/20/2022	1112	L/1155		---	1.90	---	7.89
	8/30/2022	0903	L/1003		---	3.09	---	6.70
	8/30/2022	1610	H/1627		---	3.06	---	6.73
MW02	5/19/2022	1515	H/1753	9.08	---	2.62	---	6.46
	5/19/2022	1804	H/1753		---	2.66	---	6.42
	5/20/2022	1108	L/1155		---	2.81	---	6.27
	8/30/2022	1108	L/1003		---	3.22	---	5.86
	8/30/2022	1612	H/1627		---	5.41	---	3.67
MW03	5/19/2022	1522	H/1753	9.92	---	3.66	---	6.26
	5/19/2022	1810	H/1753		---	3.64	---	6.28
	5/20/2022	1116	L/1155		---	3.69	---	6.23
	8/30/2022	910	L/1003			4.39	---	5.53
	8/30/2022	1615	H/1627		---	4.39	---	5.53
OBS-NW	5/19/2022	1525	H/1753	10.00	---	1.91	---	8.09
	5/19/2022	1816	H/1753		---	1.93	---	8.07
	5/20/2022	1120	L/1155			1.91	---	8.09
	8/30/2022	926	L/1003			3.21	---	6.79
	8/30/2022	1602	H/1627		---	3.21	---	6.79
OBS-SW	5/19/2022	1529	H/1753	10.14	---	2.03	---	8.11
	5/19/2022	1814	H/1753		---	2.08	---	8.06
	5/20/2022	1122	L/1155			2.04	---	8.10
	8/30/2022	930	L/1003			3.31	---	6.83
	8/30/2022	1608	H/1627		---	3.31	---	6.83
OBS-NE	5/19/2022	1527	H/1753	10.30	---	2.35	---	7.95
	5/19/2022	1818	H/1753		---	2.31	---	7.99
	5/20/2022	1130	L/1155			2.31	---	7.99
	8/30/2022	923	L/1003			3.60	---	6.70
	8/30/2022	1600	H/1627		---	3.61	---	6.69
OBS-SE	5/19/2022	1530	H/1753	10.24	---	2.27	---	7.97
	5/19/2022	1813	H/1753		---	2.29	---	7.95
	5/20/2022	1126	L/1155			2.29	---	7.95
	8/30/2022	0921	L/1003		---	3.56	---	6.68

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Well Identification	Date	Time	Tide/ Peak Tide Time	Elevation Top of Casing [1] (feet)	Depth to LNAPL (feet below top of casing)	Depth to Water (feet below top of casing)	LNAPL Thickness (feet)	Groundwater Elevation (feet MSL)
	8/30/2022	1604	H/1627		---	3.54	---	6.70
Drainage Ditch	5/19/2022	1800	H/1753	9.36	---	3.67	---	5.69
	5/20/2022	1126	L/1155			4.24	---	5.12
	8/30/2022	0915	L/1003			3.90	---	5.46
	8/30/2022	1618	H/1627		---	3.90	---	5.46

NOTES:

- - - denotes no LNAPL present

LNAPL = light non-aqueous phase liquid

NM = not measured.

H = High Tide

L = Low Tide

* May 2022 measurements adjusted by 0.05' to account for wellhead modification after depth-to-water measurments but prior to survey.

L = Low Tide

* May 2022 measurements adjusted by 0.05' to account for wellhead modification prior to survey.

NM = not measured.

Table 2
Summary of Groundwater Analytical Data - TPH and VOCs
CECO Pacific Pride
1655 Highway 101
Coos Bay, Oregon

Sample ID	Sample Date	TPH			VOCs										
		Diesel	Oil	Gasoline Range Organics	Benzene	Toluene	Ethylbenzene	Xylenes, total	Methyl tert-butyl ether (MTBE)	Naphthalene	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	Isopropylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
Micrograms per liter (ug/l)															
MW01	05/19/22	**1,210**	< 151	**374**	**3.68**	< 1.00	< 0.500	< 1.50	**1.23**	< 2.00	< 0.500	< 0.500	**1.02**	< 1.00	< 1.00
	05/20/22	**1,460**	< 151	**146**	**1.88**	< 1.00	< 0.500	< 1.50	**3.10**	< 2.00	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	08/30/22	**3,900**	< 158	**368**	**7.31**	< 1.00	< 0.500	< 1.50	**4.25**	< 2.00	< 0.500	< 0.500	**1.02**	< 1.00	< 1.00
	08/30/22	**3,060**	< 158	**480**	**9.59**	< 1.00	< 0.500	< 1.50	**4.35**	< 2.00	< 0.500	< 0.500	1.03	< 1.00	< 1.00
MW02	05/19/22	**786**	< 151	< 100	< 0.200	< 1.00	< 0.500	< 1.50	**1.97**	< 2.50	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	05/20/22	**850**	< 178	**108**	< 0.200	< 1.00	< 0.500	< 1.50	**2.75**	< 2.00	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	08/30/22	**849**	< 157	< 100	< 0.200	< 1.00	< 0.500	< 1.50	**2.29**	< 2.00	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	08/30/22	**871**	< 151	< 100	< 0.200	< 1.00	< 0.500	< 1.50	**2.92**	< 2.00	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
MW03	05/19/22	**1,830**	< 151	< 100	< 0.200	< 1.00	< 0.500	< 1.50	< 1.00	< 2.00	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	05/20/22	**2,000**	< 151	< 100	< 0.200	< 1.00	< 0.500	< 1.50	< 1.00	< 0.200	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	08/30/22	**2,420**	< 152	**350**	< 0.200	< 1.00	< 0.500	< 1.50	< 1.00	< 0.200	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
	08/30/22	**2,590**	< 158	**489**	< 0.200	< 1.00	< 0.500	< 1.50	< 1.00	< 0.200	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
DUP-MW01	05/20/22	--	--	**276**	**4.33**	< 1.00	< 0.500	< 1.50	**2.19**	< 2.00	< 0.500	< 0.500	**4.50**	< 1.00	< 1.00
	08/30/22	--	--	**431**	**8.37**	< 1.00	< 0.500	< 1.50	**4.73**	< 2.00	< 0.500	< 0.500	**4.50**	< 1.00	< 1.00
Trip Blank	05/20/22	--	--	< 100	< 0.200	< 1.00	< 0.500	< 1.50	< 1.00	< 2.00	< 0.500	< 0.500	< 1.00	< 1.00	< 1.00
Oregon Risk Based Concentrations (RBCs)															
Eco. RBCfrcr (freshwater)		**640**	--	**440**	160	62	61	27	730	21	--	2,000	4.8	15	26
Eco. RBCfrac (freshwater)		--	--	--	*700*	*560*	*550*	*240*	*6,500*	*170*	--	*8,200*	*43*	*140*	*230*
Eco. RBCsacr (saltwater)		**640**	--	3,700	110	220	25	260	5,000	1.4	--	5,600	98	56	56
Eco. RBCsaac (saltwater)		--	--	--	1,700	950	8,800	1,100	38,000	780	--	11,000	550	370	370
Occ. RBCgw (I&I)		**430**	430	**450**	**2.1**	6,300	6.4	830	68	0.72	0.034	0.78	2,000	250	280
Ex. RBCgw		>S	>S	14,000	1,800	220,000	4,500	23,000	63,000	500	27	630	51,000	6,300	7,500

Notes:

Bolded values indicate a detection above method reporting limits

Bolded, red values indicate reported concentration exceeds corresponding DEQ RBC.

-- = not analyzed or not available.

>Max=The constituent RBC for this pathway is greater than 1,000,000 mg/l.

GRO = Gasoline range organics.

DRO = Diesel range organics.

ORO = Oil range organics.

Eco. RBCfrcr = Ecological Chronic Exposure RBC (freshwater)

Eco. RBCfrac = Ecological Acute Exposure RBC (freshwater)

Eco. RBCsacr = Ecological Chronic Exposure RBC (saltwater)

Eco. RBCsaac = Ecological Acute Exposure RBC (saltwater)

Occ. RBCgw (I&I) = Occupational Ingestion & Inhalation from tapwater

Ex. RBCgw = Groundwater in Excavations RBC

OBS-5=Duplicate of MW01

Table 3
Summary of Groundwater Analytical Data - PAHs
CECO Pacific Pride
1655 Highway 101
Coos Bay, Oregon

Sample ID	Sample Date	PAHs																		
		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	Dibenzofuran
Micrograms per liter (ug/l)																				
MW01	05/19/22	< 0.916	< 0.271	< 0.196	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	**0.0394**	**1.82**	< 0.0374	**17.1**	**6.22**	< 0.0374	**0.784**	**0.0473**	**0.844**
	05/20/22	< 1.04	< 0.217	< 0.0755	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	**0.0377**	**2.30**	< 0.0377	**21. 6**	**5.52**	< 0.321	**1.6**	**0.0497**	**1.09**
	08/30/22	< 0.943	< 0.189	< 0.330	**0.0378**	< 0.0377	< 0.0377	< 0.0377	< 0.0377	**0.0630**	< 0.0377	**0.142**	**2.18**	< 0.0377	**13.5**	**5.09**	< 0.283	**2.51**	**0.0398**	**0.971**
	08/30/22	< 1.06	< 0.288	< 0.0962	< 0.0385	< 0.0385	< 0.0385	< 0.0385	< 0.0385	< 0.0385	< 0.0385	**0.0731**	**2.42**	< 0.0385	**21. 1**	**7.31**	< 0.321	**1.6**	**0.0497**	**1.09**
MW02	05/19/22	< 0.0909	< 0.0404	< 0.0404	< 0.0404	< 0.0404	< 0.0404	< 0.0404	< 0.0404	< 0.0404	< 0.0404	**0.0379**	**0.198**	< 0.0404	< 0.0808	< 0.0808	< 0.0808	< 0.0404	< 0.0404	< 0.0404
	05/20/22	< 0.150	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	< 0.0374	**0.0380**	**0.387**	< 0.0374	< 0.0748	< 0.0748	< 0.0841	< 0.0374	< 0.0374	0.0486
	08/30/22	**0.412**	< 0.0381	< 0.0381	< 0.0381	< 0.0381	< 0.0381	< 0.0381	< 0.0381	< 0.0381	< 0.0381	< 0.0381	**0.0996**	< 0.0381	< 0.0762	< 0.0762	< 0.0762	< 0.0381	< 0.0381	0.0486
	08/30/22	0.113	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< 0.0377	< **0.0377**	**0.197**	< 0.0374	< 0.0748	< 0.0748	< 0.0841	< 0.0374	< 0.0374	**0.0486**
MW03	05/19/22	< 1.33	< 0.347	< 0.0918	< 0.0408	< 0.0408	< 0.0408	< 0.0408	< 0.0408	< 0.0408	< 0.0408	< **0.0383**	**3.31`**	< 0.0408	< **5.87`**	< 0.0816	< 0.378	**1.37**	**0.0551**	**1.15**
	05/20/22	< 0.938	< 0.289	< 0.0722	< 0.0412	< 0.0412	< 0.0412	< 0.0412	< 0.0412	< 0.0412	< 0.0412	< **0.0384**	**2.48**	< 0.0412	**4.04**	< 0.0825	< 0.320	**1.05**	< 0.0412	**0.826**
	08/30/22	< 1.30	< 0.50	< 0.0700	< 0.0400	< 0.0400	< 0.0400	< 0.0400	< 0.0400	< 0.0400	< 0.0400	< 0.0400	**3.14**	< 0.0400	**2.16**	< 0.0800	< 0.450	**1.35**	**0.0531**	**1.04**
	08/30/22	< 1.29	< 0.347	< 0.0792	< 0.0396	< 0.0396	< 0.0396	< 0.0396	< 0.0396	< 0.0396	< 0.0396	< 0.0396	**3.33**	< 0.0396	**2.36**	**0.118**	< 0.366	**1.61**	**0.0701**	**1.07**
Oregon Risk Based Concentrations (RBCs)																				
Eco. RBCfrcr (freshwater)		*15*	*13*	*0.02*	*4.7*	*0.06*	*2.6*	*0.06*	*0.012*	*4.7*	*0.012*	*0.8*	*19*	*0.012*	*6.1*	*4.7*	*21*	*2.3*	*4.6*	4
Eco. RBCfrac (freshwater)		*19*	*120*	*0.18*	*42*	*0.54*	*23*	*1.3*	*0.19*	*42*	*0.28*	*3.7*	*110*	*0.27*	*110*	*42*	*170*	*31*	*42*	36
Eco. RBCsacr (saltwater)		15	28	0.43	0.35	0.02	0.06	0.06	0.012	0.35	0.01	0.82	24	0.012	52	52	1.4	4.6	0.11	61
Eco. RBCsaac (saltwater)		320	290	1.80	4.60	0.64	1.40	1.30	0.19	4.20	0.28	3.40	82	0.27	160	150	780	7.7	0.45	240
Occ. RBCgw (I&I)		2,500	--	>S	0.38	0.47	>S	>S	--	>S	0.47	>S	1,300	>S	--	--	0.72	--	>S	--
Ex. RBCgw		>S	>S	>S	>S	>S	>S	>S	--	>S	>S	>S	>S	>S	--	--	500	--	>S	--

Notes:

Bolded values indicate a detection above method reporting limits.

Bolded, red values indicate reported concentration exceeds corresponding DEQ RBC.

-- = not analyzed or not available.

>Max=The constituent RBC for this pathway is greater than 1,000,000 mg/l.

GRO = Gasoline range organics.

DRO = Diesel range organics.

ORO = Oil range organics.

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Eco. RBCfrac = Ecological Acute Exposure RBC (freshwater)

Eco. RBCsacr = Ecological Chronic Exposure RBC (saltwater)

Eco. RBCsaac = Ecological Acute Exposure RBC (saltwater)

Occ. RBCgw (I&I) = Occupational Ingestion & Inhalation from tapwater

Ex. RBCgw = Groundwater in Excavations RBC

NOTE(S):

USGS, COOS BAY QUADRANGLE
OREGON - COOS COUNTY
7.5 MINUTE SERIES (TOPOGRAPHIC)

0 2000 4000

SCALE IN FEET
1" = 2000'

N
W E
S

HydroCon
314 W 15th Street, Suite 300, Vancouver, Washington 98660
Phone 360.703.6079 Fax 360.703.6086

DATE: 7-26-2022
DWN: MW
CHK: DB
APPROVED: DB
PRJ. MGR: CS
PROJECT NO: 2021-083.001

FIGURE 1
SITE LOCATION MAP
3Q2022 GROUNDWATER MONITORING REPORT
CARSON - PACIFIC PRIDE CARDLOCK
1655 U.S. HIGHWAY 101
COOS BAY, OREGON

S:\2021 Projects\2021-083 Carson Oil Projects\2021-083.001 Carson Coos Bay Pac Pride\Figures\CAD\2021-083.001.dwg

Legend

GP1	Soil Sample Location and Identification (PNE, 2016)
SSD-1	Surface Soil Ditch Sidewall Sample Location and Identification (PNE, 2016)
P1	Push Probe Location and Identification (BB&A, 2002)
B-1	Soil Boring Location and Identification (BB&A, 1991)
OBS-SW	Observation Well
— —	Subject Site Property Boundary (Approximate)

N W E S

0 30 60

SCALE IN FEET
1" = 30'

HydroCon
314 W 15th Street, Suite 300, Vancouver, Washington 98660
Phone 360.703.6079 Fax 360.703.6086

DATE: 7-27-2022
DWN: MW
CHK: DB
APPROVED: CS
PRJ. MGR: CS
PROJECT NO: 2021-083.001

FIGURE 2
SITE FEATURES AND HISTORICAL SOIL BORINGS
3Q2022 GROUNDWATER MONITORING REPORT
CARSON - PACIFIC PRIDE CARDLOCK
1655 U.S. HIGHWAY 101
COOS BAY, OREGON

S:\2021 Projects\2021-083 Carson Oil Projects\2021-083.001 Carson Coos Bay Pac PrideFigures\CAD\2021-083.001.dwg

SITE

GP8
GP7
HC05
HC02/MW02
P1
GP12
B-5
GP6
B-6
SSD-3
HC01/MW01
Extent of Historical Excavation (Approximate)
Canopy/Pump Islands
GP10
HC03
OBS-NW
OBS-NE
GP5
OBS-SW
OBS-SE
SSD-2
P5
B-4
10,000 Gal. Diesel AST
B-2
GP9
P2
HC06
GP13
HC07
GP4
B-1
B-3
GP11
SSD-1
Drainage Ditch
P4
P3
HC04/MW03
GP3
GP1
P6
Drainage Ditch
GP2

U.S. Highway 101

Legend

HC03	Boring Location and Identification (HydroCon, 2021)
HC01/MW01	Monitoring Well and Identification (HydroCon, 2021)
	Drainage Ditch Gauging Location
GP1	Soil Sample Location and Identification (PNE, 2016)
SSD-1	Surface Soil Ditch Sidewall Sample Location and Identification (PNE, 2016)
P1	Push Probe Location and Identification (BB&A, 2002)
B-1	Soil Boring Location and Identification (BB&A, 1991)
OBS-SW	Observation Well
— —	Subject Site Property Boundary (Approximate)

N W E S

0 30 60

SCALE IN FEET
1" = 30'

HydroCon
314 W 15th Street, Suite 300, Vancouver, Washington 98660
Phone 360.703.6079 Fax 360.703.6086

DATE: 7-27-2022
DWN: MW
CHK: DB
APPROVED: CS
PRJ. MGR: CS
PROJECT NO: 2021-083.001

FIGURE 3
MONITORING WELL LOCATIONS
3Q2022 GROUNDWATER MONITORING REPORT
CARSON - PACIFIC PRIDE CARDLOCK
1655 U.S. HIGHWAY 101
COOS BAY, OREGON

S:\2021 Projects\2021-083 Carson Oil Projects\2021-083.001 Carson Coos Bay Pac Pride\Figures\CAD\2021-083.001.dwg

SITE

HC02/MW02
5.86'

HC01/MW01
6.70'

HC03

HC04/MW03
5.53'

HC05

HC06

HC07

Drainage Ditch
5.46'

OBS-NW
6.79'

OBS-NE
6.70'

OBS-SW
6.83'

OBS-SE
6.68'

GP1 GP2 GP3 GP4 GP5 GP6 GP7 GP8 GP9 GP10 GP11 GP12 GP13

P1 P2 P3 P4 P5 P6

B-1 B-2 B-3 B-4 B-5 B-6

SSD-1 SSD-2 SSD-3

6.75'

6.25'

Canopy/Pump Islands

Extent of Historical Excavation (Approximate)

10,000 Gal. Diesel AST

Drainage Ditch

U.S. Highway 101

Legend

HC03	Boring Location and Identification (HydroCon, 2021)
HC01/MW01	Monitoring Well and Identification (HydroCon, 2021)
	Drainage Ditch Gauging Location
6.83'	Groundwater Elevation (08/30/2022)
	Groundwater Elevation Contour (08/30/2022)
	Inferred Groundwater Flow Direction (08/30/2022)
GP1	Soil Sample Location and Identification (PNE, 2016)
SSD-1	Surface Soil Ditch Sidewall Sample Location and Identification (PNE, 2016)
P1	Push Probe Location and Identification (BB&A, 2002)
B-1	Soil Boring Location and Identification (BB&A, 1991)
OBS-SW	Observation Well
	Subject Site Property Boundary (Approximate)

N W E S

0 30 60

SCALE IN FEET
1" = 30'

HydroCon
314 W 15th Street, Suite 300, Vancouver, Washington 98660
Phone 360.703.6079 Fax 360.703.6086

DATE: 10-13-22
DWN: LC
CHK: DB
APPROVED: DB
PRJ. MGR: DB
PROJECT NO: 2021-083.001

FIGURE 4
GROUNDWATER ELEVATION CONTOURS - AUGUST 30, 2022
3Q2022 GROUNDWATER MONITORING REPORT
CARSON - PACIFIC PRIDE CARDLOCK
1655 U.S. HIGHWAY 101
COOS BAY, OREGON

S:\2021 Projects\2021-083 Carson Oil Projects\2021-083.001 Carson Coos Bay Pac Pride\Figures\CAD\2021-083.001_REV02.dwg

APPENDIX A

BB&A FIGURES

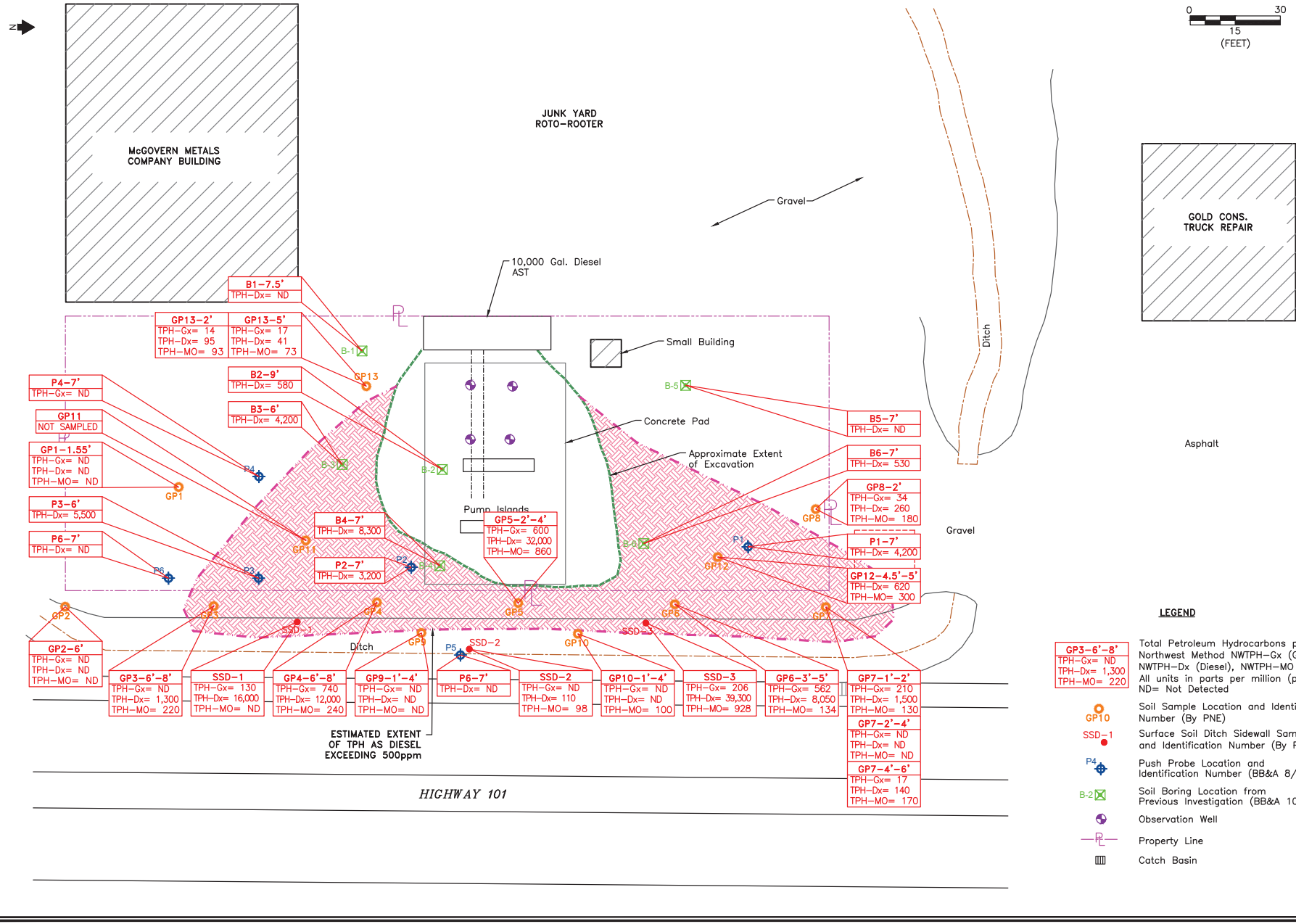


FIGURE #: 3

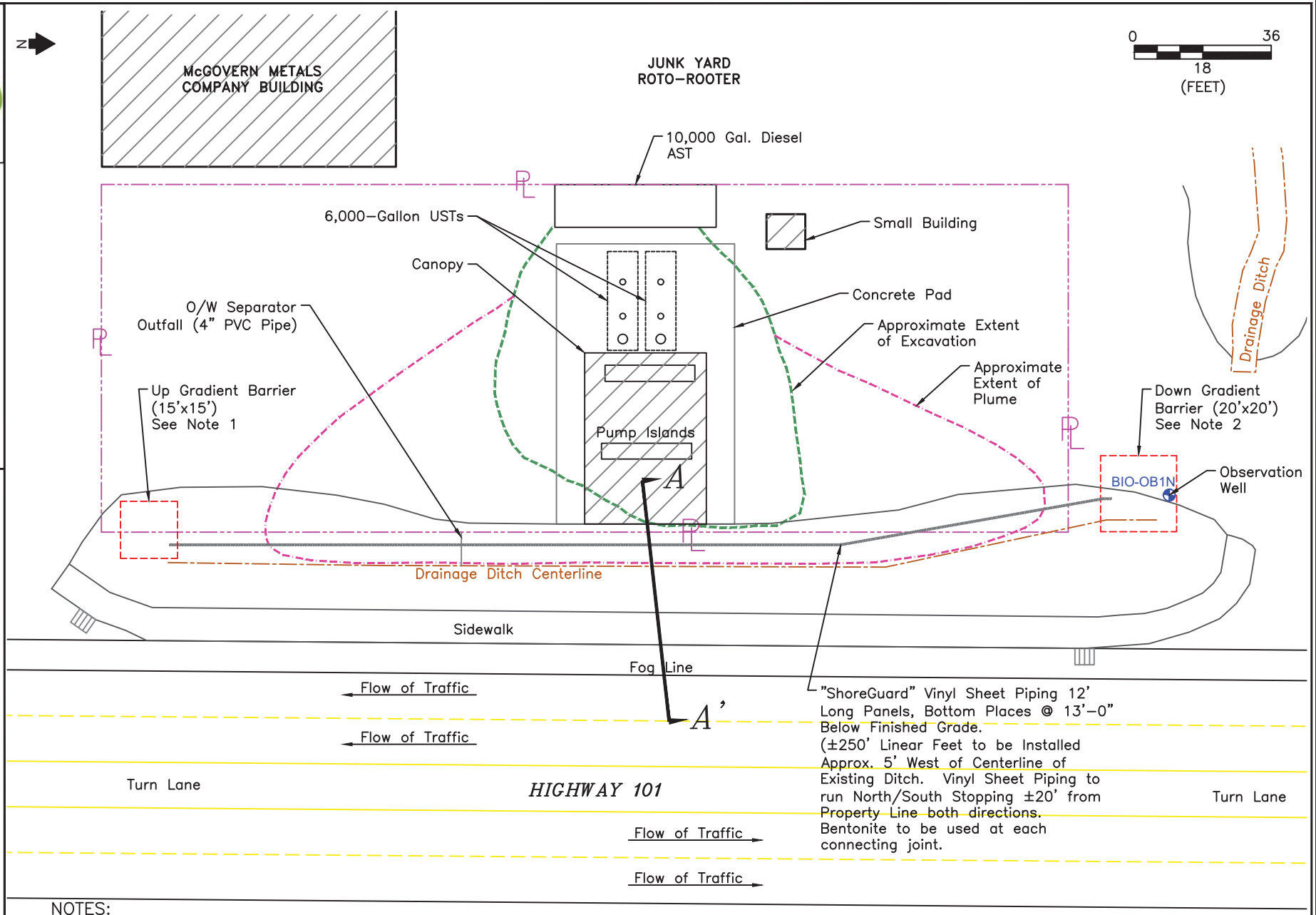
SITE PLAN SHOWING ALL ANAYTICAL DATA
COOS BAY PAC-PRIDE II (Former Davis Oil Inc., Cardlock)
62590 S. HIGHWAY 101, COOS BAY, OREGON

PROJECT CODE: PNE01MAG.16UC
DATE: 08/30/16
SCALE: AS SHOWN
DRAWN: K.D.DESIGNS
CHECKED: RANDALL BOESE

EUGENE OFFICE
32866 Roberts Ct.
Coburg, OR
ph: 541.464.9484

PORTLAND OFFICE
25195 SW Parkway Ave.,#207
Wilsonville, OR
ph: 503.570.9484

www.BBAENV.COM
BB&A ENVIRONMENTAL



NOTES:

1. Up Gradient Barrier (Near GP-4):

DRO (Soil) – GP4-GP2:	12,000 mg/kg (ppm) to ND
GW Flow Direction:	North/East
Barrier Excavation Size:	~15'x15' (225sq.ft.)
BOS-200 Application:	600 Pounds
Supplemental Sulfate:	300 Pounds

2. Up Gradient Barrier (Near GP-7):

DRO (Soil) – GP4-GP2:	15,000 mg/kg (ppm) to 1,500ppm
GW Flow Direction:	North/East
Barrier Excavation Size:	~20'x20' (400sq.ft.)
BOS-200 Application:	2,000 Pounds
Supplemental Sulfate:	700 Pounds
Bacteria Concentrate:	1.5/3.5 = 5.0 Gallons

3. BOS-200 and Bacteria Concentrate will be applied in multiple batches and spray applies to up gradient and down gradient barrier in lifts (3'-4', 4'-5', 5'-6', 6'-7' & 7'-8'). between one (1) and three (3) feet BLS mix in gypsum (Supplemental Sulfate). BOS-200, Gypsum, and Bacteria Concentrate in water will be sprayed on the material into each lift as soil is mechanically mixed with an excavator. Install Observation Well BIO-OB1N.

BB&A ENVIRONMENTAL

EUGENE OFFICE
32986 Roberts Ct.
Coburg, OR
ph: 541.484.9484

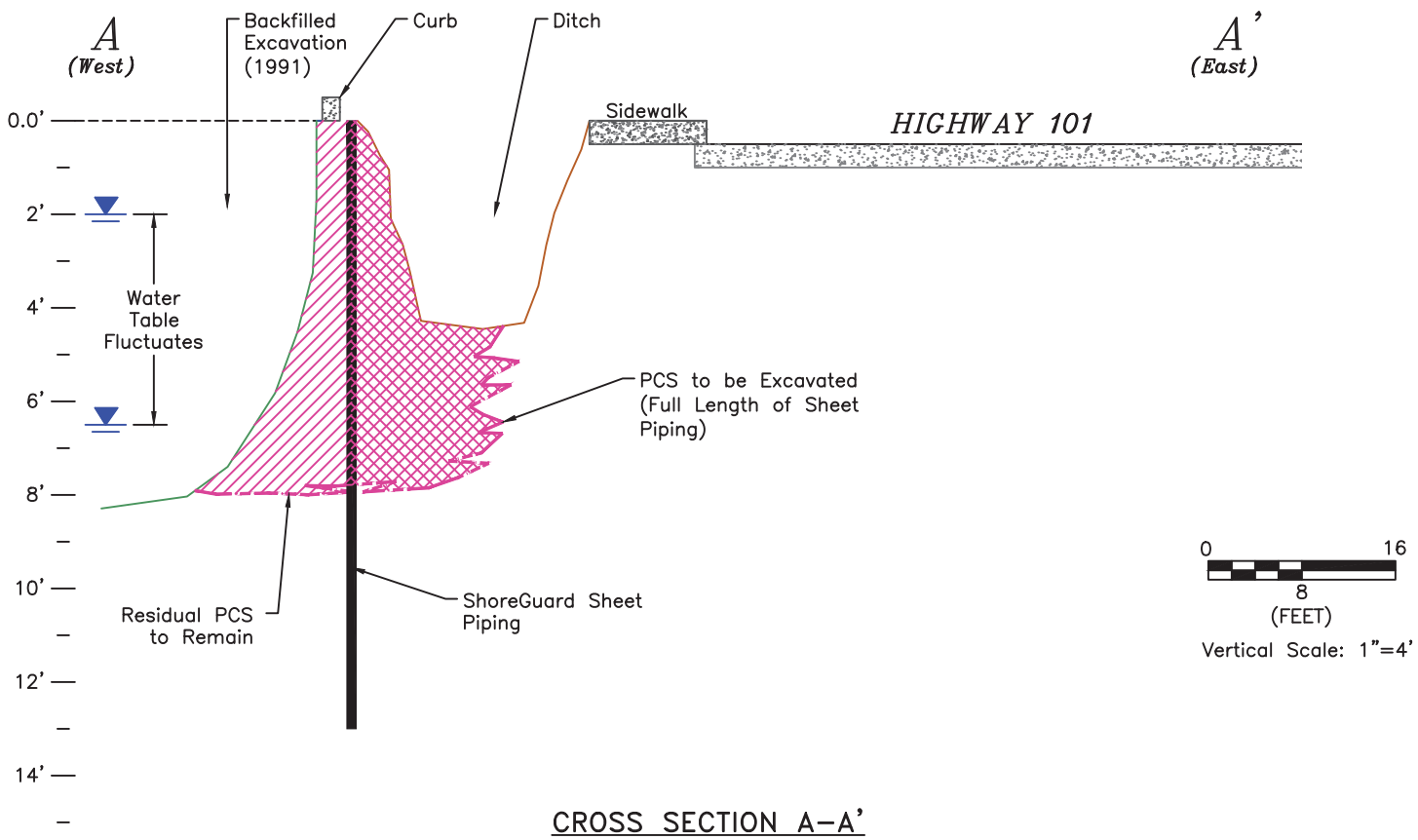
PORTLAND OFFICE
25195 SW Parkway Ave.,#207
Wilsonville, OR
ph: 503.570.9484

www.BBAENV.COM

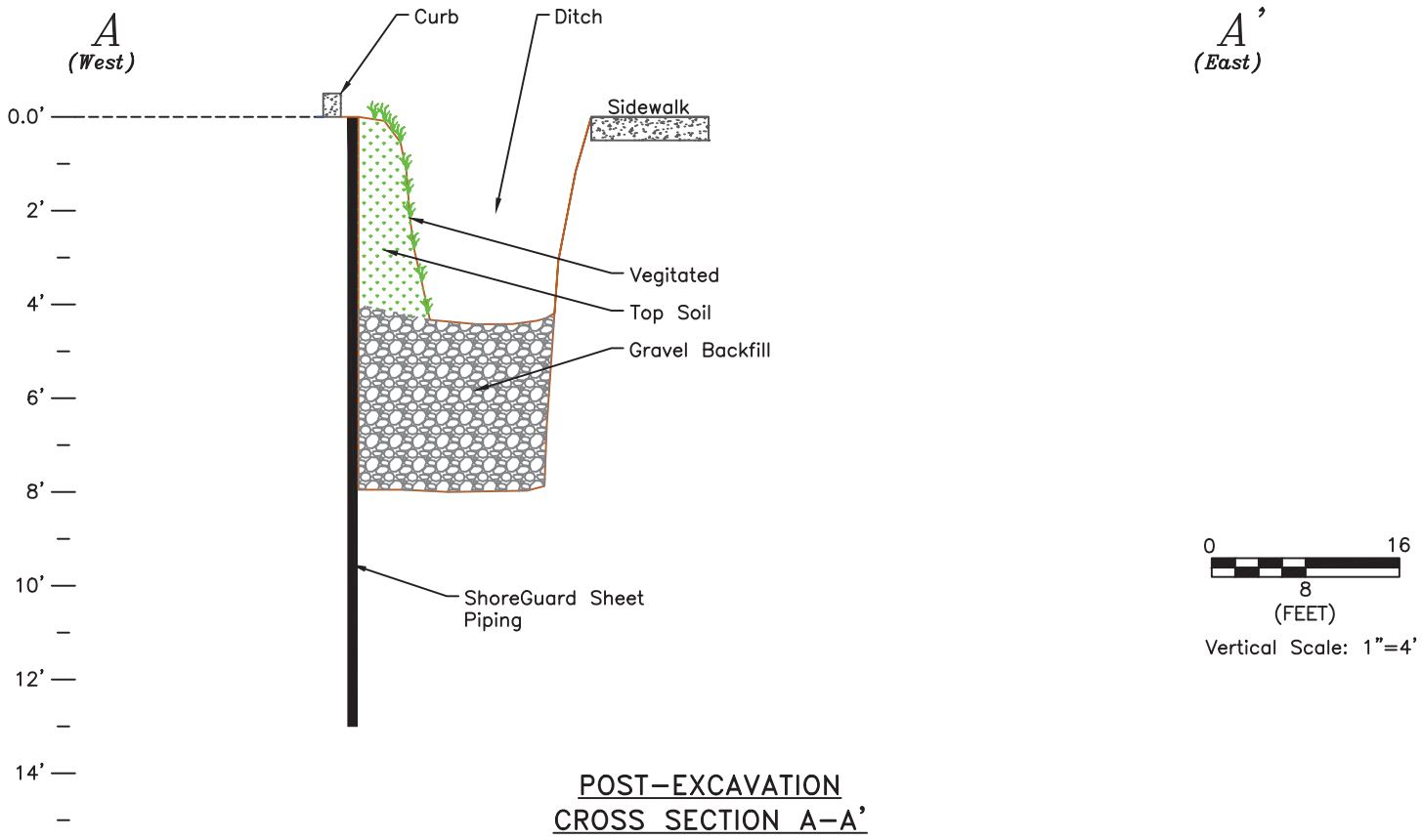
SITE PLAN SHOWING GRADIENT BARRIER
COOS BAY PAC-PRIDE II (Former Davis Oil, Inc. Cardlock)
62590 S. HIGHWAY 101, COOS BAY, OREGON

PROJECT CODE: PNE01MAG.16UC
DATE: 08/31/16
SCALE: AS SHOWN
DRAWN: K.D.DESIGNS
CHECKED: RANDALL BOESE

FIGURE #: 4



CROSS SECTION A–A'



POST–EXCAVATION
CROSS SECTION A–A'

BB&A ENVIRONMENTAL

EUGENE OFFICE
32986 Roberts Ct.
Coburg, OR
ph: 541.484.9484

PORTLAND OFFICE
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Wilsonville, OR
ph: 503.570.9484

www.BBAENV.COM

A–A' GEOLOGIC CROSS SECTION
COOS BAY PAC–PRIDE II (Former Davis Oil, Inc. Cardlock)
62590 S. HIGHWAY 101, COOS BAY, OREGON

PROJECT CODE:	DATE:	SCALE:	DRAWN:	CHECKED:
PNE01MAG.16UC	08/31/16	AS SHOWN	K.D.DESIGNS	RANDALL BOESE

FIGURE #: 5

APPENDIX B

SOP 11

STANDARD OPERATING PROCEDURE SOP - 11

LOW-FLOW PERISTALTIC PUMP GROUNDWATER SAMPLING

1.0 General

This standard operating procedure is designed to assist the technician in taking representative groundwater samples from monitoring wells. Groundwater samples will be collected using low-flow (minimal drawdown) purging and sampling methods as discussed in U.S. EPA, Ground Water Issue, Publication Number EPA/540/S-95/504, July 1996 by Puls, R.W. and M.J. Barcelona - "Low Stress (low flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells."

The sampler's objective is to purge and sample the well so that the water that is discharged from the pump, and subsequently collected, is representative of the formation water from the aquifer's identified zone of interest.

1.1 Initial Pump Flow Test Procedures

Measure and record the Static Water Level (SWL) on field data sheet following the procedures outlined in SOP 9.

The appropriate tubing type (Teflon, HDPE, PVC, polyethylene, etc.) should be preselected based on the analytes of interest.

The mid-point of the saturated screen length is used by convention as the location of the tubing intake. Site specific work plans may change the location of sample intake depth in order to sample from the highest yielding zone within the screened interval. In wells with a fully saturated screen length over 10 feet, testing should be performed if possible during development to determine highest water yielding zone within screened interval.

After tubing installation and confirmation that the SWL has returned to its original level (as determined prior to tubing installation), the peristaltic pump should be started at a discharge rate less than 0.5 liters per minute (0.13 gal/min) without any In-Line Flow Cell connected. The water level in the well casing must be monitored continuously for any change from the original measurement. If significant drawdown is observed, the pump's flow rate should be reduced until the SWL drawdown stabilizes. Total drawdown from the initial (static) water level should not exceed 0.3 feet. In any case, the water level in the well should not be lowered below the top of the screen/intake zone of the well.

Once the specific well's optimum flow rate has been determined and documented, connect the In-Line Flow Cell system (if available) to be used to the well discharge and determine the control settings required to achieve the well's determined optimum flow rate with the In-Line Flow Cell connected (due to the system's back-pressure, the flow rate will be decreased by 10 to 20 percent).

1.2 Purge and Sampling Events

Prior to the initiation of purging a well, the SWL will be measured and documented. The peristaltic pump will be started utilizing its documented control settings and its flow rate will be confirmed by volumetric discharge measurement with the In-Line Flow Cell connected. If necessary, any minor modifications to the control settings to achieve the well's optimum flow rate will be documented on the appropriate field form. When the optimum pump flow rate has been established, the SWL drawdown has stabilized within the required range, and at least one pump system volume (down well extraction tubing, pump head tubing, and discharge tubing volume) has been purged, begin taking field measurements for pH, temperature (T), conductivity (Ec), oxygen reduction potential (ORP), dissolved oxygen (DO), and turbidity (TU) using an in-line flow cell or if unavailable individual water quality meters. All water chemistry field measurements will be documented on the appropriate field form. Measurements should be taken every three to five minutes until stabilization has been achieved. Stabilization is achieved after all parameters have stabilized for three consecutive readings. In lieu of measuring all five parameters, a minimum subset would include pH, conductivity, and turbidity or dissolved oxygen. Three consecutive measurements indicating stability should be within:

Temperature	± 3% of reading (min ± 0.2° C)
pH	± 0.1 units, min
Conductance	± 3% of reading
Dissolved Oxygen	± 10% of reading
Redox	± 10 mV
Turbidity	± 10% NTU or <10 NTU

When water quality parameters have stabilized, and there has been no change in the stabilized SWL (i.e., no continuous drawdown), sample collection may begin.

1.3 Field Procedures

A summary of field procedures used to collect groundwater samples using a peristaltic pump is provided below.

- Calibrate all field instruments at the start of each day following the instrument manufacturer's instructions. Record calibration data on field form.
- Prior to use at each well, decontaminate all instruments that will be lowered in the well (electronic water level indicator and/or oil/water interface probe) by washing with phosphate-free detergent, rinsing with potable water, and rinsing with deionized water.
- Make notes in the appropriate field form documenting condition of the well and activity in the vicinity of the well.
- Measure the depth to water from the surveyed reference mark on the wellhead and record the measurement on the appropriate field form. Lock the water level meter in place so that the level can be monitored during purging and sampling.
- Place a new length of disposable sampling tubing into the well casing so that the tip of the tubing is located at appropriate sampling depth within the well screen.
- Place a new length of silicone tubing into the peristaltic pump head fixture.
- Connect the sample tubing to the influent end of the silicone tubing in the peristaltic pump head fixture.
- Place a new length of disposable sample tubing to the effluent end of the silicone tubing on the peristaltic pump and secure to drain the water purged from the well into the collection container (i.e., 5 gallon bucket).
- Start the peristaltic pump. Set the pump controller settings to the appropriate settings for the specific well. Confirm the flow rate is equal to the well's established optimum flow rate. Modify as necessary (documenting any required modifications).
- Monitor the water level and confirm that the SWL drawdown has stabilized within the well's allowable limits.
- Remove the pump discharge tubing.
- Connect the pump discharge tubing to the In-Line flow cells "IN" fitting.
- Connect the Flow Cell's "OUT" line and secure to drain the water purged from the well into the collection container (i.e., 5 gallon bucket).
- After purging the first system volume (down well sampling tubing, pump head silicone tubing, and discharge tubing volume) record the water quality field measurements every three to five minutes until all parameters have stabilized within their allowable ranges for at least three consecutive measurements. Begin sampling after stabilization has been achieved.
- Disconnect the flow cell and tubing from the pump discharge line before collecting samples. Decrease the pump rate to 100 milliliters per minute or less by lowering the pump controller's setting prior to collecting samples for volatiles. Place the samples in a chilled cooler with enough blue ice or ice to keep the temperature at 4 degrees Centigrade.
- Once samples for volatiles have been collected, re-establish pump flow rate to the original purge flow rate by inputting the documented controller settings for the well without the In-Line Flow Cell connected, and collect remaining samples.
- Consolidate purge water into a labeled 55-gallon drum(s).

- Remove and decontaminate the electronic water level indicator with phosphate-free detergent, rinsing with potable water and rinsing with deionized water.
- Disconnect and dispose the sample and silicone tubing used to collect the sample.
- Secure the peristaltic pump in the portable pump carrying case.
- Place the wellhead cover on the well and secure with a lock.
- Move equipment to next well to be sampled and repeat.
- At the end of each dayclean and decontaminate the In-Line Flow Cell with phosphate-free detergent, rinsing with potable water, and rinsing with deionized water.
- Make a photocopy of all completed field forms. The copies should be retained on site. The original forms will be kept in the HC's project file.

1.4 Equipment List

The following equipment is needed to conduct low flow purging and sampling:

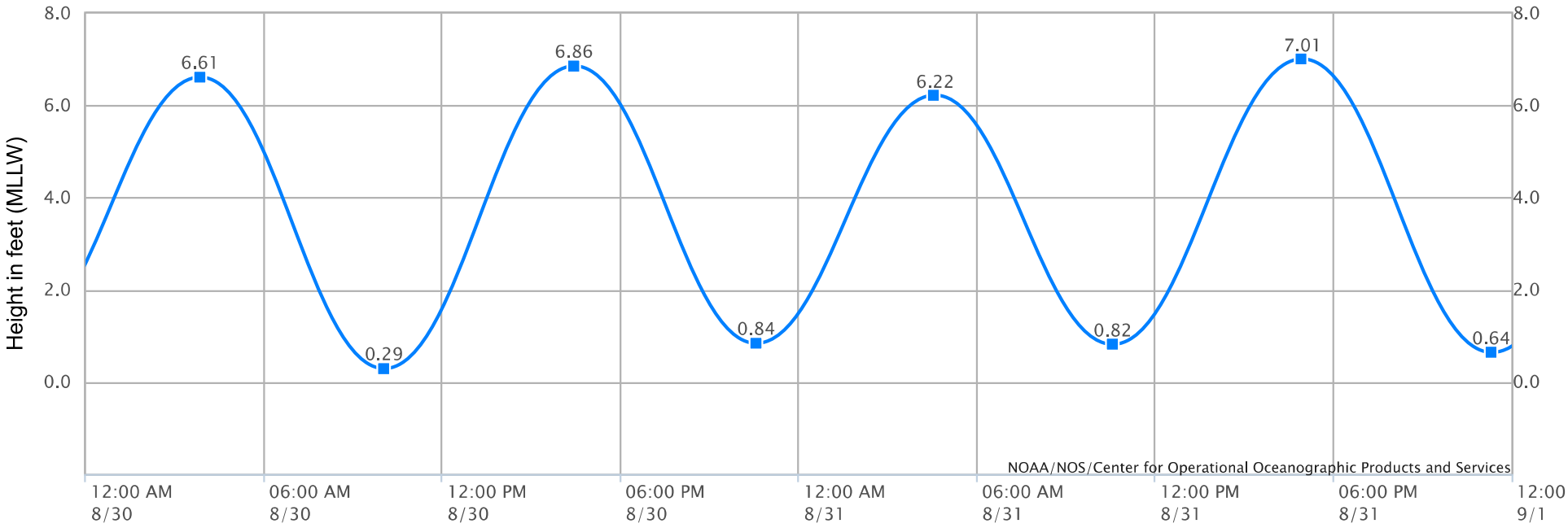
- Peristaltic pump equipped with a flow controller.
- Appropriate amount of disposable sample tubing to collect groundwater samples from each well at the site.
- In-Line Flow Cell and meter(s) with connection fittings and tubing to measure water quality.
- Water quality meters as backup in-case of in-line flow cell malfunction.
- Photoionization detector (PID).
- Electronic Water Level Indicator Probe.
- Laboratory-prepared sample containers appropriate for the analytical requirements.
- Field documentation forms.
- Measuring cup.
- Five gallon bucket(s) for containerizing purge water.
- Stopwatch.
- Cleaning and decontamination supplies.

APPENDIX C

NOAA TIDE CHART

Help Print

NOAA/NOS/CO-OPS
Tide Predictions at 9432845, Coos Bay OR
From 2022/08/30 12:00 AM LST/LDT to 2022/08/31 11:59 PM LST/LDT
Subordinate Station | Ref. Station (Charleston 9432780) | Time offsets (high: 86 min. low: 88 min.) | Height offsets (high: *0.96 ft. low: *0.88 ft.)



Note: The interval is High/Low, the solid blue line depicts a curve fit between the high and low values and approximates the segments between.
Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

High/Low Tide Prediction Data Listing

Station Name: Coos Bay, OR
Action: Daily
Product: Tide Predictions
Start Date & Time: 2022/8/30 12:00 AM
End Date & Time: 2022/8/31 11:59 PM

Source: NOAA/NOS/CO-OPS
Prediction Type: Subordinate
Datum: MLLW
Height Units: Feet
Time Zone: LST/LDT

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt

2022/08/30	Tue	03:51 AM	6.61 H	10:03 AM	0.29 L	4:27 PM	6.86 H	10:34 PM	0.84 L
2022/08/31	Wed	04:35 AM	6.22 H	10:34 AM	0.82 L	4:57 PM	7.01 H	11:20 PM	0.64 L

APPENDIX D

PHOTOGRAPHIC DOCUMENTATION

Photo #1 8/30/22 8:29 am: North end of drainage ditch with no observed outflow north of telephone pole 1.5 hours prior to low tide.

Photo #2 8/30/22 8:32 am: Standing water in drainage ditch south of telephone pole 1.5 hours prior to low tide.

Photo #3 8/30/22 8:43 am: Sheen in southern portion of drainage ditch in area of MW03.

Photo #4 8/30/22 8:43 am: Sheen broken up using PVC pipe.

Photo #5 8/30/22 8:43 am: Sheen fractures into platelets indicative of biological sheen.

Photo #6 8/31/22 8:45 am: Sheen on organic-rich mud near MW03.

Photo #7 8/31/22 8:45 am: Sheen again breaks into platelets indicative of biological sheen.

Photo #8 12/1/21: Minimal flow from drainage ditch at low tide with deeper water in the drainage ditch south of the telephone pole.

APPENDIX E

FIELD FORMS

HydroCon

Phone: 360.998.2902
1339 Commerce Ave., Suite 211; Longview, WA

DAILY FIELD REPORT

Project Name:	PACPride - Coos Bay
Client:	Carson
Location:	Coos Bay - Hwy 101
Weather:	Sunny
Prepared By:	Dan Becraft
Purpose:	Q Monitoring
HydroCon Job Number:	2021-087-001
Date:	8/30/22
Page:	1 Of 2
Arrival:	8:10
Departure:	1755
Permit:	

8:50 - Opened all wells. Observed creek & drainage ditch for sheen. Only area of sheen is intermittent from ± 15' north of MW03 to south end of drainage ditch. This is a very marshy and stagnant part of the ditch, w/ thick vegetation (cattails & other plants) w/ lots of decaying vegetation in both water & mud. There are no locations where I see an actual sheen seeping, the sheen is on both water and mud. Lots of algae growth in ~~matts~~ mats. I broke up sheen at 2 locations using a length of PVC pipe. The sheen broke into platelets typical of bio sheen.

Well ID	DTP	DTW	Time
MW01	—	3.09	0903
MW02	—	3.22	0907
MW03	—	4.39	0910
OIS-NW	—	3.21	0923
OIS-NE	—	3.60	0926
OIS-SW	—	3.31	0921
OIS-SE	—	3.56	0930
Drainage Ditch	—	3.90	0915

0945 Completed DTW. Setting up on MW01

1100 Completed sampling MW01

HydroCon

DAILY FIELD REPORT

Phone: 360.998.2902	
1339 Commerce Ave., Suite 211; Longview, WA	
Prepared By: D. Beckett	Project Name: PAC Pride Coos Bay
Purpose: Q monitoring	Client: Carlson
	Location: Coos Bay - Hwy 101
	Weather: Sunny

HydroCon Job Number: 2021-083-001

Date: 8/30/22

Page: 2 Of 2

Arrival:

Departure:

Permit:

1220 Completed sampling MW02, setting up on MW03

1315 Completed sampling for 10am low tide. Drummed the purge water. Observed drainage ditch. Three hours fifteen minutes following low tide, incoming tide has not risen enough to begin flowing through the drainage ditch

1420 Tide water above high point in ditch bed elevation by the telephone pole. Begin flowing south in drainage ditch

1445 Left site to set food.

Well	DTP	DTW	Time
MW01	—	3.06	1610
MW02	—	5.41	1612
MW03	—	4.29	1615
ORS-NW	—	3.21	1600
ORS-NE	—	3.61	1607
ORS-SW	—	3.31	1604
ORS-SE	—	3.54	1608
Drainage Ditch	—	3.90	1618
MW02		4.98	1700

HydroCon

Phone: 360.998.2902
1339 Commerce Ave., Suite 211; Longview, WA

DAILY FIELD REPORT

Project Name: PAC Pride Coos Bay	HydroCon Job Number:
Client: Carson	Date: 8/31/22
Prepared By:	Page: 1 Of 1
Location: Hyw 101 Coos Bay	Arrival: 8:45
Purpose:	Departure: 9:15
Weather: Cool, Foggy	Permit:

9:10 Observed drainage ditch. Sheen again only in MW03 area ~ 15' north of MW03 to south end. Yesterdays 4 PM high tide did not rise to elevation of this area of drainage ditch, which contains an abundance of organic material in location where water can stagnate. Sheen broke up when moved w/ PVC pipe section & did not quickly ~~re-coalesce~~ come back together. This is indicative of a biological sheen.

GROUNDWATER PURGE AND SAMPLE COLLECTION

High Tide = 1620 sample

PAC Pride

Well I.D. Number: MW01

Project Name (Number): Carson Coos Bay
Hydrocon Project Number: 2021-083-001
Date: 8/30/22

Sample I.D.: MW01-W Time: 1030
Field Duplicate I.D.: MW1000 Time: 1000
Personnel: Dan Becraft

WELL INFORMATION

Monument condition: ☒ Good ☐ Needs repair: _____ ☐ Water in Monument
Well cap condition: ☐ Good ☐ Replaced ☐ Needs Replacement ☐ Surface Water Well Infiltration
Headspace reading: ☐ Not measured PID Reading _____ ppm ☐ Odor: _____
Well diameter: ☐ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other: _____
Comments _____

PURGING INFORMATION

Total well depth: _____ ft Bottom: ☐ Hard ☐ Soft ☐ Not measured Screen Interval(s): _____
Depth to product: _____ ft
Depth to water: 3.09 ft Intake Depth (BTOC): _____ Begin Purging Well: 1009
Casing volume: _____ ft (H_2O) X _____ gal/ft = _____ gal. X 3 = _____ gal.
Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

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

FIELD PARAMETERS

Odor and/or Sheen: _____

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1012	4.08	0.20	21.0	7.731	21.5	6.24	-47.7	12.0
1015	4.09	0.10	21.5	7.574	11.3	6.36	-82.4	12.9
1018	4.40	0.05	21.9	7.190	9.3	6.42	-97.1	13.0
1021	4.67	0.05	21.1	6.305	8.6	6.51	-107.1	19.7
1025	4.75	0.05	22.5	6.084	8.3	6.52	-110.6	19.9
1029	4.78	0.05	22.4	5.953	8.2	6.56	-114.0	20.1

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

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40 ml	12	NO	~~No~~ 0.45 0.10	RSKM VOCs
40 ml	2	HCl	~~No~~ 0.45 0.10	RSKM VOCs
1L	1	HCl	~~No~~ 0.45 0.10	DX PAHs
1L	1	NO	~~No~~ 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____

GROUNDWATER PURGE AND SAMPLE COLLECTION

Well I.D. Number: MW02

Project Name (Number): PAC Arcade Coos Bay | Sample I.D.: MW02-W | Time: 1125
Hydrocon Project Number: 2021-083-001 | Field Duplicate I.D.: — | Time: —
Date: 8/30/22 | Personnel: Dan Secraft

WELL INFORMATION

Monument condition: ☒ Good ☐ Needs repair: _____ ☐ Water in Monument
Well cap condition: ☒ Good ☐ Replaced ☐ Needs Replacement ☐ Surface Water Well Infiltration
Headspace reading: ☒ Not measured PID Reading _____ ppm ☐ Odor: _____
Well diameter: ☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other: _____
Comments _____

PURGING INFORMATION

Total well depth: _____ ft Bottom: ☐ Hard ☐ Soft ☒ Not measured Screen Interval(s): _____
Depth to product: _____ ft
Depth to water: 3.72 ft Intake Depth (BTOC): _____ Begin Purging Well: 1100
Casing volume: _____ ft (H_2O) X _____ gal/ft = _____ gal. X 3 = _____ gal.
Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

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

FIELD PARAMETERS

Odor and/or Sheen: _____

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1103	3.64	0.050	20.1	14.674	12.5	6.67	-103.4	9.47
1106	4.02	0.050	20.2	14.345	11.2	6.62	-107.5	2.42
1110	5.10	0.050	20.7	12.884	9.7	6.67	-125.3	2.60
1115	6.00	0.050	20.9	9.139	9.0	6.66	-139.1	2.53
1119	6.87	0.050	20.9	6.850	8.6	6.70	-142.6	2.48
1123	6.98	0.050	21.1	5.745	8.5	6.70	-142.8	2.60

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

Purging Comments: _____

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40 ml	3	HCl	(No) 0.45 0.10	RSKM VOCs
40 ml	2	NO	(No) 0.45 0.10	RSKM VOCs
1L Amber	1	HCl	(No) 0.45 0.10	TPH-Dx
1L Amber	1	NO	(No) 0.45 0.10	PAHs
			No 0.45 0.10	

Sampling Comments: _____

High tide sample = 1730

GROUNDWATER PURGE AND SAMPLE COLLECTION

Well I.D. Number: MW03

Project Name (Number): Pac Pride Coos Bay
Hydrocon Project Number: 2021-083-001
Date: 8/30/22
Sample I.D.: MW03-W Time: 12:25
Field Duplicate I.D.: — Time: —
Personnel: Dan Becraft

WELL INFORMATION

Monument condition: ☒ Good ☐ Needs repair: _____ ☐ Water in Monument
Well cap condition: ☒ Good ☐ Replaced ☐ Needs Replacement ☐ Surface Water Well Infiltration
Headspace reading: ☐ Not measured PID Reading _____ ppm ☐ Odor: _____
Well diameter: ☒ 2-inch ☐ 4-inch ☐ 6-inch ☐ Other: _____
Comments _____

PURGING INFORMATION

Total well depth: _____ ft Bottom: ☐ Hard ☐ Soft ☐ Not measured Screen Interval(s): 1155
Depth to product: _____ ft
Depth to water: 4.39 ft Intake Depth (BTOC): _____ Begin Purging Well: _____
Casing volume: _____ ft (H_2O) X _____ gal/ft = _____ gal. X 3 = _____ gal.
Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

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

FIELD PARAMETERS

Odor and/or Sheen: _____

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1201	4.62	0.050	18.6	10.484	17.8	6.57	-68.5	3.39
1205	5.01	0.050	18.8	4.339	11.4	6.66	-102.5	5.33
1209	5.32	0.050	19.0	2.267	10.0	6.69	-112.5	5.15
1213	5.34	0.050	19.2	2.125	9.3	6.68	-116.2	5.20
1217	5.34	0.050	19.3	2.123	9.0	6.68	-120.2	5.04
1221	5.34	0.050	19.3	2.101	8.7	6.68	-122.7	5.02

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

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40ml	2	HCl	(No) 0.45 0.10	RBDM VOCs
40ml	2	NO	(No) 0.45 0.10	RBDM VOCs
1L Amber	1	HCl	(No) 0.45 0.10	Dx PAHs
1L Amber	1	NO	(No) 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____

APPENDIX F

LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Thursday, September 8, 2022

Chris Sheridan
HydroCon LLC
314 W 15th Street Suite 300
Vancouver, WA 98660

RE: A2H0993 - PAC Pride Coos Bay - 2021-083-001

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 A2H0993, which was received by the laboratory on 8/31/2022 at 2:33:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	1.6 degC	Cooler #2	1.0 degC

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.

Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01-W 10:30	A2H0993-01	Water	08/30/22 10:30	08/31/22 14:33
MW02-W 11:25	A2H0993-02	Water	08/30/22 11:25	08/31/22 14:33
MW03-W 12:25	A2H0993-03	Water	08/30/22 12:25	08/31/22 14:33
MW01-W 16:20	A2H0993-04	Water	08/30/22 16:20	08/31/22 14:33
MW02-W 17:05	A2H0993-05	Water	08/30/22 17:05	08/31/22 14:33
MW03-W 17:30	A2H0993-06	Water	08/30/22 17:30	08/31/22 14:33
MW1000-W	A2H0993-07	Water	08/30/22 10:00	08/31/22 14:33

Apex Laboratories

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

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
MW01-W 10:30 (A2H0993-01)				**Matrix: Water**		**Batch: 22I0085**		
Diesel	**3900**	---	79.2	ug/L	1	09/06/22 22:56	NWTPH-Dx LL	
Oil	ND	---	158	ug/L	1	09/06/22 22:56	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		*Recovery: 52 %*	*Limits: 50-150 %*		*1*	*09/06/22 22:56*	*NWTPH-Dx LL*	
MW02-W 11:25 (A2H0993-02)				**Matrix: Water**		**Batch: 22I0085**		
Diesel	**849**	---	78.4	ug/L	1	09/06/22 23:19	NWTPH-Dx LL	**F-11**
Oil	ND	---	157	ug/L	1	09/06/22 23:19	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		*Recovery: 79 %*	*Limits: 50-150 %*		*1*	*09/06/22 23:19*	*NWTPH-Dx LL*	
MW03-W 12:25 (A2H0993-03)				**Matrix: Water**		**Batch: 22I0085**		
Diesel	**2420**	---	76.2	ug/L	1	09/06/22 23:43	NWTPH-Dx LL	
Oil	ND	---	152	ug/L	1	09/06/22 23:43	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*1*	*09/06/22 23:43*	*NWTPH-Dx LL*	
MW01-W 16:20 (A2H0993-04)				**Matrix: Water**		**Batch: 22I0085**		
Diesel	**3060**	---	80.0	ug/L	1	09/07/22 00:06	NWTPH-Dx LL	
Oil	ND	---	160	ug/L	1	09/07/22 00:06	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		*Recovery: 60 %*	*Limits: 50-150 %*		*1*	*09/07/22 00:06*	*NWTPH-Dx LL*	
MW02-W 17:05 (A2H0993-05)				**Matrix: Water**		**Batch: 22I0066**		
Diesel	**871**	---	75.5	ug/L	1	09/02/22 21:42	NWTPH-Dx LL	
Oil	ND	---	151	ug/L	1	09/02/22 21:42	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*	*Limits: 50-150 %*		*1*	*09/02/22 21:42*	*NWTPH-Dx LL*	
MW03-W 17:30 (A2H0993-06)				**Matrix: Water**		**Batch: 22I0066**		
Diesel	**2590**	---	79.2	ug/L	1	09/02/22 22:05	NWTPH-Dx LL	
Oil	ND	---	158	ug/L	1	09/02/22 22:05	NWTPH-Dx LL	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*	*Limits: 50-150 %*		*1*	*09/02/22 22:05*	*NWTPH-Dx LL*	

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.

Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

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
MW01-W 10:30 (A2H0993-01RE1)				**Matrix: Water**		**Batch: 22I0097**		
Gasoline Range Organics	**368**	---	100	ug/L	1	09/06/22 15:26	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 100 %*	*Limits: 50-150 %*		*1*	*09/06/22 15:26*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*98 %*	*50-150 %*	*1*	*09/06/22 15:26*	*NWTPH-Gx (MS)*	
MW02-W 11:25 (A2H0993-02RE1)				**Matrix: Water**		**Batch: 22I0097**		
Gasoline Range Organics	ND	---	100	ug/L	1	09/06/22 15:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*	*Limits: 50-150 %*		*1*	*09/06/22 15:47*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*99 %*	*50-150 %*	*1*	*09/06/22 15:47*	*NWTPH-Gx (MS)*	
MW03-W 12:25 (A2H0993-03)				**Matrix: Water**		**Batch: 22I0059**		
Gasoline Range Organics	**350**	---	100	ug/L	1	09/02/22 16:07	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*09/02/22 16:07*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*99 %*	*50-150 %*	*1*	*09/02/22 16:07*	*NWTPH-Gx (MS)*	
MW01-W 16:20 (A2H0993-04RE1)				**Matrix: Water**		**Batch: 22I0097**		
Gasoline Range Organics	**480**	---	100	ug/L	1	09/06/22 16:09	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 102 %*	*Limits: 50-150 %*		*1*	*09/06/22 16:09*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*100 %*	*50-150 %*	*1*	*09/06/22 16:09*	*NWTPH-Gx (MS)*	
MW02-W 17:05 (A2H0993-05RE1)				**Matrix: Water**		**Batch: 22I0097**		
Gasoline Range Organics	ND	---	100	ug/L	1	09/06/22 16:30	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 97 %*	*Limits: 50-150 %*		*1*	*09/06/22 16:30*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*99 %*	*50-150 %*	*1*	*09/06/22 16:30*	*NWTPH-Gx (MS)*	
MW03-W 17:30 (A2H0993-06)				**Matrix: Water**		**Batch: 22I0059**		
Gasoline Range Organics	**489**	---	100	ug/L	1	09/02/22 17:01	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 98 %*	*Limits: 50-150 %*		*1*	*09/02/22 17:01*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*99 %*	*50-150 %*	*1*	*09/02/22 17:01*	*NWTPH-Gx (MS)*	
MW1000-W (A2H0993-07RE1)				**Matrix: Water**		**Batch: 22I0097**		
Gasoline Range Organics	**431**	---	100	ug/L	1	09/06/22 16:52	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*	*Limits: 50-150 %*		*1*	*09/06/22 16:52*	*NWTPH-Gx (MS)*	
1,4-Difluorobenzene (Sur)			*99 %*	*50-150 %*	*1*	*09/06/22 16:52*	*NWTPH-Gx (MS)*	

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW01-W 10:30 (A2H0993-01RE1)				**Matrix: Water**		**Batch: 22I0097**		
Benzene	**7.31**	---	0.200	ug/L	1	09/06/22 15:26	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/06/22 15:26	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/06/22 15:26	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/06/22 15:26	EPA 8260D	
Methyl tert-butyl ether (MTBE)	**4.25**	---	1.00	ug/L	1	09/06/22 15:26	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/06/22 15:26	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/06/22 15:26	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/06/22 15:26	EPA 8260D	
Isopropylbenzene	**1.02**	---	1.00	ug/L	1	09/06/22 15:26	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 15:26	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 15:26	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits:*	*80-120 %*	*09/06/22 15:26*	*EPA 8260D*	
Toluene-d8 (Surr)			*97 %*		*80-120 %*	*09/06/22 15:26*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*	*09/06/22 15:26*	*EPA 8260D*	
MW02-W 11:25 (A2H0993-02RE1)				**Matrix: Water**		**Batch: 22I0097**		
Benzene	ND	---	0.200	ug/L	1	09/06/22 15:47	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/06/22 15:47	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/06/22 15:47	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/06/22 15:47	EPA 8260D	
Methyl tert-butyl ether (MTBE)	**2.29**	---	1.00	ug/L	1	09/06/22 15:47	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/06/22 15:47	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/06/22 15:47	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/06/22 15:47	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	09/06/22 15:47	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 15:47	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 15:47	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits:*	*80-120 %*	*09/06/22 15:47*	*EPA 8260D*	
Toluene-d8 (Surr)			*97 %*		*80-120 %*	*09/06/22 15:47*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*	*09/06/22 15:47*	*EPA 8260D*	
MW03-W 12:25 (A2H0993-03)				**Matrix: Water**		**Batch: 22I0059**		
Benzene	ND	---	0.200	ug/L	1	09/02/22 16:07	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/02/22 16:07	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/02/22 16:07	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/02/22 16:07	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	09/02/22 16:07	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/02/22 16:07	EPA 8260D	

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW03-W 12:25 (A2H0993-03)				**Matrix: Water**		**Batch: 22I0059**		
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/02/22 16:07	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/02/22 16:07	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	09/02/22 16:07	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/02/22 16:07	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/02/22 16:07	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*09/02/22 16:07*	*EPA 8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*09/02/22 16:07*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*09/02/22 16:07*	*EPA 8260D*	
MW01-W 16:20 (A2H0993-04RE1)				**Matrix: Water**		**Batch: 22I0097**		
Benzene	**9.59**	---	0.200	ug/L	1	09/06/22 16:09	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/06/22 16:09	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/06/22 16:09	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/06/22 16:09	EPA 8260D	
Methyl tert-butyl ether (MTBE)	**4.35**	---	1.00	ug/L	1	09/06/22 16:09	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/06/22 16:09	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/06/22 16:09	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/06/22 16:09	EPA 8260D	
Isopropylbenzene	**1.03**	---	1.00	ug/L	1	09/06/22 16:09	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:09	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:09	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits: 80-120 %*	*1*	*09/06/22 16:09*	*EPA 8260D*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*09/06/22 16:09*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*09/06/22 16:09*	*EPA 8260D*	
MW02-W 17:05 (A2H0993-05RE1)				**Matrix: Water**		**Batch: 22I0097**		
Benzene	ND	---	0.200	ug/L	1	09/06/22 16:30	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/06/22 16:30	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/06/22 16:30	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/06/22 16:30	EPA 8260D	
Methyl tert-butyl ether (MTBE)	**2.92**	---	1.00	ug/L	1	09/06/22 16:30	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/06/22 16:30	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/06/22 16:30	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/06/22 16:30	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:30	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:30	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:30	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*111 %*	*Limits: 80-120 %*	*1*	*09/06/22 16:30*	*EPA 8260D*	

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW02-W 17:05 (A2H0993-05RE1)				**Matrix: Water**		**Batch: 22I0097**		
Surrogate: Toluene-d8 (Surr)			*Recovery: 98 %*	*Limits: 80-120 %*	*1*	*09/06/22 16:30*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*98 %*	*80-120 %*	*1*	*09/06/22 16:30*	*EPA 8260D*	
MW03-W 17:30 (A2H0993-06)				**Matrix: Water**		**Batch: 22I0059**		
Benzene	ND	---	0.200	ug/L	1	09/02/22 17:01	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/02/22 17:01	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/02/22 17:01	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/02/22 17:01	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	09/02/22 17:01	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/02/22 17:01	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/02/22 17:01	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/02/22 17:01	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	09/02/22 17:01	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/02/22 17:01	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/02/22 17:01	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*	*1*	*09/02/22 17:01*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*09/02/22 17:01*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*	*1*	*09/02/22 17:01*	*EPA 8260D*	
MW1000-W (A2H0993-07RE1)				**Matrix: Water**		**Batch: 22I0097**		
Benzene	**8.37**	---	0.200	ug/L	1	09/06/22 16:52	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	09/06/22 16:52	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	09/06/22 16:52	EPA 8260D	
Xylenes, total	ND	---	1.50	ug/L	1	09/06/22 16:52	EPA 8260D	
Methyl tert-butyl ether (MTBE)	**4.73**	---	1.00	ug/L	1	09/06/22 16:52	EPA 8260D	
Naphthalene	ND	---	2.00	ug/L	1	09/06/22 16:52	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	09/06/22 16:52	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	09/06/22 16:52	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:52	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:52	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	09/06/22 16:52	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 110 %*	*Limits: 80-120 %*	*1*	*09/06/22 16:52*	*EPA 8260D*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*09/06/22 16:52*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*80-120 %*	*1*	*09/06/22 16:52*	*EPA 8260D*	

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW01-W 10:30 (A2H0993-01)				**Matrix: Water**		**Batch: 22I0025**		
Acenaphthene	ND	---	0.943	ug/L	1	09/01/22 18:49	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.189	ug/L	1	09/01/22 18:49	EPA 8270E SIM	R-02
Anthracene	ND	---	0.330	ug/L	1	09/01/22 18:49	EPA 8270E SIM	R-02
Benz(a)anthracene	**0.0378**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	**M-05**
Benzo(a)pyrene	ND	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Chrysene	**0.0630**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	**M-05**
Dibenz(a,h)anthracene	ND	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Fluoranthene	**0.142**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Fluorene	**2.18**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
1-Methylnaphthalene	**13.5**	---	0.0755	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
2-Methylnaphthalene	**5.09**	---	0.0755	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Naphthalene	ND	---	0.283	ug/L	1	09/01/22 18:49	EPA 8270E SIM	R-02
Phenanthrene	**2.51**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Pyrene	**0.398**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Dibenzofuran	**0.971**	---	0.0377	ug/L	1	09/01/22 18:49	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*35 %*	*Limits:*	*44-120 %*	*09/01/22 18:49*	*EPA 8270E SIM*	*S-06*
p-Terphenyl-d14 (Surr)			*56 %*		*50-134 %*	*09/01/22 18:49*	*EPA 8270E SIM*	
MW02-W 11:25 (A2H0993-02)				**Matrix: Water**		**Batch: 22I0025**		
Acenaphthene	**0.0412**	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Acenaphthylene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Anthracene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Chrysene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Fluoranthene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Fluorene	**0.0996**	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0762	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0762	ug/L	1	09/01/22 19:14	EPA 8270E SIM	

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW02-W 11:25 (A2H0993-02)				**Matrix: Water**		**Batch: 22I0025**		
Naphthalene	ND	---	0.0762	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Phenanthrene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Pyrene	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0381	ug/L	1	09/01/22 19:14	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*39 %*	*Limits: 44-120 %*	*1*	*09/01/22 19:14*	*EPA 8270E SIM*	*S-06*
p-Terphenyl-d14 (Surr)			*48 %*	*50-134 %*	*1*	*09/01/22 19:14*	*EPA 8270E SIM*	*S-06*
MW03-W 12:25 (A2H0993-03)				**Matrix: Water**		**Batch: 22I0025**		
Acenaphthene	ND	---	1.30	ug/L	1	09/01/22 19:40	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.500	ug/L	1	09/01/22 19:40	EPA 8270E SIM	R-02
Anthracene	ND	---	0.0700	ug/L	1	09/01/22 19:40	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Chrysene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Fluoranthene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Fluorene	**3.14**	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
1-Methylnaphthalene	**2.16**	---	0.0800	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0800	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Naphthalene	ND	---	0.450	ug/L	1	09/01/22 19:40	EPA 8270E SIM	R-02
Phenanthrene	**1.35**	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Pyrene	**0.0531**	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Dibenzofuran	**1.04**	---	0.0400	ug/L	1	09/01/22 19:40	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*67 %*	*Limits: 44-120 %*	*1*	*09/01/22 19:40*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*83 %*	*50-134 %*	*1*	*09/01/22 19:40*	*EPA 8270E SIM*	
MW01-W 16:20 (A2H0993-04)				**Matrix: Water**		**Batch: 22I0025**		
Acenaphthene	ND	---	1.06	ug/L	1	09/01/22 20:05	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.288	ug/L	1	09/01/22 20:05	EPA 8270E SIM	R-02
Anthracene	ND	---	0.0962	ug/L	1	09/01/22 20:05	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW01-W 16:20 (A2H0993-04)				**Matrix: Water**		**Batch: 22I0025**		
Benzo(g,h,i)perylene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Chrysene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Fluoranthene	**0.0731**	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Fluorene	**2.42**	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	7.31	ug/L	1	09/01/22 20:05	EPA 8270E SIM	R-02
Naphthalene	ND	---	0.481	ug/L	1	09/01/22 20:05	EPA 8270E SIM	R-02
Phenanthrene	**2.06**	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Pyrene	**0.175**	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Dibenzofuran	**1.09**	---	0.0385	ug/L	1	09/01/22 20:05	EPA 8270E SIM	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*52 %*	*Limits: 44-120 %*	*1*	*09/01/22 20:05*	*EPA 8270E SIM*	
p-Terphenyl-d14 (Surr)			*67 %*	*50-134 %*	*1*	*09/01/22 20:05*	*EPA 8270E SIM*	
MW01-W 16:20 (A2H0993-04RE1)				**Matrix: Water**		**Batch: 22I0025**		
1-Methylnaphthalene	**21.1**	---	0.769	ug/L	10	09/01/22 21:21	EPA 8270E SIM	
MW02-W 17:05 (A2H0993-05)				**Matrix: Water**		**Batch: 22I0066**		**Q-22**
Acenaphthene	ND	---	0.113	ug/L	1	09/06/22 15:43	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Anthracene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Benz(a)anthracene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Chrysene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Fluoranthene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Fluorene	**0.197**	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
1-Methylnaphthalene	ND	---	0.0755	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
2-Methylnaphthalene	ND	---	0.0755	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Naphthalene	ND	---	0.0849	ug/L	1	09/06/22 15:43	EPA 8270E SIM	R-02
Phenanthrene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Pyrene	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	
Dibenzofuran	ND	---	0.0377	ug/L	1	09/06/22 15:43	EPA 8270E SIM	

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
MW03-W 17:30 (A2H0993-06)				**Matrix: Water**		**Batch: 22I0066**		**Q-22**
Acenaphthene	ND	---	1.29	ug/L	1	09/06/22 16:08	EPA 8270E SIM	R-02
Acenaphthylene	ND	---	0.347	ug/L	1	09/06/22 16:08	EPA 8270E SIM	R-02
Anthracene	ND	---	0.0792	ug/L	1	09/06/22 16:08	EPA 8270E SIM	R-02
Benz(a)anthracene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Benzo(a)pyrene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Benzo(b)fluoranthene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Benzo(k)fluoranthene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Benzo(g,h,i)perylene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Chrysene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Dibenz(a,h)anthracene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Fluoranthene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Fluorene	**3.33**	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Indeno(1,2,3-cd)pyrene	ND	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
1-Methylnaphthalene	**2.36**	---	0.0792	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
2-Methylnaphthalene	**0.118**	---	0.0792	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Naphthalene	ND	---	0.366	ug/L	1	09/06/22 16:08	EPA 8270E SIM	R-02
Phenanthrene	**1.61**	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Pyrene	**0.0701**	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	
Dibenzofuran	**1.07**	---	0.0396	ug/L	1	09/06/22 16:08	EPA 8270E SIM	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

HydroCon LLC	Project: PAC Pride Coos Bay	
314 W 15th Street Suite 300	Project Number: 2021-083-001	Report ID:
Vancouver, WA 98660	Project Manager: Chris Sheridan	A2H0993 - 09 08 22 1031

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 22I0066 - EPA 3510C (Fuels/Acid Ext.)											Water	
Blank (22I0066-BLK1)		Prepared: 09/02/22 11:09		Analyzed: 09/02/22 20:32								
NWTPH-Dx LL												
Diesel	ND	---	72.7	ug/L	1	---	---	---	---	---	---	
Oil	ND	---	145	ug/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 76 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (22I0066-BS1)		Prepared: 09/02/22 11:09		Analyzed: 09/02/22 20:55								
NWTPH-Dx LL												
Diesel	263	---	80.0	ug/L	1	500	---	53	36 - 132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS Dup (22I0066-BSD1)		Prepared: 09/02/22 11:09		Analyzed: 09/02/22 21:18								
NWTPH-Dx LL												
Diesel	290	---	80.0	ug/L	1	500	---	58	36 - 132%	10	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 92 %*		*Limits: 50-150 %*			*Dilution: 1x*					
Batch 22I0085 - EPA 3510C (Fuels/Acid Ext.)											Water	
Blank (22I0085-BLK1)		Prepared: 09/06/22 06:42		Analyzed: 09/06/22 21:46								
NWTPH-Dx LL												
Diesel	ND	---	72.7	ug/L	1	---	---	---	---	---	---	
Oil	ND	---	145	ug/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (22I0085-BS1)		Prepared: 09/06/22 06:42		Analyzed: 09/06/22 22:09								
NWTPH-Dx LL												
Diesel	433	---	80.0	ug/L	1	500	---	87	36 - 132%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 97 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS Dup (22I0085-BSD1)		Prepared: 09/06/22 06:42		Analyzed: 09/06/22 22:33								
NWTPH-Dx LL												
Diesel	418	---	80.0	ug/L	1	500	---	84	36 - 132%	4	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*			*Dilution: 1x*					

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

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314 W 15th Street Suite 300	Project Number: 2021-083-001	Report ID:
Vancouver, WA 98660	Project Manager: Chris Sheridan	A2H0993 - 09 08 22 1031

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 22I0059 - EPA 5030C									Water			
Blank (22I0059-BLK1)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 11:35								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	100	ug/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 96 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*98 %*		*50-150 %*			*"*					
LCS (22I0059-BS2)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 11:08								
NWTPH-Gx (MS)												
Gasoline Range Organics	459	---	100	ug/L	1	500	---	92	80 - 120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*99 %*		*50-150 %*			*"*					
Duplicate (22I0059-DUP1)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 16:34								
QC Source Sample: MW03-W 12:25 (A2H0993-03)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**490**	---	100	ug/L	1	---	350	---	---	**33**	**30%**	Q-05
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 99 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*98 %*		*50-150 %*			*"*					

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Tigard, OR 97223
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Vancouver, WA 98660	Project Manager: Chris Sheridan	A2H0993 - 09 08 22 1031

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 22I0097 - EPA 5030C									Water			
Blank (22I0097-BLK1)		Prepared: 09/06/22 09:51		Analyzed: 09/06/22 12:35								
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	100	ug/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*99 %*		*50-150 %*			*"*					
LCS (22I0097-BS2)		Prepared: 09/06/22 09:51		Analyzed: 09/06/22 12:06								
NWTPH-Gx (MS)												
Gasoline Range Organics	505	---	100	ug/L	1	500	---	101	80 - 120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		*Recovery: 101 %*		*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)		*98 %*		*50-150 %*			*"*					

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
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HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0059 - EPA 5030C												**Water**
Blank (22I0059-BLK1)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 11:35								
EPA 8260D												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*104 %*		*80-120 %*			*"*				
LCS (22I0059-BS1)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 10:40								
EPA 8260D												
Benzene	18.3	---	0.200	ug/L	1	20.0	---	91	80 - 120%	---	---	
Toluene	18.4	---	1.00	ug/L	1	20.0	---	92	80 - 120%	---	---	
Ethylbenzene	20.0	---	0.500	ug/L	1	20.0	---	100	80 - 120%	---	---	
Xylenes, total	61.1	---	1.50	ug/L	1	60.0	---	102	80 - 120%	---	---	
Methyl tert-butyl ether (MTBE)	19.7	---	1.00	ug/L	1	20.0	---	98	80 - 120%	---	---	
Naphthalene	20.9	---	2.00	ug/L	1	20.0	---	104	80 - 120%	---	---	
1,2-Dibromoethane (EDB)	21.0	---	0.500	ug/L	1	20.0	---	105	80 - 120%	---	---	
1,2-Dichloroethane (EDC)	19.6	---	0.500	ug/L	1	20.0	---	98	80 - 120%	---	---	
Isopropylbenzene	21.4	---	1.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
1,2,4-Trimethylbenzene	21.2	---	1.00	ug/L	1	20.0	---	106	80 - 120%	---	---	
1,3,5-Trimethylbenzene	20.6	---	1.00	ug/L	1	20.0	---	103	80 - 120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				
Duplicate (22I0059-DUP1)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 16:34								

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

HydroCon LLC	Project: PAC Pride Coos Bay	
314 W 15th Street Suite 300	Project Number: 2021-083-001	Report ID:
Vancouver, WA 98660	Project Manager: Chris Sheridan	A2H0993 - 09 08 22 1031

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0059 - EPA 5030C							Water					
Duplicate (22I0059-DUP1)		Prepared: 09/02/22 09:29		Analyzed: 09/02/22 16:34								
QC Source Sample: MW03-W 12:25 (A2H0993-03)												
EPA 8260D												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	30%	
Toluene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Xylenes, total	ND	---	1.50	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*102 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*80-120 %*			*"*				

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ANALYTICAL REPORT

HydroCon LLC	Project: PAC Pride Coos Bay	
314 W 15th Street Suite 300	Project Number: 2021-083-001	Report ID:
Vancouver, WA 98660	Project Manager: Chris Sheridan	A2H0993 - 09 08 22 1031

QUALITY CONTROL (QC) SAMPLE RESULTS

Selected Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0097 - EPA 5030C							Water					
Blank (22I0097-BLK1)		Prepared: 09/06/22 09:51		Analyzed: 09/06/22 12:35								
EPA 8260D												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Xylenes, total	ND	---	1.50	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*97 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*102 %*		*80-120 %*			*"*				
LCS (22I0097-BS1)		Prepared: 09/06/22 09:51		Analyzed: 09/06/22 11:23								
EPA 8260D												
Benzene	19.3	---	0.200	ug/L	1	20.0	---	97	80 - 120%	---	---	
Toluene	19.4	---	1.00	ug/L	1	20.0	---	97	80 - 120%	---	---	
Ethylbenzene	19.9	---	0.500	ug/L	1	20.0	---	99	80 - 120%	---	---	
Xylenes, total	63.7	---	1.50	ug/L	1	60.0	---	106	80 - 120%	---	---	
Methyl tert-butyl ether (MTBE)	20.1	---	1.00	ug/L	1	20.0	---	100	80 - 120%	---	---	
Naphthalene	18.8	---	2.00	ug/L	1	20.0	---	94	80 - 120%	---	---	
1,2-Dibromoethane (EDB)	20.0	---	0.500	ug/L	1	20.0	---	100	80 - 120%	---	---	
1,2-Dichloroethane (EDC)	19.7	---	0.500	ug/L	1	20.0	---	98	80 - 120%	---	---	
Isopropylbenzene	21.8	---	1.00	ug/L	1	20.0	---	109	80 - 120%	---	---	
1,2,4-Trimethylbenzene	20.8	---	1.00	ug/L	1	20.0	---	104	80 - 120%	---	---	
1,3,5-Trimethylbenzene	21.1	---	1.00	ug/L	1	20.0	---	105	80 - 120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 95 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*97 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*			*"*				

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Cameron O'Brien, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0025 - EPA 3510C (Acid Extraction)									Water			
Blank (22I0025-BLK1)		Prepared: 09/01/22 11:19		Analyzed: 09/01/22 17:33								
EPA 8270E SIM												
Acenaphthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0727	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0727	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0727	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 68 %*	*Limits: 44-120 %*				*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*92 %*	*50-134 %*				*"*				
LCS (22I0025-BS1)		Prepared: 09/01/22 11:19		Analyzed: 09/01/22 17:58								
EPA 8270E SIM												
Acenaphthene	5.95	---	0.0400	ug/L	1	8.00	---	74	47 - 122%	---	---	
Acenaphthylene	5.71	---	0.0400	ug/L	1	8.00	---	71	41 - 130%	---	---	
Anthracene	6.68	---	0.0400	ug/L	1	8.00	---	84	57 - 123%	---	---	
Benz(a)anthracene	6.75	---	0.0400	ug/L	1	8.00	---	84	58 - 125%	---	---	
Benzo(a)pyrene	7.14	---	0.0400	ug/L	1	8.00	---	89	54 - 128%	---	---	
Benzo(b)fluoranthene	7.64	---	0.0400	ug/L	1	8.00	---	96	53 - 131%	---	---	
Benzo(k)fluoranthene	7.42	---	0.0400	ug/L	1	8.00	---	93	57 - 129%	---	---	
Benzo(g,h,i)perylene	5.87	---	0.0400	ug/L	1	8.00	---	73	50 - 134%	---	---	
Chrysene	7.13	---	0.0400	ug/L	1	8.00	---	89	59 - 123%	---	---	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

HydroCon LLC	Project: PAC Pride Coos Bay	
314 W 15th Street Suite 300	Project Number: 2021-083-001	Report ID:
Vancouver, WA 98660	Project Manager: Chris Sheridan	A2H0993 - 09 08 22 1031

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0025 - EPA 3510C (Acid Extraction)									Water			
LCS (22I0025-BS1)		Prepared: 09/01/22 11:19		Analyzed: 09/01/22 17:58								
Dibenz(a,h)anthracene	7.19	---	0.0400	ug/L	1	8.00	---	90	51 - 134%	---	---	
Fluoranthene	7.21	---	0.0400	ug/L	1	8.00	---	90	57 - 128%	---	---	
Fluorene	6.21	---	0.0400	ug/L	1	8.00	---	78	52 - 124%	---	---	
Indeno(1,2,3-cd)pyrene	6.83	---	0.0400	ug/L	1	8.00	---	85	52 - 134%	---	---	
1-Methylnaphthalene	4.72	---	0.0800	ug/L	1	8.00	---	59	41 - 120%	---	---	
2-Methylnaphthalene	4.58	---	0.0800	ug/L	1	8.00	---	57	40 - 121%	---	---	
Naphthalene	4.50	---	0.0800	ug/L	1	8.00	---	56	40 - 121%	---	---	
Phenanthrene	6.67	---	0.0400	ug/L	1	8.00	---	83	59 - 120%	---	---	
Pyrene	7.12	---	0.0400	ug/L	1	8.00	---	89	57 - 126%	---	---	
Dibenzofuran	6.01	---	0.0400	ug/L	1	8.00	---	75	53 - 120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 67 %*		*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*81 %*		*50-134 %*			*"*					
LCS Dup (22I0025-BSD1)		Prepared: 09/01/22 11:19		Analyzed: 09/01/22 18:24								**Q-19**
EPA 8270E SIM												
Acenaphthene	6.73	---	0.0400	ug/L	1	8.00	---	84	47 - 122%	12	30%	
Acenaphthylene	6.46	---	0.0400	ug/L	1	8.00	---	81	41 - 130%	12	30%	
Anthracene	7.24	---	0.0400	ug/L	1	8.00	---	90	57 - 123%	8	30%	
Benz(a)anthracene	7.16	---	0.0400	ug/L	1	8.00	---	90	58 - 125%	6	30%	
Benzo(a)pyrene	7.61	---	0.0400	ug/L	1	8.00	---	95	54 - 128%	6	30%	
Benzo(b)fluoranthene	8.17	---	0.0400	ug/L	1	8.00	---	102	53 - 131%	7	30%	
Benzo(k)fluoranthene	7.98	---	0.0400	ug/L	1	8.00	---	100	57 - 129%	7	30%	
Benzo(g,h,i)perylene	6.23	---	0.0400	ug/L	1	8.00	---	78	50 - 134%	6	30%	
Chrysene	7.62	---	0.0400	ug/L	1	8.00	---	95	59 - 123%	7	30%	
Dibenz(a,h)anthracene	7.50	---	0.0400	ug/L	1	8.00	---	94	51 - 134%	4	30%	
Fluoranthene	7.75	---	0.0400	ug/L	1	8.00	---	97	57 - 128%	7	30%	
Fluorene	7.06	---	0.0400	ug/L	1	8.00	---	88	52 - 124%	13	30%	
Indeno(1,2,3-cd)pyrene	7.15	---	0.0400	ug/L	1	8.00	---	89	52 - 134%	5	30%	
1-Methylnaphthalene	5.65	---	0.0800	ug/L	1	8.00	---	71	41 - 120%	18	30%	
2-Methylnaphthalene	5.48	---	0.0800	ug/L	1	8.00	---	69	40 - 121%	18	30%	
Naphthalene	5.30	---	0.0800	ug/L	1	8.00	---	66	40 - 121%	16	30%	
Phenanthrene	7.20	---	0.0400	ug/L	1	8.00	---	90	59 - 120%	8	30%	
Pyrene	7.73	---	0.0400	ug/L	1	8.00	---	97	57 - 126%	8	30%	
Dibenzofuran	6.85	---	0.0400	ug/L	1	8.00	---	86	53 - 120%	13	30%	

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314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0025 - EPA 3510C (Acid Extraction)												**Water**
LCS Dup (22I0025-BSD1)			Prepared: 09/01/22 11:19 Analyzed: 09/01/22 18:24									**Q-19**
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 77 %*	*Limits: 44-120 %*	*Dilution: 1x*							
p-Terphenyl-d14 (Surr)			*86 %*	*50-134 %*	*"*							

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22I0066 - EPA 3510C (Fuels/Acid Ext.)												**Water**
Blank (22I0066-BLK2)		Prepared: 09/02/22 11:09		Analyzed: 09/06/22 15:18								**Q-22**
EPA 8270E SIM												
Acenaphthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0727	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0727	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0727	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	

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ANALYTICAL REPORT

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314 W 15th Street Suite 300	Project Number: 2021-083-001	Report ID:
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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

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

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22I0066							
A2H0993-05	Water	NWTPH-Dx LL	08/30/22 17:05	09/02/22 11:09	1060mL/2mL	1000mL/2mL	0.94
A2H0993-06	Water	NWTPH-Dx LL	08/30/22 17:30	09/02/22 11:09	1010mL/2mL	1000mL/2mL	0.99
Batch: 22I0085							
A2H0993-01	Water	NWTPH-Dx LL	08/30/22 10:30	09/06/22 06:43	1010mL/2mL	1000mL/2mL	0.99
A2H0993-02	Water	NWTPH-Dx LL	08/30/22 11:25	09/06/22 06:43	1020mL/2mL	1000mL/2mL	0.98
A2H0993-03	Water	NWTPH-Dx LL	08/30/22 12:25	09/06/22 06:43	1050mL/2mL	1000mL/2mL	0.95
A2H0993-04	Water	NWTPH-Dx LL	08/30/22 16:20	09/06/22 06:43	1000mL/2mL	1000mL/2mL	1.00

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

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22I0059							
A2H0993-03	Water	NWTPH-Gx (MS)	08/30/22 12:25	09/02/22 09:29	5mL/5mL	5mL/5mL	1.00
A2H0993-06	Water	NWTPH-Gx (MS)	08/30/22 17:30	09/02/22 09:29	5mL/5mL	5mL/5mL	1.00
Batch: 22I0097							
A2H0993-01RE1	Water	NWTPH-Gx (MS)	08/30/22 10:30	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-02RE1	Water	NWTPH-Gx (MS)	08/30/22 11:25	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-04RE1	Water	NWTPH-Gx (MS)	08/30/22 16:20	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-05RE1	Water	NWTPH-Gx (MS)	08/30/22 17:05	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-07RE1	Water	NWTPH-Gx (MS)	08/30/22 10:00	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00

Selected Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22I0059							
A2H0993-03	Water	EPA 8260D	08/30/22 12:25	09/02/22 09:29	5mL/5mL	5mL/5mL	1.00
A2H0993-06	Water	EPA 8260D	08/30/22 17:30	09/02/22 09:29	5mL/5mL	5mL/5mL	1.00
Batch: 22I0097							
A2H0993-01RE1	Water	EPA 8260D	08/30/22 10:30	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-02RE1	Water	EPA 8260D	08/30/22 11:25	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-04RE1	Water	EPA 8260D	08/30/22 16:20	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-05RE1	Water	EPA 8260D	08/30/22 17:05	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00
A2H0993-07RE1	Water	EPA 8260D	08/30/22 10:00	09/06/22 09:51	5mL/5mL	5mL/5mL	1.00

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

HydroCon LLC	Project: **PAC Pride Coos Bay**	
314 W 15th Street Suite 300	Project Number: **2021-083-001**	**Report ID:**
Vancouver, WA 98660	Project Manager: **Chris Sheridan**	**A2H0993 - 09 08 22 1031**

SAMPLE PREPARATION INFORMATION

Selected Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor

Polyaromatic Hydrocarbons (PAHs) by EPA 8270E (SIM)

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22I0025							
A2H0993-01	Water	EPA 8270E SIM	08/30/22 10:30	09/01/22 11:21	1060mL/2mL	1000mL/2mL	0.94
A2H0993-02	Water	EPA 8270E SIM	08/30/22 11:25	09/01/22 11:21	1050mL/2mL	1000mL/2mL	0.95
A2H0993-03	Water	EPA 8270E SIM	08/30/22 12:25	09/01/22 11:21	1000mL/2mL	1000mL/2mL	1.00
A2H0993-04	Water	EPA 8270E SIM	08/30/22 16:20	09/01/22 11:21	1040mL/2mL	1000mL/2mL	0.96
A2H0993-04RE1	Water	EPA 8270E SIM	08/30/22 16:20	09/01/22 11:21	1040mL/2mL	1000mL/2mL	0.96

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

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22I0066							
A2H0993-05	Water	EPA 8270E SIM	08/30/22 17:05	09/02/22 11:13	1060mL/2mL	1000mL/2mL	0.94
A2H0993-06	Water	EPA 8270E SIM	08/30/22 17:30	09/02/22 11:13	1010mL/2mL	1000mL/2mL	0.99

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QUALIFIER DEFINITIONS

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

Apex Laboratories

F-11	The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-22	Due to limited sample volume or hold time restraints, the NWTPH-Dx extract was used for the 8270 SIM PAH analysis. Therefore no PAH Surrogates and/or Batch QC results are available. Results are Estimated Values.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

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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. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

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.

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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 sample 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.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

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LABORATORY ACCREDITATION INFORMATION

ORELAP 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.

Apex Laboratories

Cameron O'Brien, Project Manager

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APEX LABS

6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A2H0993 COC 1 of 1

Company: Hydrocon | Project Mgr: Chris Sheridan | Project Name: PAC Pride Coos Bay | Project #: 2021-083-001

Address: 314 W. 15th St, Suite 300 Vancouver, WA 98660 | Phone: 360.703.6079 | Email: CSheridan@hydroconllc.net, Danb@hydroconllc.net | PO #

Sampled by:

Site Location: OR WA CA AK ID ____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pest	RCRA Metals (8)	Priority Metals (13)	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	TCLP Metals (8)	Archive
MW01-W		8/30/22	1030	W	6		X	X		X			X								
MW02-W			1125		6		X	X		X			X								
MW03-W			1225		6		X	X		X			X								
MW01-W			1620		6		X	X		X			X								
MW02-W			1705		6		X	X		X			X								
MW03-W			1730		6		X	X		X			X								
MW1000-W		↓	1000	↓	4			X		X											

Normal Turn Around Time (TAT) = 10 Business Days

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:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date: 8/31/22	Signature: [signature] Date: 8/31/22	Signature: Date:	Signature: Date:
Printed Name: Dan Rervaft Time: 2:33	Printed Name: Anissa kopp Time: 1433	Printed Name: Time:	Printed Name: Time:
Company: Hydrocon	Company: Apex Labs	Company:	Company:

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APEX LABS COOLER RECEIPT FORM

Client: Hydrocon Element WO#: A2H0993

Project/Project #: PAC Pride Coos Bay #2021-083-001

Delivery Info:

Date/time received: 8/31/22 @ 14:33 (8/31/22) By: AKIC

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy____SDS____Other_____

Cooler Inspection Date/time inspected: 8/31/22 @ 1433 By: AKIC

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 (°C)	1.6	1.0					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	Y	Y					
Ice type: (Gel/Real/Other)	Real	Real					
Condition:	Good	Good					

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

Green dots applied to out of temperature samples? Yes (No)

Out of temperature samples form initiated? Yes (No)

Sample Inspection: Date/time inspected: 8/31/22 @ 17:07 By: ZAM

All samples intact? Yes X No ___ Comments:_____

Bottle labels/COCs agree? Yes ~~X~~ ZAM 8/31 No X Comments: COC reads MW1000-W containers reads MW1000.

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments: _____

Do VOA vials have visible headspace? Yes ___ No X NA ____

Comments All VOA's have sediment.

Water samples: pH checked: Yes X No___NA___ pH appropriate? Yes___No X NA____

Comments: MW03-W 17:30 ph 7. No room to preserve. That ZAM 9/1/22

Additional information: 2 ~~Containers~~ Samples ZAM 9/1/22 read MW01-W, MW02-W, MW03-W Matched by different times.

Labeled by: ZAM Witness: DJS Cooler Inspected by: ZAM

Form Y-003 R-00

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