Limited Phase II Environmental Site Assessment and Geotechnical Evaluation

Port of Newport Rogue Brewery Property

2320 SE Marine Science Drive
Newport, Oregon 97365

Cooperative Agreement Number:
BF-01J40301

August 20, 2021

Prepared for:

Oregon Cascades West Council of Governments
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Project No: 185750579

Sign-off Sheet

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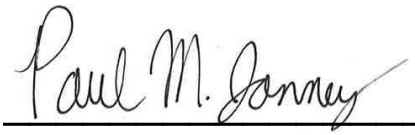
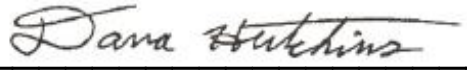
This document was prepared under the supervision and direction of the key staff identified below.

Report Author:



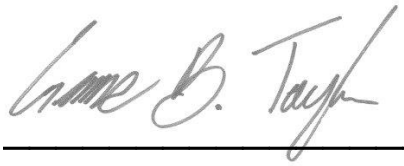
Paul Janney
Geologic Staff

Reviewer:



Dana Hutchins RG
Project Specialist, Geology

Reviewer:



Graeme Taylor
Project Manager

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has prepared this Limited Phase II Environmental Site Assessment (ESA) and Geotechnical Evaluation on behalf of the Oregon Cascade West Council of Governments (OCWCOG) for the property owned by the Port of Newport (Port), located at 2320 SE Marine Science Drive in Newport, Oregon (Property and Project Area). The Property is leased by Rogue Ales and is referred to as the Rogue Brewery. A figure depicting the Property location is provided as **Figure 1**.

The Limited Phase II ESA and Geotechnical Evaluation was conducted in conformance with the OCWCOG's brownfield community-wide assessment cooperative agreement (BF-01J40301) with the United States Environmental Protection Agency (USEPA). All work described herein was completed in accordance with the master Quality Assurance Project Plan (QAPP) prepared for the OCWCOG's Brownfield Community-Wide Assessment Project (Cooperative Agreement Number BF-01J40301). The USEPA approved the master QAPP for the project in an email message dated July 23, 2018. The Limited Phase II ESA and Geotechnical Evaluation was completed in general accordance with the January 2, 2020 *Site-Specific Sampling and Analysis Plan – Rogue Brewery Seawall Assessment* (SSSAP). The SSSAP was approved by the USEPA on January 28, 2020.

1.1 PROPERTY DESCRIPTION, HISTORY, AND PHYSICAL SETTING

The Property consists of two tax lots identified as Lincoln County tax lots 11S11W17A 00400-00 (58.79 acres) and 11S11W17A01200-00 (0.78 acres). The Property location and tax lots are shown on **Figure 1**. The Property is owned and operated by the Port who leases a portion to the Rogue Ales Brewery for their world headquarters (see Project Area on **Figure 2**). The Rogue Ales Brewery consists of an irregularly shaped structure totaling approximately 66,000 square feet for the building footprint and an additional estimated 22,000 square feet dedicated to exterior storage and operational areas. Therefore, the total footprint of the brewery interior and exterior operations (not including parking lot) is approximately 88,000 square feet.

The Property is located in the western flank of the central Oregon Coast Range; a north-south trending geanticline consisting of sedimentary (sandstones, siltstones, and mudstones) and volcanic (flows, tuffs, and breccias) units. Both the sedimentary and volcanic units are intruded by numerous dikes and sills, all of which provide the sediment source carried into the bay by the Yaquina River. Historically the Property and Project Area was a depositional estuarine tidal flat within the Yaquina River, consisting of mainly sand and silt (Kulm, L. D. and Byrne, John V. 1966). Geotechnical reports reviewed by Stantec from the Oregon Water Resources Department (OWRD) show that sand and silty sand was encountered to a depth of 185 feet below ground surface (bgs) approximately 1,000 feet to the east of the Property.

The Rogue Ales Brewery building is currently being supported by the seawall on its northside. On behalf of the Port, an assessment of the structural condition and service life of the seawall was conducted in 2018 (Berger ABAM 2018). The Rogue Brewery Seawall comprises steel soldier piles and concrete

lagging panels tied back with steel rods to a dead-man anchor. Four decades of exposure to the marine environment have resulted in visible deterioration of many of the seawall major structural elements. This deterioration includes corrosion of the steel soldier piles and spalling of the concrete beam/pile cap. In addition, some loss of backfill material through gaps in the concrete lagging panel is apparent as material can be seen in front at the base of the seawall. It is suspected that some historical settlement of the interior floor slab of the brewery may be due to this material loss. Based on the assessment it was recommended to conduct a continuous service-life prediction by establishing the chemical and structural composition of the backfill soil behind the seawall. The Port engaged with a geotechnical engineer (GRI) and a structural engineer (PBS) to recommend specific test methods for the backfill material to evaluate existing conditions and to develop a repair plan. Those recommendations were incorporated into the SSSAP, and specific samples based on those recommendations were collected during the implementation of this Phase II ESA.

Several fuel spills have occurred on the Property within the South Beach Marina and Property parking lots. In 2016 an oil sheen was reported in the South Beach Marina with a strong diesel odor. In 2018, a gasoline spill was reported in the parking area of the Property. The Property is classified by the USEPA Facility Registry System (FRS) as the South Beach Dredge Material Disposal Site. The USEPA Enforcement and Compliance History Information database demonstrates National Pollutant Discharge Elimination System (NPDES) permits associated with the FRS listing as the South Beach Dredge Material Disposal Site for the Property, including an active permit expiring in 2020. A review of historical aerial photographs and agency database records for the Property demonstrates chemicals of potential concern (COPCs) in the fill material at the Project Area may include petroleum hydrocarbons, heavy metals, polychlorinated biphenyls (PCBs), pesticides, and polycyclic aromatic hydrocarbons (PAHs).

2.0 FIELD SAMPLING ACTIVITIES

2.1 PRE-FIELDWORK ACTIVITIES

2.1.1 National Historic Preservation Act Section 106 and Endangered Species Act Consultations

Stantec completed National Historic Preservation Act (NHPA) Section 106 and Endangered Species Act consultations and submitted a letter detailing the findings of the consultations to the USEPA on December 3, 2019. The USEPA responded via email on December 4, 2019 that they concurred with the letter that no finding of significant impact was identified in the consultations.

2.1.2 Public Utility Notification

Prior to any intrusive work at the Property, Stantec called the Utility Notification Center and requested a public underground utility locate. Stantec additionally subcontracted with Applied Professional Services of North Bend, Washington to provide utility clearance of each borehole location.

2.1.3 Health and Safety

A Site-Specific Health and Safety Plan (HASP), as required by Oregon Occupational Safety and Health Division (OR-OSHA) Safety and Health Act and 40 Code of Federal Regulations 1910.120, was prepared to describe field sampling activity safety protocols for Stantec employees engaged in the project. At the start of each day of field sampling activities a “tailgate” meeting was held, and safety protocols were reviewed.

2.2 SAMPLING ACTIVITIES AND SUBSURFACE CONDITIONS

The purpose of the Phase II ESA described herein was to evaluate subsurface soils on the Property. Four borings were completed in the Project Area to evaluate environmental and geotechnical conditions in backfill material and subsurface soils. Stantec coordinated with the Port’s geotechnical and structural engineers assigned to this project (GRI and PBS Engineering, respectively) and during the scope development and during implementation of assessment activities. The subsurface assessment was conducted in accordance with the USEPA-approved SSSAP.

2.2.1 Environmental Soil Sampling and Analysis

Four borings (GP-01 through GP-04) were advanced using a hollow stem auger and mud rotary drilling methods. Borings GP-01 and GP-04 were advanced using the hollow stem auger method until the water table was encountered at approximately 12 feet bgs. The drilling methods were then switched to mud rotary and the borings were advanced to the completion depth of 76.5 feet bgs in each boring. Borings GP-02 and GP-03 were advanced to 10 feet bgs and did not utilize the mud rotary drilling method. A Standard Penetration Test (SPT) was conducted at approximately 5-foot intervals throughout the length

of each boring to estimate the relative density and shear strength parameters of the fill material and/or native sediments. Soil samples were collected from each borehole in the fill material using a split spoon sampler which was advanced using SPT methods and/or a Shelby tube at approximately 5-foot vertical intervals. Groundwater samples were not collected from any of the four borings.

During boring advancement soils were continuously logged by Stantec Registered Geologists (except for intervals where Shelby tubes were collected) using the Unified Soil Classification System (USCS) and screened for visual/olfactory observations and for volatile organic compounds (VOCs) using a photoionization detector (PID) equipped with a 10.2 electron-volt lamp. Soil classification, blow counts, visual/olfactory observations of soil conditions, and PID results are documented on boring logs provided as **Appendix A**.

Fill material was characterized for environmental impacts by generating a single composite sample of the fill material's vertical profile in each of the four borings from 0-10 feet bgs. Soil was collected from each split spoon sample and composited to create a representative sample across the 10-foot interval from each boring. Composite soil samples were submitted for analysis of site COPCs (reported in **Appendix B**) and included the following:

- Hydrocarbon scan by Northwest Method NWTPH-HCID with follow up gasoline range organics (GRO) by Method NWTPH-Gx if GRO is detected in the HCID analysis and diesel range organics (DRO) and oil range organics (ORO) by Method NWTPH-Dx if DRO or ORO are detected in the HCID analysis;
- PAHs by USEPA Method 8270 selected ion monitoring (SIM);
- Priority pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc by USEPA Method 6020/7471B;
- Organochlorine pesticides by USEPA Method 8081B; and,
- PCBs by USEPA Method 8082.

2.2.2 Geotechnical and Structural Soil Sampling and Analysis

Borings GP01 and GP04 were advanced on the western and eastern edges of the Project Area and were the two borings closest to the seawall due to building configuration. These borings were advanced to 76.5 feet bgs for the purpose of evaluating geotechnical parameters at depth. The drill rig tooling was converted from hollow stem auger to mud rotary at the approximate bottom of the fill depth observed to be approximately 12 feet bgs. Soils beneath the fill material are considered to be native soils based on USCS classification. SPTs were conducted at approximately 5-foot intervals to estimate the relative density and shear strength parameters of the encountered materials. Soil samples were collected from each borehole using a split spoon sampler and/or a Shelby tube at approximately 5-foot vertical intervals throughout the length of each boring.

Geotechnical samples were collected and submitted for a selection of the following test methods (reported in **Appendix C**) as outlined below:

- Atterberg limits by ASTM International (ASTM) Method D4318;
- Moisture content by ASTM Method D 2216;
- Moisture content and dry density by ASTM D 2216 / D7263;

- Particle size analysis by ASTM Method D422; and,
- Minimum resistivity by American Association of State Highway and Transportation Officials (AASTHO) Method T288; and,
- Washed Sieve Analysis (material finer than No. 200 sieve) by ASTM Method D1140.

Structural parameter samples were collected and submitted for a selection of the following test methods (reported in **Appendix B)** and outlined below:

- Chloride and sulfate by USEPA Method 9056A; and,
- pH by EPA Method 9045D.

2.2.3 Subsurface Conditions

During boring advancement at the Property, soils were logged by Stantec Registered Geologists. Subsurface materials encountered at the Property generally included four inches of asphalt over clean sands to the maximum explored depth of 76.5 feet bgs. Boring logs describing soil units encountered, blow counts, PID screening results, and depth intervals for soil samples collected for laboratory analysis are provided in **Appendix A**.

2.2.4 Borehole Abandonment and Investigation-Derived Waste

Following environmental and geotechnical sampling, each borehole was abandoned in accordance with OWRD standards by filling the borehole with 3/8” hydrated bentonite chips to approximately one foot below surface grade. Surface restoration at each location was accomplished with cold-patch asphalt.

Following completion of all on-Property work, five 55-gallon drums containing soil and drilling fluids were labeled and stored in an area out of the way of Property activities. Analytical data collected from the Property was used to profile the contents of the drums. Waste drums will be collected from the Property and transported to the Waste Management Hillsboro Landfill for disposal.

3.0 LABORATORY TESTING RESULTS

In the subsections that follow, laboratory testing results from the 2020 Phase II ESA are summarized for each detected environmental analyte. Comparison of testing results to potentially applicable Oregon Department of Environmental Quality (DEQ) risk-based concentrations (RBCs) and to DEQ clean fill screening values for soil are also discussed.

A total of five soil samples (including one duplicate soil sample) were collected during the subsurface investigation at the Property. Soil samples were collected as a composite for the interval from ground surface to 10 feet bgs. The soil samples were submitted for laboratory analysis of total petroleum hydrocarbons (TPH), PAHs, Resource Conservation and Recovery Act (RCRA) priority pollutant metals, VOCs, organochlorine pesticides, and PCBs. None of the samples analyzed had concentrations above laboratory reporting limits for VOCs, organochlorine pesticides, or PCBs. Detected soil concentrations of TPH, PAHs, and metals were compared to DEQ RBCs (DEQ 2018) and DEQ clean fill screening values (DEQ 2019) and summarized in the subsections below.

Soil testing data are summarized for detected concentrations only in **Tables 1 through 3**. Apex Labs laboratory reports and chains of custody are provided as **Appendix B**.

3.1 TOTAL PETROLEUM HYDROCARBONS

Five soil samples (including one duplicate soil sample) were analyzed for the presence of petroleum hydrocarbons by method NWTPH-HCID. Analysis of petroleum hydrocarbons by the NWTPH-HCID method indicated detections in the heavy-oil range in two samples. The samples were submitted for follow-on analysis to quantify the heavy oil-range hydrocarbon concentrations by Method NWTPH-Dx. The maximum detected concentration for ORO was in sample GP04-0-10 at 564 milligrams per kilogram (mg/kg). No DEQ RBCs have been established for oil-range hydrocarbons. Use of diesel RBCs as a surrogate for oil-range hydrocarbons indicates no exceedances of potentially applicable RBCs or clean fill screening values. TPH analytical data are summarized in **Table 1.**

3.2 METALS

Five soil samples (including one duplicate soil sample) were analyzed for EPA priority pollutant metals. All five soil samples analyzed had detections above laboratory reporting limits for arsenic, chromium, copper, lead, nickel, and zinc. None of the detected metals were above DEQ published background metal concentrations for the Coast Range region (DEQ 2018), and were below the most stringent DEQ RBC values. Detected concentrations of metals in soil are summarized in **Table 2**.

3.3 POLYCYCLIC AROMATIC HYDROCARBONS

Five soil samples (including one duplicate soil sample) were analyzed for PAHs. Soil sample GP04-0-10 had detections of 2-methylnaphthalene, naphthalene, and phenanthrene. All other soil samples submitted did not have detections above laboratory reporting limits for PAHs.

Not all detected PAH concentrations have a DEQ RBC value, for this reason a toxic equivalency quotient (TEQ) for benzo(a)pyrene was calculated for each analyzed sample. Calculating a TEQ allows for comparison of a total PAH concentration to the DEQ RBC for benzo(a)pyrene (BaP) expressed as BaP Equivalents. The highest calculated TEQ value was GP04-0-10 at 0 mg/kg. This calculated TEQ value is below even the most stringent RBCs and clean fill screening criteria. Detected concentrations of PAHs in soil samples are summarized in **Table 3.**

3.4 STRUCTURAL PARAMETERS

Structural parameter data will be used by the Port's structural engineer to evaluate subsurface conditions that may impact the structural integrity of the seawall or other Property facilities. Chloride concentrations in analyzed surface composite samples range between non detect (less than 10.3 mg/kg) and 12.1 mg/kg. Sulfate concentrations in analyzed surface composite sample range between non-detect (less than 10.3 mg/kg) and 15.6 mg/kg. Measured soil pH concentrations in analyzed surface soil composite samples range between 8.30 and 9.01 indicating highly alkaline conditions.

3.5 QUALITY ASSURANCE/QUALITY CONTROL

To validate the quality of sampling results, the following quality assurance/quality control (QA/QC) samples were collected during this Phase II ESA:

- One trip blank;
- One field duplicate sample;
- One matrix spike/material spike duplicate (MS/MSD) sample was collected; and,
- Two equipment blanks.

3.5.1 Trip Blank

One trip blank sample (TB01-031720) was submitted for VOC analysis during the implementation of this Phase II ESA. The trip blank was tested for VOCs by EPA Method 8260C. No VOCs were detected in the trip blank indicating no evidence of potentially compromised analytical data.

3.5.2 Field Duplicate Sample

One filed duplicate soil sample GP0XC-0-10 (duplicate of sample GP03-0-10), was collected during the implementation of this Phase II ESA. To assess data accuracy, the relative percent difference (RPD) was calculated for results of detected compounds in both the duplicate and paired samples. Calculated RPDs are included in the Data Validation report, included in **Appendix D**.

3.5.3 Matrix Spike / Matrix Spike Duplicate

One MS/MSD sample was collected from GP02-0-10 during the implementation of this Phase II ESA. Results of the MS/MSD sample analysis is summarized in the Data Validation Report provided as **Appendix D**.

3.5.4 Equipment Blanks

Two equipment blanks (EB01-031720 and EB02-031820) were collected during the implementation of this Phase II ESA. The equipment blanks were collected by pouring deionized water over a properly decontaminated split spoon sampler and collecting the rinsate directly into laboratory-supplied sample containers. The equipment blanks were submitted for TPH, PAHs, PCBs, organochlorine pesticides, and EPA priority pollutant metals. No analytes were detected in the equipment blank samples, indicating that decontamination procedures of sampling equipment used during this Phase II ESA did not introduce contaminants into project samples.

4.0 DATA VALIDATION

All laboratory reports were validated to verify compliance with the project QAPP, and to confirm the usability of the laboratory data. All data including data with qualifiers was deemed usable. The complete data validation report is included as **Appendix D**.

5.0 CONCLUSIONS AND RECOMMENDATIONS

No analytes were detected in soil that indicate that a significant release of petroleum or other hazardous substances has occurred from the historical operations on or near the Property. Based on this assessment and the planned use of the Property for commercial use, no indications of unacceptable risk to human health or the environment have been identified and no additional environmental assessment is recommended for the Property based on current and likely future use. If the planned future use of the Property changes or if groundwater use is anticipated, additional assessment may be warranted.

Subsurface geotechnical and structural evaluations using data collected during this Limited Phase II ESA and Geotechnical Evaluation will be conducted by a team of engineers to be hired by the Port and reported under separate cover. No conclusions or recommendations of geotechnical or structural conditions on the Property were completed in this report.

6.0 LIMITATIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (e.g., utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

7.0 REFERENCES

Berger ABAM 2018. Structural Evaluation Report Draft, Port of Newport Rogue Brewery Seawall. December 2018.

DEQ 2018. Guidance for Risk-Based Decision Making for the Remediation of Contaminated Sites. Concentrations for Individual Chemicals. Updated May 2018.

DEQ 2019. Clean Fill Determinations Internal Management Directive. Materials Management Program. February 21,2019.

GRI 2019. Geotechnical Sampling Coordination for Brownfield Funding memorandum. Rogue Ales Brewery Bulkhead Wall. October 15, 2019.

Stantec 2018. Master Quality Assurance Project Plan for Oregon Cascades West Coalition of Governments. Cooperative Agreement No. BF-01J40301. March 26, 2018.

Kulm, L. D. and Byrne, John V. 1966. "Sedimentary response to hydrography in an Oregon estuary". Department of Oceanography, Oregon State University. Published in Marine Geology. 4 (2): 85–118.

FIGURES

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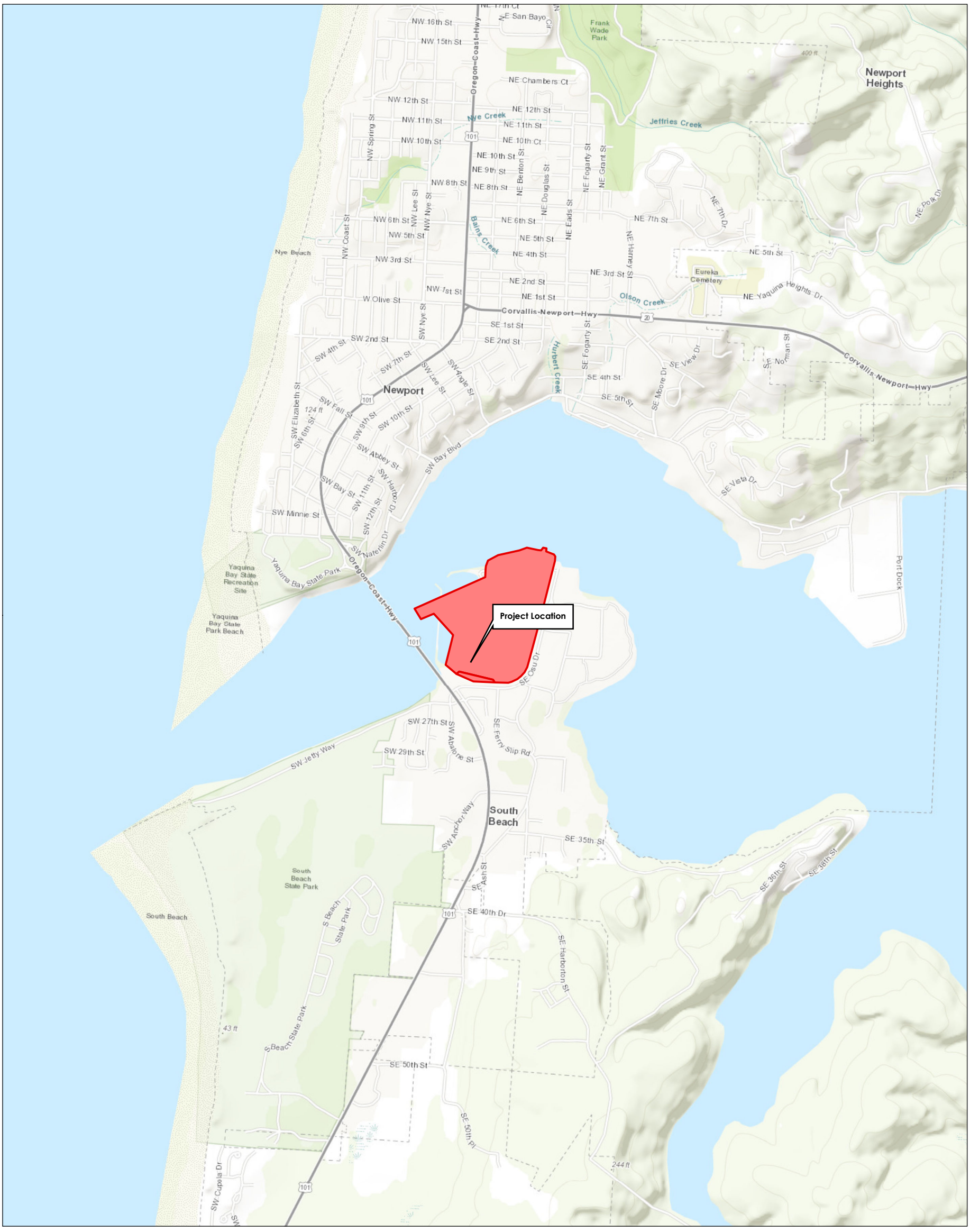

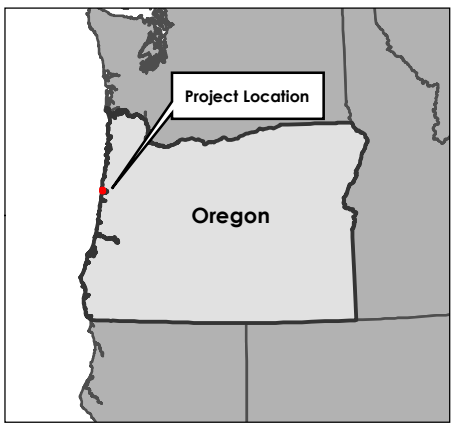

Notes
1. Coordinate System: NAD 1983 2011 StatePlane
2. Data Sources Include: ESRI, Metro, Open Street Maps

Legend

Approximate Tax Lot Areas

0 0.25 0.5 Miles

1:20,000 (At Original document size of 11x17)

N

Stantec

Project Location
2320 SE Marine Science Drive
Newport, OR

185750579
Prepared by JB on 2019-12-09
Technical Review by GT on 2019-12-09
Independent Review by LF on 2019-12-10

Client/Project

Rogue Brewery Seawall Property SSSAP
OCWCOG

Figure No.
1

Title

Property Location Map

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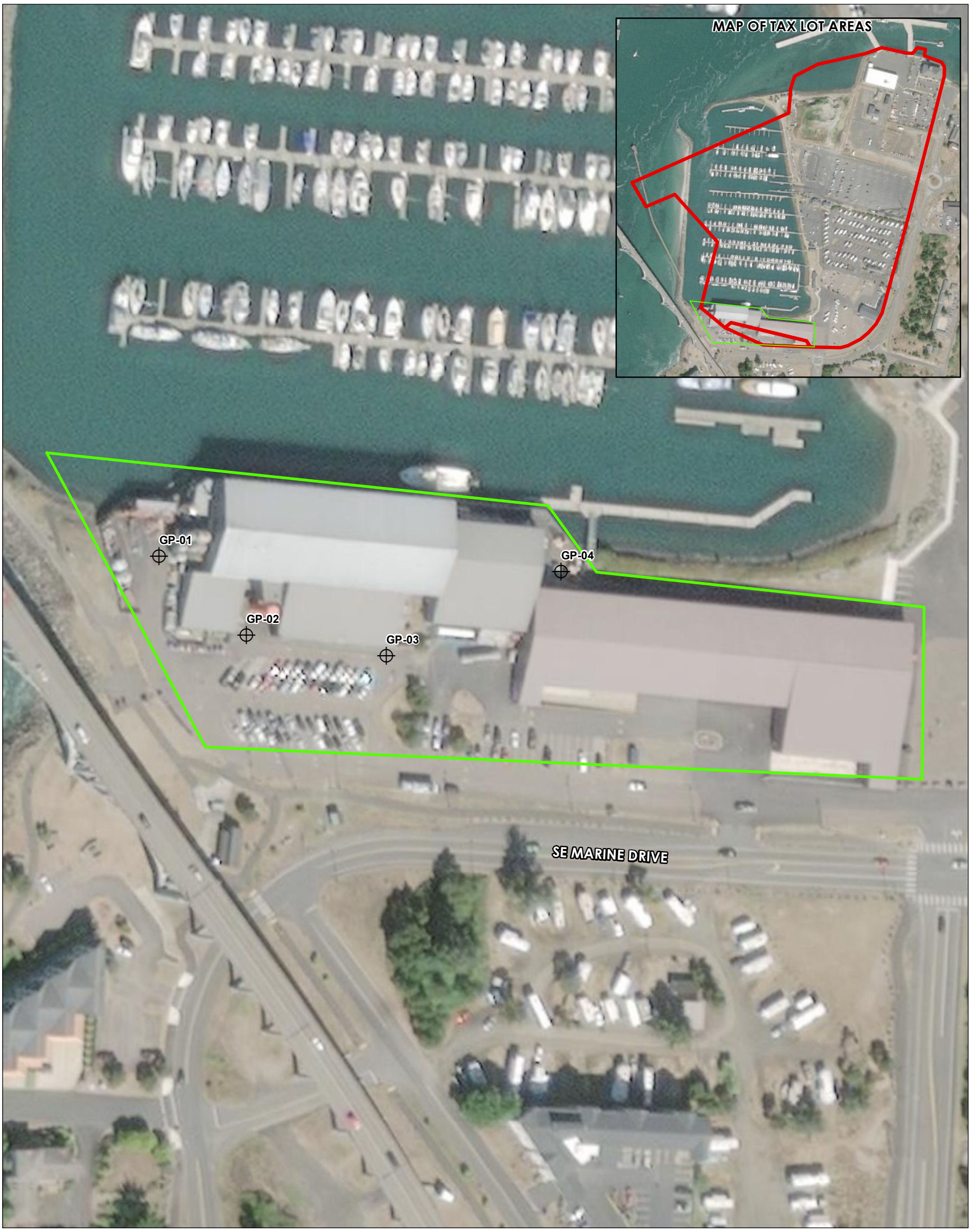

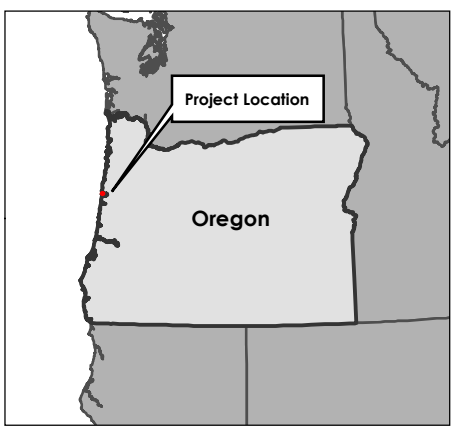

Notes
1. Coordinate System: NAD 1983 2011 StatePlane
2. Data Sources Include: ESRI, Metro, Open Street Maps

Legend

- Proposed Soil Boring Location
- Project Area
- Approximate Tax Lot Boundaries

0 80 160 Feet

1:1,281 (At Original document size of 11x17)

N

Stantec

Project Location
2320 SE Marine Science Drive
Newport, OR

185750579
Prepared by JB on 2019-12-09
Technical Review by GT on 2019-12-09
Independent Review by LF on 2019-12-10

Client/Project

Rogue Brewery Seawall Property SSSAP
OCWCOG

Figure No.
2

Title

Property Layout and Boring Locations Map

TABLES

TABLE 1
Soil Sample Analytical Results - Petroleum Hydrocarbons
Rogue Brewery Seawall
2320 Marine Science Drive
Newport, Oregon

Sample ID	Date Sampled	NWTPH-HCID (Gasoline)	NWTPH-HCID (Diesel)	NWTPH-HCID (Motor Oil)	NWTPH-Gx (Gasoline)	NWTPH-Dx (Diesel)	NWTPH-Dx (Motor Oil)
GP01-0-10	3/18/2020	19.8 U	49.6 U	99.1 U	--	--	--
GP02-0-10	3/17/2020	21.0 U	52.6 U	**DET**	--	25.0 U	**113**
GP03-0-10	3/17/2020	20.3 U	50.8 U	102 U	--	--	--
GP04-0-10	3/17/2020	21.6 U	53.9 U	**DET**	--	25.0 U	**564**
GP0XC-0-10 (FD of GP03-0-10)	3/17/2020	20.1 U	50.2 U	100 U	--	--	--
Clean Fill Screening Values		31	1,100	NA	31	1,100	NA
Occupational Direct Contract RBC		20,000	14,000	NA	20,000	14,000	NA
Construction Worker Direct Contact RBC		9,700	4,600	NA	9,700	4,600	NA
Excavation Worker Direct Contact RBC		>Max	>Max	NA	>Max	>Max	NA
Occupational Volatilization to Outdoor Air RBC		69,000	>Max	NA	69,000	>Max	NA
Occupational Vapor Intrusion into Buildings RBC		>Max	>Max	NA	>Max	>Max	NA

Notes:
All results expressed as milligrams per kilogram
bold = indicates concentrations detected above method reporting limits
shaded gray = indicates concentration exceeds clean fill screening value
highlighted yellow = indicates concentration exceeds one or more potentially applicable RBCs
>Max = Substance is deemed not to pose a risk at any concentration
-- = sample not analyzed
FD = field duplicate
NA = Not Available, no screening value is listed for this analyte.

U = Not detected, the associated value is the method reporting limit

Clean Fill Screening Values, Oregon DEQ April 2019 revision
RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 2
Soil Sample Analytical Results - Metals
Rogue Brewery Seawall
2320 Marine Science Drive
Newport, Oregon

Sample ID	Date Sampled	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
GP01-0-10	3/18/2020	1.15 U	**2.63**	0.230 U	0.230 U	**8.03**	**1.69**	**1.28**	0.0921 U	**4.46**	1.15 U	0.230 U	0.230 U	**11.7**
GP02-0-10	3/17/2020	1.11 U	**2.39**	0.222 U	0.222 U	**7.20**	**1.47**	**1.01**	0.0888 U	**3.96**	1.11 U	0.222 U	0.222 U	**7.85**
GP03-0-10	3/17/2020	1.07 U	**2.65**	0.214 U	0.214 U	**9.54**	**2.10**	**1.15**	0.0857 U	**4.80**	1.07 U	0.214 U	0.214 U	**8.65**
GP04-0-10	3/17/2020	1.14 U	**2.79**	0.228 U	0.228 U	**10.1**	**3.47**	**3.97**	0.0912 U	**6.39**	1.14 U	0.228 U	0.228 U	**15.3**
GP0XC-0-10 (FD of GP03-0-10)	3/17/2020	1.14 U	**3.49**	0.227 U	0.227 U	**7.92**	**1.62**	**1.28**	0.0910 U	**4.70**	1.14 U	0.227 U	0.227 U	**8.76**
Clean Fill/Background Screening Values		0.55	12	2.8	0.54	240	100	34	0.11	160	1.5	0.41	5.4	140
Occupational Direct Contract RBC		NA	1.9	2,300	1,100	>Max	47,000	800	350	22,000	NA	5,800	NA	NA
Construction Worker Direct Contact RBC		NA	15	700	350	530,000	14,000	800	110	7,000	NA	1,800	NA	NA
Excavation Worker Direct Contact RBC		NA	420	19,000	9,700	>Max	390,000	800	2,900	190,000	NA	49,000	NA	NA
Occupational Volatilization to Outdoor Air RBC		NA	NV	NV	NV	NV	NV	NV	NV	NA	NA	NV	NA	NA
Occupational Vapor Intrusion into Buildings RBC		NA	NV	NV	NV	NV	NV	NV	NV	NA	NA	NV	NA	NA

Notes:
All results expressed as milligrams per kilogram
bold = indicates concentrations detected above method reporting limits
shaded gray = indicates concentration exceeds clean fill screening value
highlighted yellow = indicates concentration exceeds background and one or more potentially applicable RBCs
FD = field duplicate
NV = Indicates chemcial is non-volatile
NA = Not Available, no screening value is listed for this analyte
>Max =constituent RBC for this pathway is greater than 1,000,000 mg/kg
U = Not detected, the associated value is the method reporting limit

Clean Fill/Background Screening Values (Coast Range), Oregon DEQ April 2019 revision
RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 3
Soil Sample Analytical Results - Polycyclic Aromatic Hydrocarbons
Rogue Brewery Seawall
2320 Marine Science Drive
Newport, Oregon

Sample ID	Date Sampled	2-Methyl-naphthalene	Naphthalene	Phenanthrene	Benzo[a]-pyrene TEQ
GP01-0-10	3/18/2020	0.0101 U	0.0101 U	0.0101 U	0.0000
GP02-0-10	3/17/2020	0.0101 U	0.0101 U	0.0101 U	0.0000
GP03-0-10	3/17/2020	0.0101 U	0.0101 U	0.0101 U	0.0000
GP04-0-10	3/17/2020	**0.0149**	**0.0623**	**0.0171**	0.0000
GP0XC-0-10 (FD of GP03-0-10)	3/17/2020	0.0105 U	0.0105 U	0.0105 U	0.0000
Clean Fill Screening Values		11	0.077	5.5	0.11
Occupational Direct Contract RBC		NA	23	NA	2.1
Construction Worker Direct Contact RBC		NA	580	NA	17
Excavation Worker Direct Contact RBC		NA	16,000	NA	490
Occupational Volatilization to Outdoor Air RBC		NA	83	NA	NV
Occupational Vapor Intrusion into Buildings RBC		NA	83	NA	NV

Notes:
All results expressed as milligrams per kilogram
bold = indicates concentrations detected above method reporting limits
shaded gray = indicates concentration exceeds clean fill screening value
highlighted yellow = indicates concentration exceeds background and one or more potentially applicable RBCs
FD = field duplicate
NA = Not Available, no screening value is listed for this analyte.
NV = Indicates chemcial is non-volatile
TEQ = Toxic Equivalence Quotient

U = Not detected, the associated value is the method reporting limit

Clean Fill Screening Values, Oregon DEQ April 2019 revision
RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

APPENDICES

Appendix A BORING LOGS

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP01** PAGE 1 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/18/20** COMPLETED: **3/18/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft): EASTING (ft):
LAT: LONG:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **12.5** WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **76.5**
WELL CASING DIA. (in): **NA** BOREHOLE DIA. (in): **4-6.5**
LOGGED BY: **Dana Hutchins** CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
0900			Asphalt						
		SW	**SAND** ; SW; 10YR 6/4 tan to light gray; fine-grained; non plastic; loose; moist; no odor; no staining; strong HCL reaction		GP01-0-10 (composit) at 0930	40%	4 7 9	0.2	
0915	5				GP01-4-5.5 @ 0920	60%	4 7 9	0.0	5
					GP01-0-10 (composit) at 0930	60%	5 10 15	0.0	
					GP01-8-10 @ 1000 Shelby Tube	90%	500-750 PSI		
0930	10						7 9 10	0.0	10
1040	15				GP01-15-16.6 @ 1050	50%	6 3 2		15
		SP-SC	**CLAYEY SAND** ; SP-SC; dark gray to black; fine-grained; low plasticity; loose; wet to saturated; no odor; no staining; strong HCL reaction						
		SW	**SAND TRACE FINES** ; SW; dark gray to black; fine-grained; non plastic; loose; saturated; no odor; no staining; strong HCL reaction		P01-16.5-17.5 @ 1120 Shelby Tube		Max 750 PSI		
					GP01-18-19.5 @ 1130		2 7 15		

GEO FORM 304 ROGUE-BREWERY_GINT_LOGS_20200327.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/12/20

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP01** PAGE 2 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/18/20** COMPLETED: **3/18/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
EASTING (ft):
LAT:
LONG:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **12.5**
WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered**
BOREHOLE DEPTH (ft): **76.5**
WELL CASING DIA. (in): **NA**
BOREHOLE DIA. (in): **4-6.5**
LOGGED BY: **Dana Hutchins**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
1120		SW	**SAND** ; SW; light gray to tan; fine-grained; non plastic; loose; saturated; no odor; no staining; some shell fragments, wood grain laminations at 35' bgs						
1135 25					GP01-25-26.5 @ 1140	90%	19 29 32		25
1140 30					GP01-30-31.5 @ 1145	70%	13 15 11		30
1150 35					GP01-35-36.5 @ 1155	60%	12 11 12		35

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP01** PAGE 3 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/18/20** COMPLETED: **3/18/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft): EASTING (ft):
LAT: LONG:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **12.5** WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **76.5**
WELL CASING DIA. (in): **NA** BOREHOLE DIA. (in): **4-6.5**
LOGGED BY: **Dana Hutchins** CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
1200		SW	SAA		GP01-40-41.5 @ 1205	60%	9 26 26		
1210 45					GP01-45-46.5 @ 1220	90%	7 6 25		45
1225 50					GP01-50-51.5 @ 1235	100%	30 34 32		50
1240 55					GP01-55-56.5 @ 1245		10 15 20		55

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP01** PAGE 4 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/18/20** COMPLETED: **3/18/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft): EASTING (ft):
LAT: LONG:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **12.5** WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered** BOREHOLE DEPTH (ft): **76.5**
WELL CASING DIA. (in): **NA** BOREHOLE DIA. (in): **4-6.5**
LOGGED BY: **Dana Hutchins** CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
1250		SW	SAA		GP01-60-61.5 @ 1300	70%	19 23 30		
1305 65					GP01-65-66.5 @ 1320		29 45 48		65
1325 70					GP01-70-71.5 @ 1335		32 48 50/5"		70
1345 75					GP01-75-.76.5 @ 1400		30 37 34		75
			Borehole terminated at 76.5 feet.						

Drilling method was changed from auger to mud-rotary at 10 feet bgs.

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP02** PAGE 1 OF 1

Stantec

DRILLING / INSTALLATION:
STARTED **3/17/20** COMPLETED: **3/17/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
EASTING (ft):
LAT:
LONG:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **Not Encountered**
WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered**
BOREHOLE DEPTH (ft): **11.0**
WELL CASING DIA. (in): **NA**
BOREHOLE DIA. (in): **6.5**
LOGGED BY: **Dana Hutchins**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
			Asphalt						
		SW	**SAND** ; SW; 10YR 7/1 light gray; fine-grained; non plastic; loose; moist; no odor; no staining; slight HCL reaction		GP02-0-10 (composite) @ 1110	100%	5 9 10	0.1	
5					GP02-4-5.5 @ 1120	100%	3 9 13	0.0	5
					GP02-0-10 (composite) @ 1110	100%	6 11 12	0.0	
					GP02-8-9.5 @ 1145 Shelby tube	1'	750 Max PSI		
10							8 12 15	0.0	10
			Borehole terminated at 11 feet.						
15									

GEO FORM 304 ROGUE-BREWERY_GINT_LOGS_20200327.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/12/20

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP03** PAGE 1 OF 1

Stantec

DRILLING / INSTALLATION:
STARTED **3/17/20** COMPLETED: **3/17/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
EASTING (ft):
LAT:
LONG:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **Not Encountered**
WELL DEPTH (ft): **---**
STATIC DTW (ft): **Not Encountered**
BOREHOLE DEPTH (ft): **11.0**
WELL CASING DIA. (in): **NA**
BOREHOLE DIA. (in): **6.5**
LOGGED BY: **Dana Hutchins**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
			Asphalt						
		SW	**SAND** ; SW; 10YR 7/1 light gray; fine-grained; non plastic; loose; moist; no odor; no staining; slight HCL reaction		GP03-0-10 (Composite) @ 1030		8 12 15	0.2	
					GP03-2.5-4 @ 0940	100%	7 6 14	0.0	
5									5
					GP03-0-10 (Composite) @ 1030	100%	6 8 12	0.0	
					GP03-8-9.5 @ 1025 Shelby Tube	80%	Max 750 PSI		
10							9 13 18	0.0	10
			Borehole terminated at 11 feet.						
15									

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP04** PAGE 1 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/17/20** COMPLETED: **3/17/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
LAT:
GROUND ELEV (ft):
INITIAL DTW (ft): **11.5**
STATIC DTW (ft): **Not Encountered**
WELL CASING DIA. (in): **NA**
LOGGED BY: **Dana Hutchins**

EASTING (ft):
LONG:
TOC ELEV (ft):
WELL DEPTH (ft): **---**
BOREHOLE DEPTH (ft): **76.5**
BOREHOLE DIA. (in): **4-6.5**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
			Asphalt						
		SW	**SAND** ; SW; 2.5YR 7/1 light gray; fine-grained; non plastic; loose; moist; no odor; no staining; strong HCL reaction						
		CL	**GRAVELLY CLAY LITTLE FINE SAND** ; CL; reddish brown; low plasticity; medium dense to loose; moist; no odor		GP04-0-10 (Composite) @ 1310	100%	9 13 14	0.0	
		SW	**SAND** ; SW; 2.5YR 7/1 light gray; fine-grained; non plastic; loose; moist; no odor; no staining; strong HCL reaction, 20% fines from 6.5-7' bgs, wet-sat at 11.5' bgs.		GP04-4-5.5 @ 1315	100%	5 8 8	0.0	
5					GP04-0-10 (Composite) @ 1310	100%	3 5 3	0.0	5
					GP04-0-8-10 @ 1340 Shelby Tube	90%	300-500 PSI		
10						100%	1 2 1	0.0	10
15		SP	**SAND LITTLE GRAVEL** ; SP; 10YR 5/1 gray; fine-grained; non plastic; loose; saturated; no odor; no staining; subrounded; trace shell fragments		GP04-15-16.5 @ 1430		8 12 16		15

GEO FORM 304 ROGUE-BREWERY_GINT_LOGS_20200327.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/12/20

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP04** PAGE 2 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/17/20** COMPLETED: **3/17/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
LAT:
GROUND ELEV (ft):
INITIAL DTW (ft): **11.5**
STATIC DTW (ft): **Not Encountered**
WELL CASING DIA. (in): **NA**
LOGGED BY: **Dana Hutchins**

EASTING (ft):
LONG:
TOC ELEV (ft):
WELL DEPTH (ft): **---**
BOREHOLE DEPTH (ft): **76.5**
BOREHOLE DIA. (in): **4-6.5**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
		SP	SAA		GP04-20-21.5 @ 1440	50%	5 5 4		
25		SW	**SAND** ; SW; 10YR 4/1 gray; fine-grained; non plastic; loose; saturated; no odor; no staining; little shell fragments @ 35' and 55' bgs, some wood fragments @ 36.5' bgs		GP04-25-26.6 @ 1450	60%	7 14 20		25
30					GP04-30-31.5 @ 1500	50%	7 13 18		30
35					GP04-35-36.5 @ 1510		8 7 19		35

GEO FORM 304 ROGUE-BREWERY_GINT_LOGS_20200327.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/12/20

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP04** PAGE 3 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/17/20** COMPLETED: **3/17/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
LAT:
GROUND ELEV (ft):
INITIAL DTW (ft): **11.5**
STATIC DTW (ft): **Not Encountered**
WELL CASING DIA. (in): **NA**
LOGGED BY: **Dana Hutchins**

EASTING (ft):
LONG:
TOC ELEV (ft):
WELL DEPTH (ft): **---**
BOREHOLE DEPTH (ft): **76.5**
BOREHOLE DIA. (in): **4-6.5**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
		SW	SAA		GP04-40-41.5 @ 1520	80%	10 16 23		
45					GP04-45-46.5 @ 1540	90%	25 30 36		45
50					GP04-50-51.5 @ 1550	70%	13 21 32		50
55					GP04-55-56.5 @ 1600	80%	15 16 16		55

PROJECT: **Rogue Brewery Seawall**
LOCATION: **2320 SE Marine Science Dr, Newport Oregon**
PROJECT NUMBER: **185750579**

WELL / PROBEHOLE / BOREHOLE NO **GP04** PAGE 4 OF 4

Stantec

DRILLING / INSTALLATION:
STARTED **3/17/20** COMPLETED: **3/17/20**
DRILLING COMPANY: **Western States**
DRILLING EQUIPMENT: **Auger CME 550**
DRILLING METHOD: **Auger/Mud Rotory**
SAMPLING EQUIPMENT: **Split spoon**

NORTHING (ft):
LAT:
GROUND ELEV (ft):
INITIAL DTW (ft): **11.5**
STATIC DTW (ft): **Not Encountered**
WELL CASING DIA. (in): **NA**
LOGGED BY: **Dana Hutchins**

EASTING (ft):
LONG:
TOC ELEV (ft):
WELL DEPTH (ft): **---**
BOREHOLE DEPTH (ft): **76.5**
BOREHOLE DIA. (in): **4-6.5**
CHECKED BY:

Depth (feet)	Graphic Log	USCS	Description	Sample	Sample Information	Measured Recov. (feet)	Blow Count	Headspace FID/PID (PPM)	Depth (feet)
		SW	SAA		GP04-60-61.5 @ 1615	70%	21 25 30		
65					GP04-65-66.5 @ 1635	80%	27 32 31		65
70					GP04-70-71.5 @ 1650		26 30 32		70
75					GP04-75-76.5 @ 1720		25 28 32		75

Borehole terminated at 76.5 feet.

Drilling method was changed from auger to mud-rotary at 10 feet bgs.

GEO FORM 304 ROGUE-BREWERY_GINT_LOGS_20200327.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/12/20

Appendix B APEX LAB REPORT AND CHAIN OF CUSTODY

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Thursday, April 2, 2020

Graeme Taylor
Stantec Portland
601 SW 2nd Ave Suite 1400
Portland, OR 97204

RE: A0C0717 - Rogue Brewery - 185750579

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 A0C0717, which was received by the laboratory on 3/19/2020 at 3:05:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler#1	3.6	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.

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP01-0-10	A0C0717-01	Soil	03/18/20 09:30	03/19/20 15:05
GP02-0-10	A0C0717-02	Soil	03/17/20 11:10	03/19/20 15:05
GP03-0-10	A0C0717-03	Soil	03/17/20 10:05	03/19/20 15:05
GP04-0-10	A0C0717-04	Soil	03/17/20 13:10	03/19/20 15:05
GP0XC-0-10	A0C0717-05	Soil	03/17/20 10:30	03/19/20 15:05
EB01-031720	A0C0717-06	Water	03/17/20 17:00	03/19/20 15:05
EB02-031820	A0C0717-07	Water	03/18/20 14:30	03/19/20 15:05
TB01-031720	A0C0717-08	Water	03/17/20 00:00	03/19/20 15:05

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**		**Batch: 0030775**		
Gasoline Range Organics	ND	---	19.8	mg/kg dry	1	03/23/20 22:41	NWTPH-HCID	
Diesel Range Organics	ND	---	49.6	mg/kg dry	1	03/23/20 22:41	NWTPH-HCID	
Oil Range Organics	ND	---	99.1	mg/kg dry	1	03/23/20 22:41	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*100 %*	*Limits: 50-150 %*	*1*	*03/23/20 22:41*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*96 %*	*50-150 %*	*1*	*03/23/20 22:41*	*NWTPH-HCID*	
GP02-0-10 (A0C0717-02)				**Matrix: Soil**		**Batch: 0030775**		
Gasoline Range Organics	ND	---	21.0	mg/kg dry	1	03/23/20 23:02	NWTPH-HCID	
Diesel Range Organics	ND	---	52.6	mg/kg dry	1	03/23/20 23:02	NWTPH-HCID	
Oil Range Organics	DET	---	105	mg/kg dry	1	03/23/20 23:02	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*93 %*	*Limits: 50-150 %*	*1*	*03/23/20 23:02*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*91 %*	*50-150 %*	*1*	*03/23/20 23:02*	*NWTPH-HCID*	
GP03-0-10 (A0C0717-03)				**Matrix: Soil**		**Batch: 0030775**		
Gasoline Range Organics	ND	---	20.3	mg/kg dry	1	03/23/20 23:22	NWTPH-HCID	
Diesel Range Organics	ND	---	50.8	mg/kg dry	1	03/23/20 23:22	NWTPH-HCID	
Oil Range Organics	ND	---	102	mg/kg dry	1	03/23/20 23:22	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*97 %*	*Limits: 50-150 %*	*1*	*03/23/20 23:22*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*95 %*	*50-150 %*	*1*	*03/23/20 23:22*	*NWTPH-HCID*	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030775**		
Gasoline Range Organics	ND	---	21.6	mg/kg dry	1	03/23/20 23:43	NWTPH-HCID	
Diesel Range Organics	ND	---	53.9	mg/kg dry	1	03/23/20 23:43	NWTPH-HCID	
Oil Range Organics	DET	---	108	mg/kg dry	1	03/23/20 23:43	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*99 %*	*Limits: 50-150 %*	*1*	*03/23/20 23:43*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*97 %*	*50-150 %*	*1*	*03/23/20 23:43*	*NWTPH-HCID*	
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**		**Batch: 0030775**		
Gasoline Range Organics	ND	---	20.1	mg/kg dry	1	03/24/20 00:03	NWTPH-HCID	
Diesel Range Organics	ND	---	50.2	mg/kg dry	1	03/24/20 00:03	NWTPH-HCID	
Oil Range Organics	ND	---	100	mg/kg dry	1	03/24/20 00:03	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*101 %*	*Limits: 50-150 %*	*1*	*03/24/20 00:03*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*98 %*	*50-150 %*	*1*	*03/24/20 00:03*	*NWTPH-HCID*	
EB01-031720 (A0C0717-06)				**Matrix: Water**		**Batch: 0030801**		
Gasoline Range Organics	ND	---	0.114	mg/L	1	03/24/20 05:34	NWTPH-HCID	
Diesel Range Organics	ND	---	0.284	mg/L	1	03/24/20 05:34	NWTPH-HCID	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB01-031720 (A0C0717-06)				**Matrix: Water**		**Batch: 0030801**		
Oil Range Organics	ND	---	0.284	mg/L	1	03/24/20 05:34	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*97 %*	*Limits: 50-150 %*	*1*	*03/24/20 05:34*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*79 %*	*50-150 %*	*1*	*03/24/20 05:34*	*NWTPH-HCID*	
EB02-031820 (A0C0717-07)				**Matrix: Water**		**Batch: 0030801**		
Gasoline Range Organics	ND	---	0.0980	mg/L	1	03/24/20 05:57	NWTPH-HCID	
Diesel Range Organics	ND	---	0.245	mg/L	1	03/24/20 05:57	NWTPH-HCID	
Oil Range Organics	ND	---	0.245	mg/L	1	03/24/20 05:57	NWTPH-HCID	
Surrogate: o-Terphenyl (Surr)		*Recovery:*	*90 %*	*Limits: 50-150 %*	*1*	*03/24/20 05:57*	*NWTPH-HCID*	
4-Bromofluorobenzene (Surr)			*77 %*	*50-150 %*	*1*	*03/24/20 05:57*	*NWTPH-HCID*	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

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
GP02-0-10 (A0C0717-02)				**Matrix: Soil**		**Batch: 0030823**		
Diesel	ND	---	25.0	mg/kg dry	1	03/24/20 22:40	NWTPH-Dx	
Oil	**113**	---	50.0	mg/kg dry	1	03/24/20 22:40	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*		*Limits: 50-150 %*	*1*	*03/24/20 22:40*	*NWTPH-Dx*	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030823**		
Diesel	ND	---	25.0	mg/kg dry	1	03/24/20 23:03	NWTPH-Dx	
Oil	**564**	---	50.0	mg/kg dry	1	03/24/20 23:03	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*03/24/20 23:03*	*NWTPH-Dx*	

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Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB01-031720 (A0C0717-08)				**Matrix: Water**		**Batch: 0030828**		
Acetone	ND	---	20.0	ug/L	1	03/24/20 13:39	EPA 8260C	
Acrylonitrile	ND	---	2.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Benzene	ND	---	0.200	ug/L	1	03/24/20 13:39	EPA 8260C	
Bromobenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Bromochloromethane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Bromodichloromethane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Bromoform	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Bromomethane	ND	---	5.00	ug/L	1	03/24/20 13:39	EPA 8260C	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	03/24/20 13:39	EPA 8260C	
n-Butylbenzene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
sec-Butylbenzene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
tert-Butylbenzene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Carbon disulfide	ND	---	10.0	ug/L	1	03/24/20 13:39	EPA 8260C	
Carbon tetrachloride	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Chlorobenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Chloroethane	ND	---	5.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Chloroform	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Chloromethane	ND	---	5.00	ug/L	1	03/24/20 13:39	EPA 8260C	
2-Chlorotoluene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
4-Chlorotoluene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Dibromochloromethane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Dibromomethane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB01-031720 (A0C0717-08)				**Matrix: Water**		**Batch: 0030828**		
Ethylbenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	03/24/20 13:39	EPA 8260C	
2-Hexanone	ND	---	10.0	ug/L	1	03/24/20 13:39	EPA 8260C	
Isopropylbenzene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Methylene chloride	ND	---	10.0	ug/L	1	03/24/20 13:39	EPA 8260C	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	03/24/20 13:39	EPA 8260C	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Naphthalene	ND	---	2.00	ug/L	1	03/24/20 13:39	EPA 8260C	
n-Propylbenzene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Styrene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
Toluene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
Vinyl chloride	ND	---	0.400	ug/L	1	03/24/20 13:39	EPA 8260C	
m,p-Xylene	ND	---	1.00	ug/L	1	03/24/20 13:39	EPA 8260C	
o-Xylene	ND	---	0.500	ug/L	1	03/24/20 13:39	EPA 8260C	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*107 %*	*Limits:*	*80-120 %*	*1*	*03/24/20 13:39*	*EPA 8260C*	
Toluene-d8 (Surr)			*105 %*		*80-120 %*	*1*	*03/24/20 13:39*	*EPA 8260C*	
4-Bromofluorobenzene (Surr)			*99 %*		*80-120 %*	*1*	*03/24/20 13:39*	*EPA 8260C*	

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**		**Batch: 0030757**		**C-07**
Aroclor 1016	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Aroclor 1221	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Aroclor 1232	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Aroclor 1242	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Aroclor 1248	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Aroclor 1254	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Aroclor 1260	ND	---	0.0106	mg/kg dry	1	03/24/20 08:19	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 101 %*		*Limits: 60-125 %*	*1*	*03/24/20 08:19*	*EPA 8082A*	
GP02-0-10 (A0C0717-02)				**Matrix: Soil**		**Batch: 0030757**		**C-07**
Aroclor 1016	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1221	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1232	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1242	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1248	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1254	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1260	ND	---	0.00996	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 97 %*		*Limits: 60-125 %*	*1*	*03/24/20 10:40*	*EPA 8082A*	
GP03-0-10 (A0C0717-03)				**Matrix: Soil**		**Batch: 0030757**		**C-07**
Aroclor 1016	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Aroclor 1221	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Aroclor 1232	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Aroclor 1242	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Aroclor 1248	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Aroclor 1254	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Aroclor 1260	ND	---	0.00983	mg/kg dry	1	03/24/20 09:30	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 95 %*		*Limits: 60-125 %*	*1*	*03/24/20 09:30*	*EPA 8082A*	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030757**		**C-07**
Aroclor 1016	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	
Aroclor 1221	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	
Aroclor 1232	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	
Aroclor 1242	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	
Aroclor 1248	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	
Aroclor 1254	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	
Aroclor 1260	ND	---	0.0109	mg/kg dry	1	03/24/20 10:05	EPA 8082A	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030757**		**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 86 %*	*Limits: 60-125 %*		*1*	*03/24/20 10:05*	*EPA 8082A*	
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**		**Batch: 0030757**		**C-07**
Aroclor 1016	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1221	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1232	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1242	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1248	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1254	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Aroclor 1260	ND	---	0.00988	mg/kg dry	1	03/24/20 10:40	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 95 %*	*Limits: 60-125 %*		*1*	*03/24/20 10:40*	*EPA 8082A*	
EB01-031720 (A0C0717-06)				**Matrix: Water**		**Batch: 0030749**		**C-07**
Aroclor 1016	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Aroclor 1221	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Aroclor 1232	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Aroclor 1242	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Aroclor 1248	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Aroclor 1254	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Aroclor 1260	ND	---	0.120	ug/L	1	03/23/20 10:07	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 74 %*	*Limits: 40-135 %*		*1*	*03/23/20 10:07*	*EPA 8082A*	
EB02-031820 (A0C0717-07)				**Matrix: Water**		**Batch: 0030749**		**C-07**
Aroclor 1016	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Aroclor 1221	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Aroclor 1232	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Aroclor 1242	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Aroclor 1248	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Aroclor 1254	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Aroclor 1260	ND	---	0.114	ug/L	1	03/23/20 10:25	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 68 %*	*Limits: 40-135 %*		*1*	*03/23/20 10:25*	*EPA 8082A*	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Aldrin	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
alpha-BHC	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
beta-BHC	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
delta-BHC	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
cis-Chlordane	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
trans-Chlordane	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
4,4'-DDD	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
4,4'-DDE	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
4,4'-DDT	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Dieldrin	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Endosulfan I	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Endosulfan II	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Endosulfan sulfate	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Endrin	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Endrin Aldehyde	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Endrin ketone	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Heptachlor	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Heptachlor epoxide	ND	---	0.00206	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Methoxychlor	ND	---	0.00619	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Chlordane (Technical)	ND	---	0.0619	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Toxaphene (Total)	ND	---	0.0619	mg/kg dry	1	03/23/20 12:49	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*76 %*	*Limits: 42-129 %*	*1*	*03/23/20 12:49*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*104 %*	*55-130 %*	*1*	*03/23/20 12:49*	*EPA 8081B*	
GP02-0-10 (A0C0717-02RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Aldrin	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
alpha-BHC	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
beta-BHC	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
delta-BHC	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
cis-Chlordane	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
trans-Chlordane	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
4,4'-DDD	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
4,4'-DDE	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
4,4'-DDT	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Dieldrin	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Endosulfan I	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP02-0-10 (A0C0717-02RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Endosulfan II	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Endosulfan sulfate	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Endrin	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Endrin Aldehyde	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Endrin ketone	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Heptachlor	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Heptachlor epoxide	ND	---	0.00206	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Methoxychlor	ND	---	0.00617	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Chlordane (Technical)	ND	---	0.0617	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Toxaphene (Total)	ND	---	0.0617	mg/kg dry	1	03/23/20 13:05	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*55 %*	*Limits: 42-129 %*	*1*	*03/23/20 13:05*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*108 %*	*55-130 %*	*1*	*03/23/20 13:05*	*EPA 8081B*	
GP03-0-10 (A0C0717-03RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Aldrin	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
alpha-BHC	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
beta-BHC	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
delta-BHC	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
cis-Chlordane	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
trans-Chlordane	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
4,4'-DDD	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
4,4'-DDE	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
4,4'-DDT	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Dieldrin	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Endosulfan I	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Endosulfan II	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Endosulfan sulfate	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Endrin	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Endrin Aldehyde	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Endrin ketone	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Heptachlor	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Heptachlor epoxide	ND	---	0.00199	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Methoxychlor	ND	---	0.00598	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Chlordane (Technical)	ND	---	0.0598	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Toxaphene (Total)	ND	---	0.0598	mg/kg dry	1	03/23/20 13:38	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*64 %*	*Limits: 42-129 %*	*1*	*03/23/20 13:38*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*103 %*	*55-130 %*	*1*	*03/23/20 13:38*	*EPA 8081B*	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP04-0-10 (A0C0717-04RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Aldrin	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
alpha-BHC	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
beta-BHC	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
delta-BHC	ND	---	0.00252	mg/kg dry	1	03/23/20 13:55	EPA 8081B	R-02
gamma-BHC (Lindane)	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
cis-Chlordane	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
trans-Chlordane	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
4,4'-DDD	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
4,4'-DDE	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
4,4'-DDT	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Dieldrin	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Endosulfan I	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Endosulfan II	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Endosulfan sulfate	ND	---	0.00241	mg/kg dry	1	03/23/20 13:55	EPA 8081B	R-02
Endrin	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Endrin Aldehyde	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Endrin ketone	ND	---	0.00318	mg/kg dry	1	03/23/20 13:55	EPA 8081B	R-02
Heptachlor	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Heptachlor epoxide	ND	---	0.00219	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Methoxychlor	ND	---	0.00658	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Chlordane (Technical)	ND	---	0.0658	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Toxaphene (Total)	ND	---	0.0658	mg/kg dry	1	03/23/20 13:55	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*79 %*	*Limits: 42-129 %*	*1*	*03/23/20 13:55*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*125 %*	*55-130 %*	*1*	*03/23/20 13:55*	*EPA 8081B*	
GP0XC-0-10 (A0C0717-05RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Aldrin	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
alpha-BHC	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
beta-BHC	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
delta-BHC	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
cis-Chlordane	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
trans-Chlordane	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
4,4'-DDD	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
4,4'-DDE	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
4,4'-DDT	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Dieldrin	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP0XC-0-10 (A0C0717-05RE1)				**Matrix: Soil**		**Batch: 0030762**		**C-05**
Endosulfan I	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Endosulfan II	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Endosulfan sulfate	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Endrin	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Endrin Aldehyde	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Endrin ketone	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Heptachlor	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Heptachlor epoxide	ND	---	0.00204	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Methoxychlor	ND	---	0.00611	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Chlordane (Technical)	ND	---	0.0611	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Toxaphene (Total)	ND	---	0.0611	mg/kg dry	1	03/23/20 14:28	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*66 %*	*Limits: 42-129 %*	*1*	*03/23/20 14:28*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*107 %*	*55-130 %*	*1*	*03/23/20 14:28*	*EPA 8081B*	
EB01-031720 (A0C0717-06)				**Matrix: Water**		**Batch: 0030826**		
Aldrin	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
alpha-BHC	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
beta-BHC	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
delta-BHC	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
cis-Chlordane	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
trans-Chlordane	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
4,4'-DDD	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
4,4'-DDE	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
4,4'-DDT	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Dieldrin	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Endosulfan I	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Endosulfan II	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Endosulfan sulfate	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Endrin	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Endrin Aldehyde	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Endrin ketone	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Heptachlor	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Heptachlor epoxide	ND	---	0.0100	ug/L	1	03/26/20 13:45	EPA 8081B	
Methoxychlor	ND	---	0.0300	ug/L	1	03/26/20 13:45	EPA 8081B	
Chlordane (Technical)	ND	---	0.375	ug/L	1	03/26/20 13:45	EPA 8081B	
Toxaphene (Total)	ND	---	0.375	ug/L	1	03/26/20 13:45	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*77 %*	*Limits: 25-140 %*	*1*	*03/26/20 13:45*	*EPA 8081B*	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

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503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB01-031720 (A0C0717-06)				**Matrix: Water**		**Batch: 0030826**		
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 77 %*	*Limits: 30-135 %*	*1*	*03/26/20 13:45*	*EPA 8081B*	
EB02-031820 (A0C0717-07)				**Matrix: Water**		**Batch: 0030826**		
Aldrin	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
alpha-BHC	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
beta-BHC	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
delta-BHC	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
cis-Chlordane	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
trans-Chlordane	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
4,4'-DDD	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
4,4'-DDE	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
4,4'-DDT	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Dieldrin	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Endosulfan I	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Endosulfan II	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Endosulfan sulfate	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Endrin	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Endrin Aldehyde	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Endrin ketone	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Heptachlor	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Heptachlor epoxide	ND	---	0.0108	ug/L	1	03/26/20 14:02	EPA 8081B	
Methoxychlor	ND	---	0.0323	ug/L	1	03/26/20 14:02	EPA 8081B	
Chlordane (Technical)	ND	---	0.403	ug/L	1	03/26/20 14:02	EPA 8081B	
Toxaphene (Total)	ND	---	0.403	ug/L	1	03/26/20 14:02	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 74 %*	*Limits: 25-140 %*	*1*	*03/26/20 14:02*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*77 %*	*30-135 %*	*1*	*03/26/20 14:02*	*EPA 8081B*	

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Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**		**Batch: 0030726**		
Acenaphthene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Chrysene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Fluorene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Naphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Phenanthrene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0101	mg/kg dry	1	03/20/20 11:56	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*78 %*	*Limits: 46-120 %*	*1*	*03/20/20 11:56*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*83 %*	*49-126 %*	*1*	*03/20/20 11:56*	*EPA 8270D (SIM)*	
GP02-0-10 (A0C0717-02)				**Matrix: Soil**		**Batch: 0030726**		
Acenaphthene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Chrysene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Fluorene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	

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Lisa Domenighini, Client Services Manager

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP02-0-10 (A0C0717-02)				**Matrix: Soil**		**Batch: 0030726**		
Naphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Phenanthrene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0101	mg/kg dry	1	03/20/20 12:47	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*77 %*	*Limits: 46-120 %*	*1*	*03/20/20 12:47*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*82 %*	*49-126 %*	*1*	*03/20/20 12:47*	*EPA 8270D (SIM)*	
GP03-0-10 (A0C0717-03)				**Matrix: Soil**		**Batch: 0030726**		
Acenaphthene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Chrysene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Fluorene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Naphthalene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Phenanthrene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Pyrene	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0101	mg/kg dry	1	03/20/20 13:12	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*78 %*	*Limits: 46-120 %*	*1*	*03/20/20 13:12*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*86 %*	*49-126 %*	*1*	*03/20/20 13:12*	*EPA 8270D (SIM)*	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030726**		
Acenaphthene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Anthracene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0167	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	R-02
Benzo(a)pyrene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030726**		
Benzo(g,h,i)perylene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Chrysene	ND	---	0.0178	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	R-02
Dibenz(a,h)anthracene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Fluorene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
2-Methylnaphthalene	**0.0149**	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Naphthalene	**0.0623**	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Phenanthrene	**0.0171**	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Pyrene	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0104	mg/kg dry	1	03/20/20 13:38	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*79 %*	*Limits: 46-120 %*	*1*	*03/20/20 13:38*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*88 %*	*49-126 %*	*1*	*03/20/20 13:38*	*EPA 8270D (SIM)*	
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**		**Batch: 0030726**		
Acenaphthene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Anthracene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Chrysene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Fluorene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Naphthalene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Phenanthrene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Pyrene	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0105	mg/kg dry	1	03/20/20 14:03	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*73 %*	*Limits: 46-120 %*	*1*	*03/20/20 14:03*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*85 %*	*49-126 %*	*1*	*03/20/20 14:03*	*EPA 8270D (SIM)*	

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Lisa Domenighini, Client Services Manager

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB01-031720 (A0C0717-06)				**Matrix: Water**		**Batch: 0030806**		
Acenaphthene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Anthracene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Chrysene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Fluorene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0792	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	0.0792	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Naphthalene	ND	---	0.0792	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Phenanthrene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Pyrene	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0396	ug/L	1	03/23/20 17:39	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*70 %*	*Limits: 53-120 %*	*1*	*03/23/20 17:39*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*83 %*	*58-132 %*	*1*	*03/23/20 17:39*	*EPA 8270D (SIM)*	
EB02-031820 (A0C0717-07)				**Matrix: Water**		**Batch: 0030806**		
Acenaphthene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Acenaphthylene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Anthracene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Chrysene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Fluoranthene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Fluorene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	0.0825	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	0.0825	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB02-031820 (A0C0717-07)				**Matrix: Water**		**Batch: 0030806**		
Naphthalene	ND	---	0.0825	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Phenanthrene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Pyrene	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Dibenzofuran	ND	---	0.0412	ug/L	1	03/23/20 18:04	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*60 %*	*Limits: 53-120 %*	*1*	*03/23/20 18:04*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*80 %*	*58-132 %*	*1*	*03/23/20 18:04*	*EPA 8270D (SIM)*	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**				
Batch: 0030741								
Antimony	ND	---	1.15	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Arsenic	**2.63**	---	1.15	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Beryllium	ND	---	0.230	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Cadmium	ND	---	0.230	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Chromium	**8.03**	---	1.15	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Copper	**1.69**	---	1.15	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Lead	**1.28**	---	0.230	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Mercury	ND	---	0.0921	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Nickel	**4.46**	---	1.15	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Selenium	ND	---	1.15	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Silver	ND	---	0.230	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Thallium	ND	---	0.230	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
Zinc	**11.7**	---	4.61	mg/kg dry	10	03/20/20 14:21	EPA 6020A	
GP02-0-10 (A0C0717-02)				**Matrix: Soil**				
Batch: 0030741								
Antimony	ND	---	1.11	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Arsenic	**2.39**	---	1.11	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Beryllium	ND	---	0.222	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Cadmium	ND	---	0.222	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Chromium	**7.20**	---	1.11	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Copper	**1.47**	---	1.11	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Lead	**1.01**	---	0.222	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Mercury	ND	---	0.0888	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Nickel	**3.96**	---	1.11	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Selenium	ND	---	1.11	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Silver	ND	---	0.222	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Thallium	ND	---	0.222	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
Zinc	**7.85**	---	4.44	mg/kg dry	10	03/20/20 14:27	EPA 6020A	
GP03-0-10 (A0C0717-03)				**Matrix: Soil**				
Batch: 0030741								
Antimony	ND	---	1.07	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Arsenic	**2.65**	---	1.07	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Beryllium	ND	---	0.214	mg/kg dry	10	03/20/20 14:32	EPA 6020A	Q-42
Cadmium	ND	---	0.214	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Chromium	**9.54**	---	1.07	mg/kg dry	10	03/20/20 14:32	EPA 6020A	

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP03-0-10 (A0C0717-03)				**Matrix: Soil**				
Copper	**2.10**	---	1.07	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Lead	**1.15**	---	0.214	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Mercury	ND	---	0.0857	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Nickel	**4.80**	---	1.07	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Selenium	ND	---	1.07	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Silver	ND	---	0.214	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Thallium	ND	---	0.214	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
Zinc	**8.65**	---	4.28	mg/kg dry	10	03/20/20 14:32	EPA 6020A	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**				
Batch: 0030741								
Antimony	ND	---	1.14	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Arsenic	**2.79**	---	1.14	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Beryllium	ND	---	0.228	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Cadmium	ND	---	0.228	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Chromium	**10.1**	---	1.14	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Copper	**3.47**	---	1.14	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Lead	**3.97**	---	0.228	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Mercury	ND	---	0.0912	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Nickel	**6.39**	---	1.14	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Selenium	ND	---	1.14	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Silver	ND	---	0.228	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Thallium	ND	---	0.228	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
Zinc	**15.3**	---	4.56	mg/kg dry	10	03/20/20 14:48	EPA 6020A	
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**				
Batch: 0030741								
Antimony	ND	---	1.14	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Arsenic	**3.49**	---	1.14	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Beryllium	ND	---	0.227	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Cadmium	ND	---	0.227	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Chromium	**7.92**	---	1.14	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Copper	**1.62**	---	1.14	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Lead	**1.28**	---	0.227	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Mercury	ND	---	0.0910	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Nickel	**4.70**	---	1.14	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Selenium	ND	---	1.14	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Silver	ND	---	0.227	mg/kg dry	10	03/20/20 15:03	EPA 6020A	

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**				
Thallium	ND	---	0.227	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
Zinc	**8.76**	---	4.55	mg/kg dry	10	03/20/20 15:03	EPA 6020A	
EB01-031720 (A0C0717-06)				**Matrix: Water**				
Batch: 0030853								
Antimony	ND	---	1.00	ug/L	1	03/31/20 18:53	EPA 6020A	
Arsenic	ND	---	1.00	ug/L	1	03/31/20 18:53	EPA 6020A	
Beryllium	ND	---	0.200	ug/L	1	03/31/20 18:53	EPA 6020A	
Cadmium	ND	---	0.200	ug/L	1	03/31/20 18:53	EPA 6020A	
Chromium	ND	---	1.00	ug/L	1	03/31/20 18:53	EPA 6020A	
Copper	ND	---	2.00	ug/L	1	03/31/20 18:53	EPA 6020A	
Lead	ND	---	0.200	ug/L	1	03/31/20 18:53	EPA 6020A	
Mercury	ND	---	0.0800	ug/L	1	03/31/20 18:53	EPA 6020A	
Nickel	ND	---	2.00	ug/L	1	03/31/20 18:53	EPA 6020A	
Selenium	ND	---	1.00	ug/L	1	03/31/20 18:53	EPA 6020A	
Silver	ND	---	0.200	ug/L	1	03/31/20 18:53	EPA 6020A	
Thallium	ND	---	0.200	ug/L	1	03/31/20 18:53	EPA 6020A	
Zinc	ND	---	4.00	ug/L	1	03/31/20 18:53	EPA 6020A	
EB02-031820 (A0C0717-07)				**Matrix: Water**				
Batch: 0030853								
Antimony	ND	---	1.00	ug/L	1	03/31/20 18:58	EPA 6020A	
Arsenic	ND	---	1.00	ug/L	1	03/31/20 18:58	EPA 6020A	
Beryllium	ND	---	0.200	ug/L	1	03/31/20 18:58	EPA 6020A	
Cadmium	ND	---	0.200	ug/L	1	03/31/20 18:58	EPA 6020A	
Chromium	ND	---	1.00	ug/L	1	03/31/20 18:58	EPA 6020A	
Copper	ND	---	2.00	ug/L	1	03/31/20 18:58	EPA 6020A	
Lead	ND	---	0.200	ug/L	1	03/31/20 18:58	EPA 6020A	
Mercury	ND	---	0.0800	ug/L	1	03/31/20 18:58	EPA 6020A	
Nickel	ND	---	2.00	ug/L	1	03/31/20 18:58	EPA 6020A	
Selenium	ND	---	1.00	ug/L	1	03/31/20 18:58	EPA 6020A	
Silver	ND	---	0.200	ug/L	1	03/31/20 18:58	EPA 6020A	
Thallium	ND	---	0.200	ug/L	1	03/31/20 18:58	EPA 6020A	
Zinc	ND	---	4.00	ug/L	1	03/31/20 18:58	EPA 6020A	

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Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**				
Batch: 0030739								
Chloride	ND	---	10.3	mg/kg dry	1	03/20/20 14:32	EPA 9056A	
Sulfate	**11.0**	---	10.3	mg/kg dry	1	03/20/20 14:32	EPA 9056A	
GP02-0-10 (A0C0717-02)				**Matrix: Soil**				
Batch: 0030739								
Chloride	ND	---	10.2	mg/kg dry	1	03/20/20 15:37	EPA 9056A	
Sulfate	ND	---	10.2	mg/kg dry	1	03/20/20 15:37	EPA 9056A	
GP03-0-10 (A0C0717-03)				**Matrix: Soil**				
Batch: 0030739								
Chloride	ND	---	10.4	mg/kg dry	1	03/20/20 15:58	EPA 9056A	
Sulfate	ND	---	10.4	mg/kg dry	1	03/20/20 15:58	EPA 9056A	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**				
Batch: 0030739								
Chloride	**12.1**	---	10.8	mg/kg dry	1	03/20/20 16:20	EPA 9056A	
Sulfate	**15.6**	---	10.8	mg/kg dry	1	03/20/20 16:20	EPA 9056A	
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**				
Batch: 0030739								
Chloride	ND	---	10.3	mg/kg dry	1	03/20/20 16:42	EPA 9056A	
Sulfate	ND	---	10.3	mg/kg dry	1	03/20/20 16:42	EPA 9056A	

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ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**				
Batch: 0030737								
Soil pH (measured in H2O)	**8.81**	---		pH Units	1	03/20/20 11:38	EPA 9045D	**pH_S**
pH Temperature (deg C)	**22.7**	---		pH Units	1	03/20/20 11:38	EPA 9045D	**pH_S**
GP02-0-10 (A0C0717-02)				**Matrix: Soil**				
Batch: 0030737								
Soil pH (measured in H2O)	**9.01**	---		pH Units	1	03/20/20 11:40	EPA 9045D	**pH_S**
pH Temperature (deg C)	**22.5**	---		pH Units	1	03/20/20 11:40	EPA 9045D	**pH_S**
GP03-0-10 (A0C0717-03)				**Matrix: Soil**				
Batch: 0030737								
Soil pH (measured in H2O)	**8.98**	---		pH Units	1	03/20/20 11:41	EPA 9045D	**pH_S**
pH Temperature (deg C)	**22.5**	---		pH Units	1	03/20/20 11:41	EPA 9045D	**pH_S**
GP04-0-10 (A0C0717-04)				**Matrix: Soil**				
Batch: 0030737								
Soil pH (measured in H2O)	**8.30**	---		pH Units	1	03/20/20 11:42	EPA 9045D	**pH_S**
pH Temperature (deg C)	**22.5**	---		pH Units	1	03/20/20 11:42	EPA 9045D	**pH_S**
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**				
Batch: 0030737								
Soil pH (measured in H2O)	**8.99**	---		pH Units	1	03/20/20 11:43	EPA 9045D	**pH_S**
pH Temperature (deg C)	**22.4**	---		pH Units	1	03/20/20 11:43	EPA 9045D	**pH_S**

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GP01-0-10 (A0C0717-01)				**Matrix: Soil**		**Batch: 0030740**		
% Solids	**92.8**	---	1.00	%	1	03/23/20 07:58	EPA 8000C	
GP02-0-10 (A0C0717-02)				**Matrix: Soil**		**Batch: 0030740**		
% Solids	**93.1**	---	1.00	%	1	03/23/20 07:58	EPA 8000C	
GP03-0-10 (A0C0717-03)				**Matrix: Soil**		**Batch: 0030740**		
% Solids	**94.3**	---	1.00	%	1	03/23/20 07:58	EPA 8000C	
GP04-0-10 (A0C0717-04)				**Matrix: Soil**		**Batch: 0030740**		
% Solids	**90.1**	---	1.00	%	1	03/23/20 07:58	EPA 8000C	
GP0XC-0-10 (A0C0717-05)				**Matrix: Soil**		**Batch: 0030740**		
% Solids	**94.8**	---	1.00	%	1	03/23/20 07:58	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Hydrocarbon Identification Screen by NWTPH-HCID

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030775 - NWTPH-HCID (Soil)											Soil	
Blank (0030775-BLK1)		Prepared: 03/23/20 06:58		Analyzed: 03/23/20 08:04								
NWTPH-HCID												
Gasoline Range Organics	ND	---	18.2	mg/kg wet	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	45.5	mg/kg wet	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	90.9	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery:*	*106 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
4-Bromofluorobenzene (Surr)			*104 %*		*50-150 %*			*"*				
Batch 0030801 - EPA 3510C (Fuels/Acid Ext.)											Water	
Blank (0030801-BLK1)		Prepared: 03/23/20 11:32		Analyzed: 03/23/20 22:44								
NWTPH-HCID												
Gasoline Range Organics	ND	---	0.0909	mg/L	1	---	---	---	---	---	---	
Diesel Range Organics	ND	---	0.227	mg/L	1	---	---	---	---	---	---	
Oil Range Organics	ND	---	0.227	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery:*	*89 %*	*Limits:*	*50-150 %*		*Dilution:*	*1x*				
4-Bromofluorobenzene (Surr)			*74 %*		*50-150 %*			*"*				

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Lisa Domenighini, Client Services Manager

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

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 0030823 - EPA 3546 (Fuels)							**Soil**					
Blank (0030823-BLK1)		Prepared: 03/24/20 07:04		Analyzed: 03/24/20 08:36								
NWTPH-Dx												
Diesel	ND	---	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	---	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 95 %*		*Limits: 50-150 %*			*Dilution: 1x*					
LCS (0030823-BS1)		Prepared: 03/24/20 07:04		Analyzed: 03/24/20 08:56								
NWTPH-Dx												
Diesel	120	---	25.0	mg/kg wet	1	125	---	96	73 - 115%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 108 %*		*Limits: 50-150 %*			*Dilution: 1x*					

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030828 - EPA 5030B							**Water**					
Blank (0030828-BLK1)		Prepared: 03/24/20 08:15		Analyzed: 03/24/20 10:03								
EPA 8260C												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030828 - EPA 5030B							**Water**					
Blank (0030828-BLK1)		Prepared: 03/24/20 08:15		Analyzed: 03/24/20 10:03								
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	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	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 105 %*		*Limits: 80-120 %*				*Dilution: 1x*				

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030828 - EPA 5030B												**Water**
Blank (0030828-BLK1)			Prepared: 03/24/20 08:15 Analyzed: 03/24/20 10:03									
Surr: Toluene-d8 (Surr)			*Recovery: 105 %*	*Limits: 80-120 %*				*Dilution: 1x*				
4-Bromofluorobenzene (Surr)			*99 %*	*80-120 %*				*"*				
LCS (0030828-BS1)			Prepared: 03/24/20 08:15 Analyzed: 03/24/20 09:09									
EPA 8260C												
Acetone	38.2	---	20.0	ug/L	1	40.0	---	95	80 - 120%	---	---	
Acrylonitrile	22.2	---	2.00	ug/L	1	20.0	---	111	80 - 120%	---	---	
Benzene	21.5	---	0.200	ug/L	1	20.0	---	108	80 - 120%	---	---	
Bromobenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80 - 120%	---	---	
Bromochloromethane	22.3	---	1.00	ug/L	1	20.0	---	111	80 - 120%	---	---	
Bromodichloromethane	21.7	---	1.00	ug/L	1	20.0	---	108	80 - 120%	---	---	
Bromoform	21.0	---	1.00	ug/L	1	20.0	---	105	80 - 120%	---	---	
Bromomethane	22.4	---	5.00	ug/L	1	20.0	---	112	80 - 120%	---	---	
2-Butanone (MEK)	42.7	---	10.0	ug/L	1	40.0	---	107	80 - 120%	---	---	
n-Butylbenzene	23.1	---	1.00	ug/L	1	20.0	---	116	80 - 120%	---	---	
sec-Butylbenzene	22.3	---	1.00	ug/L	1	20.0	---	112	80 - 120%	---	---	
tert-Butylbenzene	21.4	---	1.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
Carbon disulfide	21.5	---	10.0	ug/L	1	20.0	---	108	80 - 120%	---	---	
Carbon tetrachloride	22.7	---	1.00	ug/L	1	20.0	---	114	80 - 120%	---	---	
Chlorobenzene	21.0	---	0.500	ug/L	1	20.0	---	105	80 - 120%	---	---	
Chloroethane	20.6	---	5.00	ug/L	1	20.0	---	103	80 - 120%	---	---	
Chloroform	21.6	---	1.00	ug/L	1	20.0	---	108	80 - 120%	---	---	
Chloromethane	19.2	---	5.00	ug/L	1	20.0	---	96	80 - 120%	---	---	
2-Chlorotoluene	21.2	---	1.00	ug/L	1	20.0	---	106	80 - 120%	---	---	
4-Chlorotoluene	21.8	---	1.00	ug/L	1	20.0	---	109	80 - 120%	---	---	
Dibromochloromethane	22.1	---	1.00	ug/L	1	20.0	---	110	80 - 120%	---	---	
1,2-Dibromo-3-chloropropane	17.1	---	5.00	ug/L	1	20.0	---	85	80 - 120%	---	---	
1,2-Dibromoethane (EDB)	22.9	---	0.500	ug/L	1	20.0	---	114	80 - 120%	---	---	
Dibromomethane	21.9	---	1.00	ug/L	1	20.0	---	110	80 - 120%	---	---	
1,2-Dichlorobenzene	21.7	---	0.500	ug/L	1	20.0	---	109	80 - 120%	---	---	
1,3-Dichlorobenzene	21.7	---	0.500	ug/L	1	20.0	---	109	80 - 120%	---	---	
1,4-Dichlorobenzene	20.7	---	0.500	ug/L	1	20.0	---	103	80 - 120%	---	---	
Dichlorodifluoromethane	22.1	---	1.00	ug/L	1	20.0	---	110	80 - 120%	---	---	
1,1-Dichloroethane	20.9	---	0.400	ug/L	1	20.0	---	105	80 - 120%	---	---	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030828 - EPA 5030B							**Water**					
LCS (0030828-BS1)		Prepared: 03/24/20 08:15		Analyzed: 03/24/20 09:09								
1,2-Dichloroethane (EDC)	21.2	---	0.400	ug/L	1	20.0	---	106	80 - 120%	---	---	
1,1-Dichloroethene	21.7	---	0.400	ug/L	1	20.0	---	109	80 - 120%	---	---	
cis-1,2-Dichloroethene	21.1	---	0.400	ug/L	1	20.0	---	105	80 - 120%	---	---	
trans-1,2-Dichloroethene	21.9	---	0.400	ug/L	1	20.0	---	109	80 - 120%	---	---	
1,2-Dichloropropane	21.5	---	0.500	ug/L	1	20.0	---	107	80 - 120%	---	---	
1,3-Dichloropropane	21.5	---	1.00	ug/L	1	20.0	---	108	80 - 120%	---	---	
2,2-Dichloropropane	23.8	---	1.00	ug/L	1	20.0	---	119	80 - 120%	---	---	
1,1-Dichloropropene	22.2	---	1.00	ug/L	1	20.0	---	111	80 - 120%	---	---	
cis-1,3-Dichloropropene	20.5	---	1.00	ug/L	1	20.0	---	103	80 - 120%	---	---	
trans-1,3-Dichloropropene	21.7	---	1.00	ug/L	1	20.0	---	108	80 - 120%	---	---	
Ethylbenzene	20.9	---	0.500	ug/L	1	20.0	---	105	80 - 120%	---	---	
Hexachlorobutadiene	21.4	---	5.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
2-Hexanone	41.0	---	10.0	ug/L	1	40.0	---	102	80 - 120%	---	---	
Isopropylbenzene	20.8	---	1.00	ug/L	1	20.0	---	104	80 - 120%	---	---	
4-Isopropyltoluene	21.9	---	1.00	ug/L	1	20.0	---	110	80 - 120%	---	---	
Methylene chloride	20.2	---	10.0	ug/L	1	20.0	---	101	80 - 120%	---	---	
4-Methyl-2-pentanone (MiBK)	45.0	---	10.0	ug/L	1	40.0	---	112	80 - 120%	---	---	
Methyl tert-butyl ether (MTBE)	21.4	---	1.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
Naphthalene	19.5	---	2.00	ug/L	1	20.0	---	97	80 - 120%	---	---	
n-Propylbenzene	22.0	---	0.500	ug/L	1	20.0	---	110	80 - 120%	---	---	
Styrene	21.3	---	1.00	ug/L	1	20.0	---	107	80 - 120%	---	---	
1,1,1,2-Tetrachloroethane	21.3	---	0.400	ug/L	1	20.0	---	106	80 - 120%	---	---	
1,1,2,2-Tetrachloroethane	22.3	---	0.500	ug/L	1	20.0	---	111	80 - 120%	---	---	
Tetrachloroethene (PCE)	22.2	---	0.400	ug/L	1	20.0	---	111	80 - 120%	---	---	
Toluene	21.1	---	1.00	ug/L	1	20.0	---	106	80 - 120%	---	---	
1,2,3-Trichlorobenzene	21.9	---	2.00	ug/L	1	20.0	---	109	80 - 120%	---	---	
1,2,4-Trichlorobenzene	21.8	---	2.00	ug/L	1	20.0	---	109	80 - 120%	---	---	
1,1,1-Trichloroethane	21.6	---	0.400	ug/L	1	20.0	---	108	80 - 120%	---	---	
1,1,2-Trichloroethane	21.3	---	0.500	ug/L	1	20.0	---	106	80 - 120%	---	---	
Trichloroethene (TCE)	22.3	---	0.400	ug/L	1	20.0	---	111	80 - 120%	---	---	
Trichlorofluoromethane	22.3	---	2.00	ug/L	1	20.0	---	112	80 - 120%	---	---	
1,2,3-Trichloropropane	22.5	---	1.00	ug/L	1	20.0	---	113	80 - 120%	---	---	
1,2,4-Trimethylbenzene	22.4	---	1.00	ug/L	1	20.0	---	112	80 - 120%	---	---	
1,3,5-Trimethylbenzene	22.9	---	1.00	ug/L	1	20.0	---	114	80 - 120%	---	---	

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Lisa Domenighini, Client Services Manager

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260C

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030828 - EPA 5030B							**Water**					
LCS (0030828-BS1)		Prepared: 03/24/20 08:15		Analyzed: 03/24/20 09:09								
Vinyl chloride	21.7	---	0.400	ug/L	1	20.0	---	108	80 - 120%	---	---	
m,p-Xylene	42.6	---	1.00	ug/L	1	40.0	---	106	80 - 120%	---	---	
o-Xylene	20.8	---	0.500	ug/L	1	20.0	---	104	80 - 120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*98 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*98 %*		*80-120 %*		*"*					

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030749 - EPA 3510C (Neutral pH)							**Water**					
Blank (0030749-BLK1)		Prepared: 03/20/20 11:34		Analyzed: 03/23/20 08:04								**C-07**
EPA 8082A												
Aroclor 1016	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.0909	ug/L	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 75 %*		*Limits: 40-135 %*			*Dilution: 1x*					
LCS (0030749-BS1)		Prepared: 03/20/20 11:34		Analyzed: 03/23/20 08:22								**C-07**
EPA 8082A												
Aroclor 1016	1.32	---	0.100	ug/L	1	2.50	---	53	46 - 129%	---	---	
Aroclor 1260	1.73	---	0.100	ug/L	1	2.50	---	69	45 - 134%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 69 %*		*Limits: 40-135 %*			*Dilution: 1x*					
LCS Dup (0030749-BSD1)		Prepared: 03/20/20 11:34		Analyzed: 03/23/20 08:39								**C-07, Q-19**
EPA 8082A												
Aroclor 1016	1.35	---	0.100	ug/L	1	2.50	---	54	46 - 129%	2	30%	
Aroclor 1260	1.70	---	0.100	ug/L	1	2.50	---	68	45 - 134%	2	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 68 %*		*Limits: 40-135 %*			*Dilution: 1x*					

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030757 - EPA 3546							**Soil**					
Blank (0030757-BLK1)		Prepared: 03/20/20 12:30		Analyzed: 03/24/20 07:44								**C-07**
EPA 8082A												
Aroclor 1016	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 101 %*		*Limits: 60-125 %*			*Dilution: 1x*					
LCS (0030757-BS1)		Prepared: 03/20/20 12:30		Analyzed: 03/24/20 08:02								**C-07**
EPA 8082A												
Aroclor 1016	0.203	---	0.0100	mg/kg wet	1	0.250	---	81	47 - 134%	---	---	
Aroclor 1260	0.236	---	0.0100	mg/kg wet	1	0.250	---	94	53 - 140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 100 %*		*Limits: 60-125 %*			*Dilution: 1x*					
Duplicate (0030757-DUP1)		Prepared: 03/20/20 12:30		Analyzed: 03/24/20 08:54								**C-07**
QC Source Sample: GP01-0-10 (A0C0717-01)												
EPA 8082A												
Aroclor 1016	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	0.0107	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 101 %*		*Limits: 60-125 %*			*Dilution: 1x*					
Matrix Spike (0030757-MS1)		Prepared: 03/20/20 12:30		Analyzed: 03/24/20 11:15								**C-07**
QC Source Sample: GP0XC-0-10 (A0C0717-05)												
EPA 8082A												
Aroclor 1016	0.204	---	0.00987	mg/kg dry	1	0.247	ND	83	47 - 134%	---	---	
Aroclor 1260	0.229	---	0.00987	mg/kg dry	1	0.247	ND	93	53 - 140%	---	---	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030757 - EPA 3546												**Soil**
Matrix Spike (0030757-MS1)			Prepared: 03/20/20 12:30		Analyzed: 03/24/20 11:15							**C-07**
QC Source Sample: GP0XC-0-10 (A0C0717-05)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*		*Limits: 60-125 %*							*Dilution: 1x*

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030762 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0030762-BLK1)		Prepared: 03/20/20 07:18		Analyzed: 03/23/20 12:16								**C-05**
EPA 8081B												
Aldrin	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
beta-BHC	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
delta-BHC	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endrin	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endrin Aldehyde	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Endrin ketone	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Heptachlor	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Heptachlor epoxide	ND	---	0.00200	mg/kg wet	1	---	---	---	---	---	---	
Methoxychlor	ND	---	0.00600	mg/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	---	0.0600	mg/kg wet	1	---	---	---	---	---	---	
Toxaphene (Total)	ND	---	0.0600	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)		*Recovery: 69 %*		*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)		*113 %*		*55-130 %*			*"*					
LCS (0030762-BS1)		Prepared: 03/20/20 07:18		Analyzed: 03/23/20 12:32								**C-05**
EPA 8081B												
Aldrin	0.0274	---	0.00200	mg/kg wet	1	0.0500	---	55	45 - 136%	---	---	
alpha-BHC	0.0302	---	0.00200	mg/kg wet	1	0.0500	---	60	45 - 137%	---	---	
beta-BHC	0.0328	---	0.00200	mg/kg wet	1	0.0500	---	66	50 - 136%	---	---	
delta-BHC	0.0384	---	0.00200	mg/kg wet	1	0.0500	---	77	47 - 139%	---	---	
gamma-BHC (Lindane)	0.0325	---	0.00200	mg/kg wet	1	0.0500	---	65	49 - 135%	---	---	Q-41
cis-Chlordane	0.0371	---	0.00200	mg/kg wet	1	0.0500	---	74	54 - 133%	---	---	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030762 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0030762-BS1)		Prepared: 03/20/20 07:18		Analyzed: 03/23/20 12:32								**C-05**
trans-Chlordane	0.0388	---	0.00200	mg/kg wet	1	0.0500	---	78	53 - 135%	---	---	
4,4'-DDD	0.0587	---	0.00200	mg/kg wet	1	0.0500	---	117	56 - 139%	---	---	Q-41
4,4'-DDE	0.0460	---	0.00200	mg/kg wet	1	0.0500	---	92	56 - 134%	---	---	
4,4'-DDT	0.0625	---	0.00200	mg/kg wet	1	0.0500	---	125	50 - 141%	---	---	
Dieldrin	0.0489	---	0.00200	mg/kg wet	1	0.0500	---	98	56 - 136%	---	---	
Endosulfan I	0.0439	---	0.00200	mg/kg wet	1	0.0500	---	88	53 - 132%	---	---	
Endosulfan II	0.0581	---	0.00200	mg/kg wet	1	0.0500	---	116	53 - 134%	---	---	
Endosulfan sulfate	0.0555	---	0.00200	mg/kg wet	1	0.0500	---	111	55 - 136%	---	---	
Endrin	0.0525	---	0.00200	mg/kg wet	1	0.0500	---	105	57 - 140%	---	---	
Endrin Aldehyde	0.0492	---	0.00200	mg/kg wet	1	0.0500	---	98	35 - 137%	---	---	
Endrin ketone	0.0595	---	0.00200	mg/kg wet	1	0.0500	---	119	55 - 136%	---	---	Q-41
Heptachlor	0.0328	---	0.00200	mg/kg wet	1	0.0500	---	66	47 - 136%	---	---	Q-41
Heptachlor epoxide	0.0394	---	0.00200	mg/kg wet	1	0.0500	---	79	52 - 136%	---	---	
Methoxychlor	0.0714	---	0.00600	mg/kg wet	1	0.0500	---	143	52 - 143%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 55 %*		*Limits: 42-129 %*							
Decachlorobiphenyl (Surr)			*107 %*		*55-130 %*							
Duplicate (0030762-DUP1)		Prepared: 03/20/20 07:18		Analyzed: 03/23/20 13:22								**C-05**
QC Source Sample: GP02-0-10 (A0C0717-02RE1)												
EPA 8081B												
Aldrin	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
alpha-BHC	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
beta-BHC	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
delta-BHC	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Dieldrin	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030762 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0030762-DUP1)		Prepared: 03/20/20 07:18	Analyzed: 03/23/20 13:22									**C-05**
QC Source Sample: GP02-0-10 (A0C0717-02RE1)												
Endrin	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Endrin Aldehyde	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Endrin ketone	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Heptachlor	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	---	0.00206	mg/kg dry	1	---	ND	---	---	---	30%	
Methoxychlor	ND	---	0.00617	mg/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	---	0.0617	mg/kg dry	1	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	---	0.0617	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 51 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*100 %*	*55-130 %*			*"*					
Matrix Spike (0030762-MS1)		Prepared: 03/20/20 07:18	Analyzed: 03/23/20 14:11									**C-05**
QC Source Sample: GP04-0-10 (A0C0717-04RE1)												
EPA 8081B												
Aldrin	0.0456	---	0.00220	mg/kg dry	1	0.0550	ND	83	45 - 136%	---	---	
alpha-BHC	0.0440	---	0.00220	mg/kg dry	1	0.0550	ND	80	45 - 137%	---	---	
beta-BHC	0.0582	---	0.00220	mg/kg dry	1	0.0550	ND	106	50 - 136%	---	---	
delta-BHC	0.0628	---	0.00253	mg/kg dry	1	0.0550	ND	114	47 - 139%	---	---	R-02
gamma-BHC (Lindane)	0.0492	---	0.00220	mg/kg dry	1	0.0550	ND	90	49 - 135%	---	---	Q-41
cis-Chlordane	0.0540	---	0.00220	mg/kg dry	1	0.0550	ND	98	54 - 133%	---	---	
trans-Chlordane	0.0575	---	0.00220	mg/kg dry	1	0.0550	ND	105	53 - 135%	---	---	
4,4'-DDD	0.0705	---	0.00220	mg/kg dry	1	0.0550	ND	128	56 - 139%	---	---	
4,4'-DDE	0.0630	---	0.00220	mg/kg dry	1	0.0550	ND	115	56 - 134%	---	---	
4,4'-DDT	0.0701	---	0.00220	mg/kg dry	1	0.0550	ND	128	50 - 141%	---	---	
Dieldrin	0.0526	---	0.00220	mg/kg dry	1	0.0550	ND	96	56 - 136%	---	---	
Endosulfan I	0.0557	---	0.00220	mg/kg dry	1	0.0550	ND	101	53 - 132%	---	---	
Endosulfan II	0.0565	---	0.00220	mg/kg dry	1	0.0550	ND	103	53 - 134%	---	---	
Endosulfan sulfate	0.0571	---	0.00242	mg/kg dry	1	0.0550	ND	104	55 - 136%	---	---	R-02
Endrin	0.0674	---	0.00220	mg/kg dry	1	0.0550	ND	123	57 - 140%	---	---	
Endrin Aldehyde	0.0535	---	0.00220	mg/kg dry	1	0.0550	ND	97	35 - 137%	---	---	
Endrin ketone	0.0595	---	0.00319	mg/kg dry	1	0.0550	ND	108	55 - 136%	---	---	R-02
Heptachlor	0.0547	---	0.00220	mg/kg dry	1	0.0550	ND	100	47 - 136%	---	---	Q-41
Heptachlor epoxide	0.0549	---	0.00220	mg/kg dry	1	0.0550	ND	100	52 - 136%	---	---	

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030762 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0030762-MS1)		Prepared: 03/20/20 07:18		Analyzed: 03/23/20 14:11								**C-05**
QC Source Sample: GP04-0-10 (A0C0717-04RE1)												
Methoxychlor	0.0811	---	0.00660	mg/kg dry	1	0.0550	ND	**148**	**52 - 143%**	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 69 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*125 %*	*55-130 %*			*"*					

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Lisa Domenighini, Client Services Manager

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030826 - EPA 3510C (Neutral pH)							**Water**					
Blank (0030826-BLK1)		Prepared: 03/24/20 07:16		Analyzed: 03/26/20 12:53								
EPA 8081B												
Aldrin	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
alpha-BHC	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
beta-BHC	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
delta-BHC	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
cis-Chlordane	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
trans-Chlordane	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
4,4'-DDD	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
4,4'-DDE	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
4,4'-DDT	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Dieldrin	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Endosulfan I	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Endosulfan II	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Endrin	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Endrin Aldehyde	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Endrin ketone	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Heptachlor	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Heptachlor epoxide	ND	---	0.00909	ug/L	1	---	---	---	---	---	---	
Methoxychlor	ND	---	0.0273	ug/L	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	---	0.341	ug/L	1	---	---	---	---	---	---	
Toxaphene (Total)	ND	---	0.341	ug/L	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 54 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*73 %*		*30-135 %*				*"*			
LCS (0030826-BS1)		Prepared: 03/24/20 07:16		Analyzed: 03/26/20 13:11								
EPA 8081B												
Aldrin	0.302	---	0.0100	ug/L	1	0.500	---	60	45 - 134%	---	---	
alpha-BHC	0.432	---	0.0100	ug/L	1	0.500	---	86	54 - 138%	---	---	
beta-BHC	0.430	---	0.0100	ug/L	1	0.500	---	86	56 - 136%	---	---	
delta-BHC	0.506	---	0.0100	ug/L	1	0.500	---	101	52 - 142%	---	---	
gamma-BHC (Lindane)	0.450	---	0.0100	ug/L	1	0.500	---	90	59 - 134%	---	---	
cis-Chlordane	0.418	---	0.0100	ug/L	1	0.500	---	84	60 - 129%	---	---	

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Apex Laboratories, LLC
6700 S.W. Sandburg Street
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503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030826 - EPA 3510C (Neutral pH)							**Water**					
LCS (0030826-BS1)		Prepared: 03/24/20 07:16		Analyzed: 03/26/20 13:11								
trans-Chlordane	0.424	---	0.0100	ug/L	1	0.500	---	85	56 - 136%	---	---	
4,4'-DDD	0.471	---	0.0100	ug/L	1	0.500	---	94	56 - 143%	---	---	
4,4'-DDE	0.421	---	0.0100	ug/L	1	0.500	---	84	57 - 135%	---	---	
4,4'-DDT	0.463	---	0.0100	ug/L	1	0.500	---	93	51 - 143%	---	---	
Dieldrin	0.487	---	0.0100	ug/L	1	0.500	---	97	60 - 136%	---	---	
Endosulfan I	0.466	---	0.0100	ug/L	1	0.500	---	93	62 - 126%	---	---	
Endosulfan II	0.505	---	0.0100	ug/L	1	0.500	---	101	52 - 135%	---	---	
Endosulfan sulfate	0.502	---	0.0100	ug/L	1	0.500	---	100	62 - 133%	---	---	
Endrin	0.521	---	0.0100	ug/L	1	0.500	---	104	60 - 138%	---	---	
Endrin Aldehyde	0.440	---	0.0100	ug/L	1	0.500	---	88	51 - 132%	---	---	
Endrin ketone	0.512	---	0.0100	ug/L	1	0.500	---	102	58 - 134%	---	---	
Heptachlor	0.374	---	0.0100	ug/L	1	0.500	---	75	54 - 130%	---	---	
Heptachlor epoxide	0.454	---	0.0100	ug/L	1	0.500	---	91	61 - 133%	---	---	
Methoxychlor	0.486	---	0.0300	ug/L	1	0.500	---	97	54 - 145%	---	---	
Surr: 2,4,5,6-TCMX (Surr)		*Recovery: 60 %*		*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)		*68 %*		*30-135 %*			*"*					
LCS Dup (0030826-BSD1)		Prepared: 03/24/20 07:16		Analyzed: 03/26/20 13:28								**Q-19**
EPA 8081B												
Aldrin	0.313	---	0.0100	ug/L	1	0.500	---	63	45 - 134%	4	30%	
alpha-BHC	0.476	---	0.0100	ug/L	1	0.500	---	95	54 - 138%	10	30%	
beta-BHC	0.461	---	0.0100	ug/L	1	0.500	---	92	56 - 136%	7	30%	
delta-BHC	0.508	---	0.0100	ug/L	1	0.500	---	102	52 - 142%	0.4	30%	
gamma-BHC (Lindane)	0.475	---	0.0100	ug/L	1	0.500	---	95	59 - 134%	5	30%	
cis-Chlordane	0.436	---	0.0100	ug/L	1	0.500	---	87	60 - 129%	4	30%	
trans-Chlordane	0.430	---	0.0100	ug/L	1	0.500	---	86	56 - 136%	1	30%	
4,4'-DDD	0.474	---	0.0100	ug/L	1	0.500	---	95	56 - 143%	0.6	30%	
4,4'-DDE	0.429	---	0.0100	ug/L	1	0.500	---	86	57 - 135%	2	30%	
4,4'-DDT	0.442	---	0.0100	ug/L	1	0.500	---	88	51 - 143%	5	30%	
Dieldrin	0.488	---	0.0100	ug/L	1	0.500	---	98	60 - 136%	0.2	30%	
Endosulfan I	0.475	---	0.0100	ug/L	1	0.500	---	95	62 - 126%	2	30%	
Endosulfan II	0.506	---	0.0100	ug/L	1	0.500	---	101	52 - 135%	0.3	30%	
Endosulfan sulfate	0.497	---	0.0100	ug/L	1	0.500	---	99	62 - 133%	1	30%	
Endrin	0.512	---	0.0100	ug/L	1	0.500	---	102	60 - 138%	2	30%	

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030826 - EPA 3510C (Neutral pH)							**Water**					
LCS Dup (0030826-BSD1)		Prepared: 03/24/20 07:16		Analyzed: 03/26/20 13:28								**Q-19**
Endrin Aldehyde	0.463	---	0.0100	ug/L	1	0.500	---	93	51 - 132%	5	30%	
Endrin ketone	0.517	---	0.0100	ug/L	1	0.500	---	103	58 - 134%	0.9	30%	
Heptachlor	0.398	---	0.0100	ug/L	1	0.500	---	80	54 - 130%	6	30%	
Heptachlor epoxide	0.453	---	0.0100	ug/L	1	0.500	---	91	61 - 133%	0.4	30%	
Methoxychlor	0.487	---	0.0300	ug/L	1	0.500	---	97	54 - 145%	0.3	30%	
Surr: 2,4,5,6-TCMX (Surr)		*Recovery: 69 %*		*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)		*72 %*		*30-135 %*			*"*					

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030726 - EPA 3546							**Soil**					
Blank (0030726-BLK1)		Prepared: 03/20/20 07:17		Analyzed: 03/20/20 11:06								
EPA 8270D (SIM)												
Acenaphthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 46-120 %*			*Dilution: 1x*				
p-Terphenyl-d14 (Surr)			*99 %*		*49-126 %*			*"*				
LCS (0030726-BS1)		Prepared: 03/20/20 07:17		Analyzed: 03/20/20 11:31								
EPA 8270D (SIM)												
Acenaphthene	0.687	---	0.0100	mg/kg wet	1	0.800	---	86	44 - 120%	---	---	
Acenaphthylene	0.682	---	0.0100	mg/kg wet	1	0.800	---	85	39 - 120%	---	---	
Anthracene	0.681	---	0.0100	mg/kg wet	1	0.800	---	85	50 - 120%	---	---	
Benz(a)anthracene	0.663	---	0.0100	mg/kg wet	1	0.800	---	83	54 - 122%	---	---	
Benzo(a)pyrene	0.616	---	0.0100	mg/kg wet	1	0.800	---	77	50 - 125%	---	---	
Benzo(b)fluoranthene	0.694	---	0.0100	mg/kg wet	1	0.800	---	87	53 - 128%	---	---	
Benzo(k)fluoranthene	0.742	---	0.0100	mg/kg wet	1	0.800	---	93	56 - 123%	---	---	
Benzo(g,h,i)perylene	0.692	---	0.0100	mg/kg wet	1	0.800	---	86	49 - 127%	---	---	
Chrysene	0.703	---	0.0100	mg/kg wet	1	0.800	---	88	57 - 120%	---	---	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030726 - EPA 3546							**Soil**					
LCS (0030726-BS1)		Prepared: 03/20/20 07:17		Analyzed: 03/20/20 11:31								
Dibenz(a,h)anthracene	0.719	---	0.0100	mg/kg wet	1	0.800	---	90	50 - 129%	---	---	
Fluoranthene	0.691	---	0.0100	mg/kg wet	1	0.800	---	86	55 - 120%	---	---	
Fluorene	0.685	---	0.0100	mg/kg wet	1	0.800	---	86	47 - 120%	---	---	
Indeno(1,2,3-cd)pyrene	0.684	---	0.0100	mg/kg wet	1	0.800	---	85	49 - 130%	---	---	
1-Methylnaphthalene	0.649	---	0.0100	mg/kg wet	1	0.800	---	81	43 - 120%	---	---	
2-Methylnaphthalene	0.648	---	0.0100	mg/kg wet	1	0.800	---	81	39 - 120%	---	---	
Naphthalene	0.640	---	0.0100	mg/kg wet	1	0.800	---	80	38 - 120%	---	---	
Phenanthrene	0.685	---	0.0100	mg/kg wet	1	0.800	---	86	49 - 120%	---	---	
Pyrene	0.700	---	0.0100	mg/kg wet	1	0.800	---	87	55 - 120%	---	---	
Dibenzofuran	0.701	---	0.0100	mg/kg wet	1	0.800	---	88	35 - 120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 87 %*		*Limits: 46-120 %*				*Dilution: 1x*			
p-Terphenyl-d14 (Surr)			*88 %*		*49-126 %*				*"*			
Duplicate (0030726-DUP1)		Prepared: 03/20/20 07:17		Analyzed: 03/20/20 12:22								
QC Source Sample: GP01-0-10 (A0C0717-01)												
EPA 8270D (SIM)												
Acenaphthene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Chrysene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Fluorene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Pyrene	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030726 - EPA 3546							**Soil**					
Duplicate (0030726-DUP1)		Prepared: 03/20/20 07:17		Analyzed: 03/20/20 12:22								
QC Source Sample: GP01-0-10 (A0C0717-01)												
Dibenzofuran	ND	---	0.0105	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 73 %*		*Limits: 46-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*81 %*		*49-126 %*			*"*					
Matrix Spike (0030726-MS1)		Prepared: 03/20/20 07:17		Analyzed: 03/20/20 14:28								
QC Source Sample: GP0XC-0-10 (A0C0717-05)												
EPA 8270D (SIM)												
Acenaphthene	0.620	---	0.0105	mg/kg dry	1	0.841	ND	74	44 - 120%	---	---	
Acenaphthylene	0.621	---	0.0105	mg/kg dry	1	0.841	ND	74	39 - 120%	---	---	
Anthracene	0.586	---	0.0105	mg/kg dry	1	0.841	ND	70	50 - 120%	---	---	
Benz(a)anthracene	0.567	---	0.0105	mg/kg dry	1	0.841	ND	67	54 - 122%	---	---	
Benzo(a)pyrene	0.530	---	0.0105	mg/kg dry	1	0.841	ND	63	50 - 125%	---	---	
Benzo(b)fluoranthene	0.592	---	0.0105	mg/kg dry	1	0.841	ND	70	53 - 128%	---	---	
Benzo(k)fluoranthene	0.618	---	0.0105	mg/kg dry	1	0.841	ND	73	56 - 123%	---	---	
Benzo(g,h,i)perylene	0.547	---	0.0105	mg/kg dry	1	0.841	ND	65	49 - 127%	---	---	
Chrysene	0.611	---	0.0105	mg/kg dry	1	0.841	ND	73	57 - 120%	---	---	
Dibenz(a,h)anthracene	0.603	---	0.0105	mg/kg dry	1	0.841	ND	72	50 - 129%	---	---	
Fluoranthene	0.613	---	0.0105	mg/kg dry	1	0.841	ND	73	55 - 120%	---	---	
Fluorene	0.621	---	0.0105	mg/kg dry	1	0.841	ND	74	47 - 120%	---	---	
Indeno(1,2,3-cd)pyrene	0.562	---	0.0105	mg/kg dry	1	0.841	ND	67	49 - 130%	---	---	
1-Methylnaphthalene	0.577	---	0.0105	mg/kg dry	1	0.841	ND	69	43 - 120%	---	---	
2-Methylnaphthalene	0.575	---	0.0105	mg/kg dry	1	0.841	ND	68	39 - 120%	---	---	
Naphthalene	0.572	---	0.0105	mg/kg dry	1	0.841	ND	68	38 - 120%	---	---	
Phenanthrene	0.586	---	0.0105	mg/kg dry	1	0.841	ND	70	49 - 120%	---	---	
Pyrene	0.602	---	0.0105	mg/kg dry	1	0.841	ND	72	55 - 120%	---	---	
Dibenzofuran	0.619	---	0.0105	mg/kg dry	1	0.841	ND	74	35 - 120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 72 %*		*Limits: 46-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*78 %*		*49-126 %*			*"*					

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030806 - EPA 3510C (Acid Extraction)									Water			
Blank (0030806-BLK1)		Prepared: 03/23/20 12:02		Analyzed: 03/23/20 16:23								
EPA 8270D (SIM)												
Acenaphthene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0364	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0182	ug/L	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 53-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*80 %*	*58-132 %*			*"*					
LCS (0030806-BS1)		Prepared: 03/23/20 12:02		Analyzed: 03/23/20 16:49								
EPA 8270D (SIM)												
Acenaphthene	2.45	---	0.0200	ug/L	1	4.00	---	61	48 - 120%	---	---	
Acenaphthylene	2.42	---	0.0200	ug/L	1	4.00	---	60	35 - 121%	---	---	
Anthracene	2.51	---	0.0200	ug/L	1	4.00	---	63	53 - 120%	---	---	
Benz(a)anthracene	2.63	---	0.0200	ug/L	1	4.00	---	66	59 - 120%	---	---	
Benzo(a)pyrene	2.39	---	0.0200	ug/L	1	4.00	---	60	53 - 120%	---	---	
Benzo(b)fluoranthene	2.78	---	0.0200	ug/L	1	4.00	---	69	53 - 126%	---	---	
Benzo(k)fluoranthene	2.85	---	0.0200	ug/L	1	4.00	---	71	54 - 125%	---	---	
Benzo(g,h,i)perylene	2.45	---	0.0200	ug/L	1	4.00	---	61	44 - 128%	---	---	
Chrysene	2.72	---	0.0200	ug/L	1	4.00	---	68	57 - 120%	---	---	

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6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030806 - EPA 3510C (Acid Extraction)							**Water**					
LCS (0030806-BS1)		Prepared: 03/23/20 12:02		Analyzed: 03/23/20 16:49								
Dibenz(a,h)anthracene	2.75	---	0.0200	ug/L	1	4.00	---	69	44 - 131%	---	---	
Fluoranthene	2.76	---	0.0200	ug/L	1	4.00	---	69	58 - 120%	---	---	
Fluorene	2.51	---	0.0200	ug/L	1	4.00	---	63	50 - 120%	---	---	
Indeno(1,2,3-cd)pyrene	2.58	---	0.0200	ug/L	1	4.00	---	65	48 - 130%	---	---	
1-Methylnaphthalene	2.22	---	0.0400	ug/L	1	4.00	---	55	41 - 120%	---	---	
2-Methylnaphthalene	2.18	---	0.0400	ug/L	1	4.00	---	54	39 - 120%	---	---	
Naphthalene	2.20	---	0.0400	ug/L	1	4.00	---	55	43 - 120%	---	---	
Phenanthrene	2.59	---	0.0200	ug/L	1	4.00	---	65	53 - 120%	---	---	
Pyrene	2.71	---	0.0200	ug/L	1	4.00	---	68	53 - 121%	---	---	
Dibenzofuran	2.45	---	0.0200	ug/L	1	4.00	---	61	35 - 120%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 59 %*		*Limits: 53-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*72 %*		*58-132 %*			*"*					
LCS Dup (0030806-BSD1)		Prepared: 03/23/20 12:02		Analyzed: 03/23/20 17:14								**Q-19**
EPA 8270D (SIM)												
Acenaphthene	2.50	---	0.0200	ug/L	1	4.00	---	62	48 - 120%	2	30%	
Acenaphthylene	2.50	---	0.0200	ug/L	1	4.00	---	63	35 - 121%	3	30%	
Anthracene	2.63	---	0.0200	ug/L	1	4.00	---	66	53 - 120%	4	30%	
Benz(a)anthracene	2.73	---	0.0200	ug/L	1	4.00	---	68	59 - 120%	4	30%	
Benzo(a)pyrene	2.44	---	0.0200	ug/L	1	4.00	---	61	53 - 120%	2	30%	
Benzo(b)fluoranthene	2.85	---	0.0200	ug/L	1	4.00	---	71	53 - 126%	3	30%	
Benzo(k)fluoranthene	2.94	---	0.0200	ug/L	1	4.00	---	74	54 - 125%	3	30%	
Benzo(g,h,i)perylene	2.49	---	0.0200	ug/L	1	4.00	---	62	44 - 128%	2	30%	
Chrysene	2.79	---	0.0200	ug/L	1	4.00	---	70	57 - 120%	2	30%	
Dibenz(a,h)anthracene	2.80	---	0.0200	ug/L	1	4.00	---	70	44 - 131%	2	30%	
Fluoranthene	2.85	---	0.0200	ug/L	1	4.00	---	71	58 - 120%	3	30%	
Fluorene	2.60	---	0.0200	ug/L	1	4.00	---	65	50 - 120%	4	30%	
Indeno(1,2,3-cd)pyrene	2.61	---	0.0200	ug/L	1	4.00	---	65	48 - 130%	1	30%	
1-Methylnaphthalene	2.28	---	0.0400	ug/L	1	4.00	---	57	41 - 120%	2	30%	
2-Methylnaphthalene	2.23	---	0.0400	ug/L	1	4.00	---	56	39 - 120%	2	30%	
Naphthalene	2.29	---	0.0400	ug/L	1	4.00	---	57	43 - 120%	4	30%	
Phenanthrene	2.66	---	0.0200	ug/L	1	4.00	---	66	53 - 120%	2	30%	
Pyrene	2.76	---	0.0200	ug/L	1	4.00	---	69	53 - 121%	2	30%	
Dibenzofuran	2.55	---	0.0200	ug/L	1	4.00	---	64	35 - 120%	4	30%	

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030806 - EPA 3510C (Acid Extraction)												**Water**
LCS Dup (0030806-BSD1)			Prepared: 03/23/20 12:02 Analyzed: 03/23/20 17:14									**Q-19**
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 60 %*	*Limits: 53-120 %*	*Dilution: 1x*							
p-Terphenyl-d14 (Surr)			*73 %*	*58-132 %*	*"*							

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030741 - EPA 3051A							Soil					
Blank (0030741-BLK1)		Prepared: 03/20/20 10:31		Analyzed: 03/20/20 13:38								
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Beryllium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (0030741-BS1)		Prepared: 03/20/20 10:31		Analyzed: 03/20/20 13:43								
EPA 6020A												
Antimony	26.4	---	1.00	mg/kg wet	10	25.0	---	106	80 - 120%	---	---	
Arsenic	50.3	---	1.00	mg/kg wet	10	50.0	---	101	80 - 120%	---	---	
Beryllium	24.6	---	0.200	mg/kg wet	10	25.0	---	99	80 - 120%	---	---	
Cadmium	50.4	---	0.200	mg/kg wet	10	50.0	---	101	80 - 120%	---	---	
Chromium	49.3	---	1.00	mg/kg wet	10	50.0	---	99	80 - 120%	---	---	
Copper	52.8	---	1.00	mg/kg wet	10	50.0	---	106	80 - 120%	---	---	
Lead	53.6	---	0.200	mg/kg wet	10	50.0	---	107	80 - 120%	---	---	
Mercury	1.05	---	0.0800	mg/kg wet	10	1.00	---	105	80 - 120%	---	---	
Nickel	52.1	---	1.00	mg/kg wet	10	50.0	---	104	80 - 120%	---	---	
Selenium	26.0	---	1.00	mg/kg wet	10	25.0	---	104	80 - 120%	---	---	
Silver	26.8	---	0.200	mg/kg wet	10	25.0	---	107	80 - 120%	---	---	
Thallium	26.3	---	0.200	mg/kg wet	10	25.0	---	105	80 - 120%	---	---	
Zinc	50.9	---	4.00	mg/kg wet	10	50.0	---	102	80 - 120%	---	---	
Duplicate (0030741-DUP1)		Prepared: 03/20/20 10:31		Analyzed: 03/20/20 14:37								
QC Source Sample: GP03-0-10 (A0C0717-03)												
EPA 6020A												

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EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030741 - EPA 3051A							**Soil**					
Duplicate (0030741-DUP1)		Prepared: 03/20/20 10:31		Analyzed: 03/20/20 14:37								
QC Source Sample: GP03-0-10 (A0C0717-03)												
Antimony	ND	---	1.03	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	**2.47**	---	1.03	mg/kg dry	10	---	2.65	---	---	7	40%	
Beryllium	ND	---	0.205	mg/kg dry	10	---	ND	---	---	**---**	**40%**	Q-05
Cadmium	ND	---	0.205	mg/kg dry	10	---	ND	---	---	---	40%	
Chromium	**8.58**	---	1.03	mg/kg dry	10	---	9.54	---	---	11	40%	
Copper	**1.56**	---	1.03	mg/kg dry	10	---	2.10	---	---	29	40%	
Lead	**1.21**	---	0.205	mg/kg dry	10	---	1.15	---	---	5	40%	
Mercury	ND	---	0.0822	mg/kg dry	10	---	ND	---	---	---	40%	
Nickel	**4.45**	---	1.03	mg/kg dry	10	---	4.80	---	---	8	40%	
Selenium	ND	---	1.03	mg/kg dry	10	---	ND	---	---	---	40%	
Silver	ND	---	0.205	mg/kg dry	10	---	ND	---	---	---	40%	
Thallium	ND	---	0.205	mg/kg dry	10	---	ND	---	---	---	40%	
Zinc	**8.65**	---	4.11	mg/kg dry	10	---	8.65	---	---	0.07	40%	
Matrix Spike (0030741-MS1)		Prepared: 03/20/20 10:31		Analyzed: 03/20/20 14:43								
QC Source Sample: GP03-0-10 (A0C0717-03)												
EPA 6020A												
Antimony	24.8	---	1.03	mg/kg dry	10	25.6	ND	97	75 - 125%	---	---	
Arsenic	49.7	---	1.03	mg/kg dry	10	51.3	2.65	92	75 - 125%	---	---	
Beryllium	24.3	---	0.205	mg/kg dry	10	25.6	ND	95	75 - 125%	---	---	
Cadmium	48.8	---	0.205	mg/kg dry	10	51.3	ND	95	75 - 125%	---	---	
Chromium	54.5	---	1.03	mg/kg dry	10	51.3	9.54	88	75 - 125%	---	---	
Copper	51.3	---	1.03	mg/kg dry	10	51.3	2.10	96	75 - 125%	---	---	
Lead	52.1	---	0.205	mg/kg dry	10	51.3	1.15	99	75 - 125%	---	---	
Mercury	1.03	---	0.0820	mg/kg dry	10	1.03	ND	101	75 - 125%	---	---	
Nickel	53.8	---	1.03	mg/kg dry	10	51.3	4.80	96	75 - 125%	---	---	
Selenium	24.7	---	1.03	mg/kg dry	10	25.6	ND	97	75 - 125%	---	---	
Silver	25.4	---	0.205	mg/kg dry	10	25.6	ND	99	75 - 125%	---	---	
Thallium	25.4	---	0.205	mg/kg dry	10	25.6	ND	99	75 - 125%	---	---	
Zinc	56.7	---	4.10	mg/kg dry	10	51.3	8.65	94	75 - 125%	---	---	

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030853 - EPA 3015A							**Water**					
Blank (0030853-BLK1)		Prepared: 03/24/20 11:24		Analyzed: 03/31/20 16:40								
EPA 6020A												
Antimony	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Beryllium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Copper	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	---	0.0800	ug/L	1	---	---	---	---	---	---	
Nickel	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Selenium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Thallium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Zinc	ND	---	4.00	ug/L	1	---	---	---	---	---	---	
LCS (0030853-BS1)		Prepared: 03/24/20 11:24		Analyzed: 03/31/20 16:36								
EPA 6020A												
Antimony	27.4	---	1.00	ug/L	1	27.8	---	99	80 - 120%	---	---	
Arsenic	53.0	---	1.00	ug/L	1	55.6	---	95	80 - 120%	---	---	
Beryllium	27.5	---	0.200	ug/L	1	27.8	---	99	80 - 120%	---	---	
Cadmium	51.1	---	0.200	ug/L	1	55.6	---	92	80 - 120%	---	---	
Chromium	54.0	---	1.00	ug/L	1	55.6	---	97	80 - 120%	---	---	
Copper	57.6	---	2.00	ug/L	1	55.6	---	104	80 - 120%	---	---	
Lead	55.5	---	0.200	ug/L	1	55.6	---	100	80 - 120%	---	---	
Mercury	1.11	---	0.0800	ug/L	1	1.11	---	100	80 - 120%	---	---	
Nickel	57.3	---	2.00	ug/L	1	55.6	---	103	80 - 120%	---	---	
Selenium	25.3	---	1.00	ug/L	1	27.8	---	91	80 - 120%	---	---	
Silver	28.0	---	0.200	ug/L	1	27.8	---	101	80 - 120%	---	---	
Thallium	26.3	---	0.200	ug/L	1	27.8	---	95	80 - 120%	---	---	
Zinc	51.7	---	4.00	ug/L	1	55.6	---	93	80 - 120%	---	---	

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Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030739 - DI Leach							**Soil**					
Blank (0030739-BLK1)		Prepared: 03/20/20 09:51		Analyzed: 03/20/20 13:49								
EPA 9056A												
Chloride	ND	---	10.0	mg/kg wet	1	---	---	---	---	---	---	
Sulfate	ND	---	10.0	mg/kg wet	1	---	---	---	---	---	---	
LCS (0030739-BS1)		Prepared: 03/20/20 09:51		Analyzed: 03/20/20 14:11								
EPA 9056A												
Chloride	78.8	---	10.0	mg/kg wet	1	80.0	---	99	90 - 110%	---	---	
Sulfate	80.3	---	10.0	mg/kg wet	1	80.0	---	100	90 - 110%	---	---	
Duplicate (0030739-DUP1)		Prepared: 03/20/20 09:51		Analyzed: 03/20/20 14:54								
QC Source Sample: GP01-0-10 (A0C0717-01)												
EPA 9056A												
Chloride	ND	---	10.2	mg/kg dry	1	---	ND	---	---	---	15%	
Sulfate	**11.5**	---	10.2	mg/kg dry	1	---	11.0	---	---	4	15%	
Matrix Spike (0030739-MS1)		Prepared: 03/20/20 09:51		Analyzed: 03/20/20 15:15								
QC Source Sample: GP01-0-10 (A0C0717-01)												
EPA 9056A												
Chloride	88.4	---	10.7	mg/kg dry	1	86.0	ND	103	80 - 120%	---	---	
Sulfate	98.0	---	10.7	mg/kg dry	1	86.0	11.0	101	80 - 120%	---	---	

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601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030737 - DI Leach												**Soil**
Duplicate (0030737-DUP1)		Prepared: 03/20/20 09:36		Analyzed: 03/20/20 11:39								
QC Source Sample: GP01-0-10 (A0C0717-01)												
EPA 9045D												
Soil pH (measured in H2O)	**8.90**	---		pH Units	1	---	8.81	---	---	1	5%	pH_S
pH Temperature (deg C)	**22.5**	---		pH Units	1	---	22.7	---	---	0.9	30%	pH_S
Reference (0030737-SRM1)		Prepared: 03/20/20 09:36		Analyzed: 03/20/20 11:36								
EPA 9045D												
Soil pH (measured in H2O)	6.03	---		pH Units	1	6.00		100	98.33333 - 101.6667%	---	---	
pH Temperature (deg C)	21.8	---		pH Units	1	20.0		109	50 - 200%	---	---	
Reference (0030737-SRM2)		Prepared: 03/20/20 09:36		Analyzed: 03/20/20 11:44								
EPA 9045D												
Soil pH (measured in H2O)	7.98	---		pH Units	1	8.00		100	98.75 - 101.25%	---	---	
pH Temperature (deg C)	21.9	---		pH Units	1	20.0		110	50 - 200%	---	---	

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Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0030740 - Total Solids (Dry Weight)												**Soil**

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

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SAMPLE PREPARATION INFORMATION

Hydrocarbon Identification Screen by NWTPH-HCID

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

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030801							
A0C0717-06	Water	NWTPH-HCID	03/17/20 17:00	03/23/20 12:54	880mL/5mL	1000mL/5mL	1.14
A0C0717-07	Water	NWTPH-HCID	03/18/20 14:30	03/23/20 12:54	1020mL/5mL	1000mL/5mL	0.98

Prep: NWTPH-HCID (Soil)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030775							
A0C0717-01	Soil	NWTPH-HCID	03/18/20 09:30	03/23/20 12:57	10.87g/10mL	10g/10mL	0.92
A0C0717-02	Soil	NWTPH-HCID	03/17/20 11:10	03/23/20 12:57	10.21g/10mL	10g/10mL	0.98
A0C0717-03	Soil	NWTPH-HCID	03/17/20 10:05	03/23/20 12:57	10.43g/10mL	10g/10mL	0.96
A0C0717-04	Soil	NWTPH-HCID	03/17/20 13:10	03/23/20 12:57	10.3g/10mL	10g/10mL	0.97
A0C0717-05	Soil	NWTPH-HCID	03/17/20 10:30	03/23/20 12:57	10.51g/10mL	10g/10mL	0.95

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030823							
A0C0717-02	Soil	NWTPH-Dx	03/17/20 11:10	03/24/20 13:04	10.67g/5mL	10g/5mL	0.94
A0C0717-04	Soil	NWTPH-Dx	03/17/20 13:10	03/24/20 13:04	10.46g/5mL	10g/5mL	0.96

Volatile Organic Compounds by EPA 8260C

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030828							
A0C0717-08	Water	EPA 8260C	03/17/20 00:00	03/24/20 09:43	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030749							
A0C0717-06	Water	EPA 8082A	03/17/20 17:00	03/20/20 12:23	830mL/5mL	1000mL/5mL	1.20
A0C0717-07	Water	EPA 8082A	03/18/20 14:30	03/20/20 12:23	880mL/5mL	1000mL/5mL	1.14

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SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030757							
A0C0717-01	Soil	EPA 8082A	03/18/20 09:30	03/20/20 12:30	10.16g/5mL	10g/5mL	0.98
A0C0717-02	Soil	EPA 8082A	03/17/20 11:10	03/20/20 12:30	10.78g/5mL	10g/5mL	0.93
A0C0717-03	Soil	EPA 8082A	03/17/20 10:05	03/20/20 12:30	10.78g/5mL	10g/5mL	0.93
A0C0717-04	Soil	EPA 8082A	03/17/20 13:10	03/20/20 12:30	10.18g/5mL	10g/5mL	0.98
A0C0717-05	Soil	EPA 8082A	03/17/20 10:30	03/20/20 12:30	10.68g/5mL	10g/5mL	0.94

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030826							
A0C0717-06	Water	EPA 8081B	03/17/20 17:00	03/24/20 07:16	1000mL/5mL	1000mL/5mL	1.00
A0C0717-07	Water	EPA 8081B	03/18/20 14:30	03/24/20 07:16	930mL/5mL	1000mL/5mL	1.08

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030762							
A0C0717-01RE1	Soil	EPA 8081B	03/18/20 09:30	03/20/20 07:18	10.44g/10mL	10g/5mL	1.92
A0C0717-02RE1	Soil	EPA 8081B	03/17/20 11:10	03/20/20 07:18	10.45g/10mL	10g/5mL	1.91
A0C0717-03RE1	Soil	EPA 8081B	03/17/20 10:05	03/20/20 07:18	10.63g/10mL	10g/5mL	1.88
A0C0717-04RE1	Soil	EPA 8081B	03/17/20 13:10	03/20/20 07:18	10.12g/10mL	10g/5mL	1.98
A0C0717-05RE1	Soil	EPA 8081B	03/17/20 10:30	03/20/20 07:18	10.37g/10mL	10g/5mL	1.93

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030806							
A0C0717-06	Water	EPA 8270D (SIM)	03/17/20 17:00	03/23/20 12:02	1010mL/2mL	1000mL/2mL	0.99
A0C0717-07	Water	EPA 8270D (SIM)	03/18/20 14:30	03/23/20 12:02	970mL/2mL	1000mL/2mL	1.03

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030726							
A0C0717-01	Soil	EPA 8270D (SIM)	03/18/20 09:30	03/20/20 07:17	10.67g/5mL	10g/5mL	0.94
A0C0717-02	Soil	EPA 8270D (SIM)	03/17/20 11:10	03/20/20 07:17	10.67g/5mL	10g/5mL	0.94

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Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

SAMPLE PREPARATION INFORMATION

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0C0717-03	Soil	EPA 8270D (SIM)	03/17/20 10:05	03/20/20 07:17	10.47g/5mL	10g/5mL	0.96
A0C0717-04	Soil	EPA 8270D (SIM)	03/17/20 13:10	03/20/20 07:17	10.63g/5mL	10g/5mL	0.94
A0C0717-05	Soil	EPA 8270D (SIM)	03/17/20 10:30	03/20/20 07:17	10.09g/5mL	10g/5mL	0.99

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030853							
A0C0717-06	Water	EPA 6020A	03/17/20 17:00	03/24/20 11:24	45mL/50mL	45mL/50mL	1.00
A0C0717-07	Water	EPA 6020A	03/18/20 14:30	03/24/20 11:24	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030741							
A0C0717-01	Soil	EPA 6020A	03/18/20 09:30	03/20/20 10:31	0.468g/50mL	0.5g/50mL	1.07
A0C0717-02	Soil	EPA 6020A	03/17/20 11:10	03/20/20 10:31	0.484g/50mL	0.5g/50mL	1.03
A0C0717-03	Soil	EPA 6020A	03/17/20 10:05	03/20/20 10:31	0.495g/50mL	0.5g/50mL	1.01
A0C0717-04	Soil	EPA 6020A	03/17/20 13:10	03/20/20 10:31	0.487g/50mL	0.5g/50mL	1.03
A0C0717-05	Soil	EPA 6020A	03/17/20 10:30	03/20/20 10:31	0.464g/50mL	0.5g/50mL	1.08

Anions by Ion Chromatography

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030739							
A0C0717-01	Soil	EPA 9056A	03/18/20 09:30	03/20/20 09:51	5.2145g/50mL	5g/50mL	0.96
A0C0717-02	Soil	EPA 9056A	03/17/20 11:10	03/20/20 09:51	5.2583g/50mL	5g/50mL	0.95
A0C0717-03	Soil	EPA 9056A	03/17/20 10:05	03/20/20 09:51	5.0811g/50mL	5g/50mL	0.98
A0C0717-04	Soil	EPA 9056A	03/17/20 13:10	03/20/20 09:51	5.1238g/50mL	5g/50mL	0.98
A0C0717-05	Soil	EPA 9056A	03/17/20 10:30	03/20/20 09:51	5.1313g/50mL	5g/50mL	0.97

Conventional Chemistry Parameters

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030737							

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Lisa A Domenighini

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SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: DI Leach

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0C0717-01	Soil	EPA 9045D	03/18/20 09:30	03/20/20 09:36	10.0486g/10mL	10g/10mL	NA
A0C0717-02	Soil	EPA 9045D	03/17/20 11:10	03/20/20 09:36	10.1126g/10mL	10g/10mL	NA
A0C0717-03	Soil	EPA 9045D	03/17/20 10:05	03/20/20 09:36	10.3777g/10mL	10g/10mL	NA
A0C0717-04	Soil	EPA 9045D	03/17/20 13:10	03/20/20 09:36	10.2969g/10mL	10g/10mL	NA
A0C0717-05	Soil	EPA 9045D	03/17/20 10:30	03/20/20 09:36	10.2884g/10mL	10g/10mL	NA

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0030740							
A0C0717-01	Soil	EPA 8000C	03/18/20 09:30	03/20/20 10:14			NA
A0C0717-02	Soil	EPA 8000C	03/17/20 11:10	03/20/20 10:14			NA
A0C0717-03	Soil	EPA 8000C	03/17/20 10:05	03/20/20 10:14			NA
A0C0717-04	Soil	EPA 8000C	03/17/20 13:10	03/20/20 10:14			NA
A0C0717-05	Soil	EPA 8000C	03/17/20 10:30	03/20/20 10:14			NA

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QUALIFIER DEFINITIONS

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

Apex Laboratories

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
pH_S	Method recommends preparation 'as soon as possible'. See Sample Preparation Information section of report for details. Consult regulator or permit manager to determine the usability of data for intended purpose.
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-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

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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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Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories

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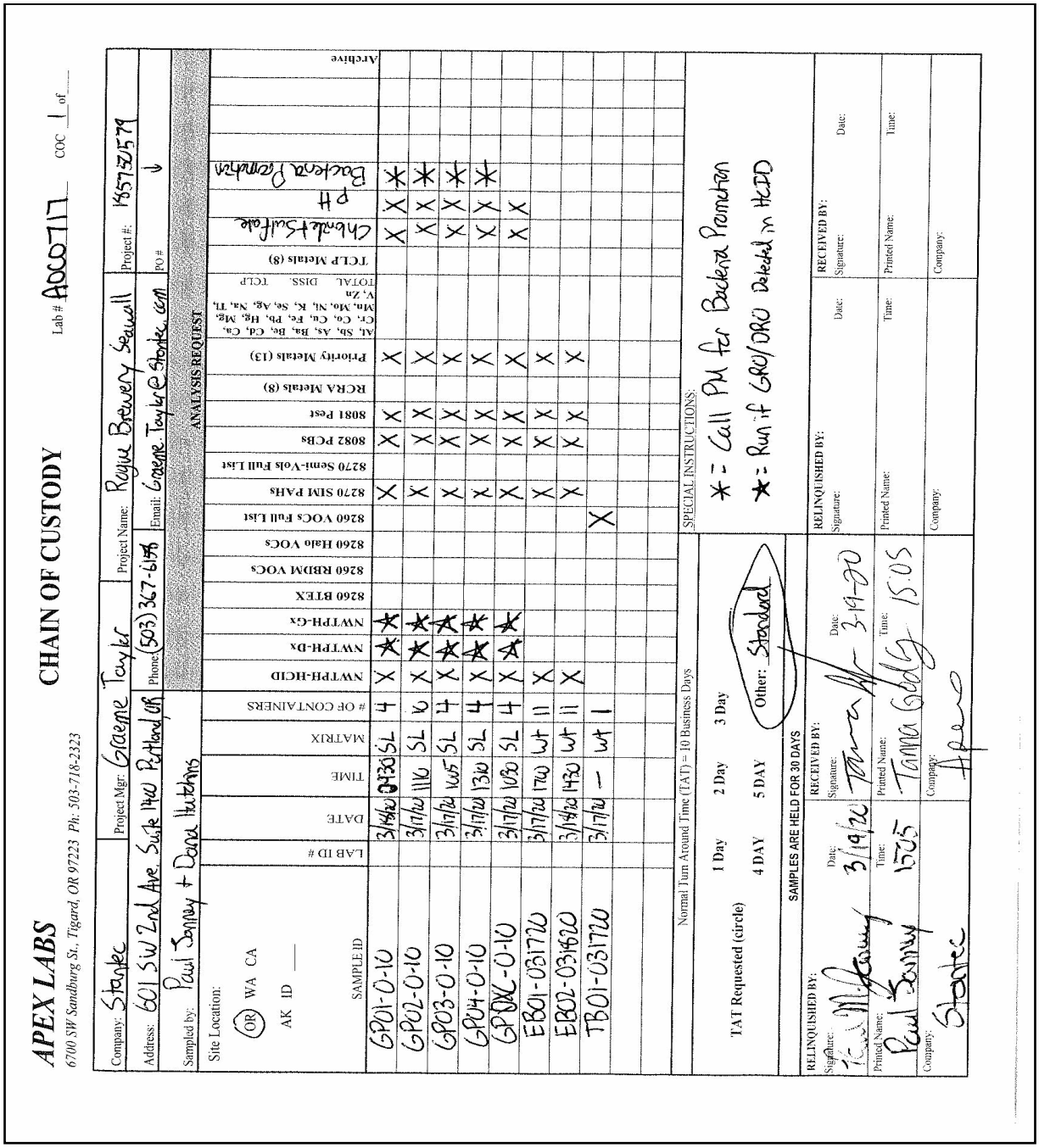

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A0C0717 COC 1 of 1

Company: Stantec | Project Mgr: Graeme Taylor | Project Name: Rogue Brewery Seawall | Project #: 185735579
Address: 601 SW 2nd Ave. Suite 1400 Portland OR | Phone: (503) 367-6954 | Email: Graeme.Taylor@Stantec.com | PO #
Sampled by: Paul Tommy + Dave Hutchins

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)	Chloride + Sulfate	pH	Bacteria Presumptive	Archive
GP01-0-10		3/16/20	0930	SL	4	X	✱	✱					X		X	X		X		X	X		
GP02-0-10		3/17/20	1116	SL	6	X	✱	✱					X		X	X		X		X	X		
GP03-0-10		3/17/20	1405	SL	4	X	✱	✱					X		X	X		X		X	X		
GP04-0-10		3/17/20	1330	SL	4	X	✱	✱					X		X	X		X		X	X		
GP04X-0-10		3/17/20	1020	SL	4	X	✱	✱					X		X	X		X		X	X		
EB01-031720		3/17/20	1720	WT	11	X							X		X	X		X					
EB02-031620		3/16/20	1430	WT	11	X							X		X	X		X					
TB01-031720		3/17/20	—	WT	1	X						X											

Normal Turn Around Time (TAT) = 10 Business Days

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

SPECIAL INSTRUCTIONS:
✱ = Call PM for Bacteria Premium
✱ = Run if GRO/DRO Detected in HCID

SAMPLES ARE HELD FOR 30 DAYS

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

Apex Laboratories

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

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Stantec Portland	Project: **Rogue Brewery**	
601 SW 2nd Ave Suite 1400	Project Number: **185750579**	**Report ID:**
Portland, OR 97204	Project Manager: **Graeme Taylor**	**A0C0717 - 04 02 20 0852**

APEX LABS COOLER RECEIPT FORM

Client: Stantec Element WO#: A0C0717

Project/Project #: Rogue Brewery Seawall / 185750579

Delivery Info:

Date/time received: 3-19-20 @ 15:05 By: TMH

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

Cooler Inspection Date/time inspected: 3-19-20 @ 15:05 By: TMH

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)	3.4						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	good						

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

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA

Out of temperature samples form initiated? Yes/No/NA

Samples Inspection: Date/time inspected: 3-19-20 @ 17:57 By: TMH

All samples intact? Yes X No ___ Comments:

Bottle labels/COCs agree? Yes ~~X~~ TMH 3-19-20 No X Comments: COC Stated 4 carts received 3 for 6DOXC-0-10

COC/container discrepancies form initiated? Yes ___ No ___ NA X

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

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

Comments

Water samples: pH checked: Yes X No ___ NA ___ pH appropriate? Yes ___ No ___ NA X

Comments: EB01 031720 ph=7

Additional information: TB#2251

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

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Appendix C NORTHWEST TESTING, INC LAB REPORT

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B, Wilsonville, Oregon 97070 | ph: 503.682.1880 fax: 503.682.2753 | www.nwgeotech.com

TECHNICAL REPORT

Report To:	Mr. Graeme Taylor Stantec 601 SW Second Avenue, Suite 1400 Portland, Oregon 97204-3128	**Date:** **Lab No.:**	05/07/2020 20-062
Project:	Laboratory Testing – Rogue Brewery	**Project No.:**	3351.1.1

Report of: Atterberg limits, moisture content, dry density, particle size analysis, minimum resistivity, and No. 200 wash.

Sample Identification

NTI completed Atterberg limits, moisture content, dry density, particle size analysis, minimum resistivity, and No. 200 wash testing on soil samples delivered to our laboratory on March 19, 2020. Testing was performed in accordance with the standards indicated. Our laboratory test results are summarized on the following tables and attached pages.

Laboratory Testing

Atterberg Limits (ASTM D4318)			
Sample ID	**Liquid Limit**	**Plastic Limit**	**Plasticity Index**
GP 01 @ 16.5 – 17.5 ft.	NP	NP	NP

Attachments: Laboratory Test Results
Hydrometer Sieve Test Results
Consolidation Test Results
Specialty Analytical Report 1903040

Copies: Addressee

Northwest Testing, Inc.
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TECHNICAL REPORT

Report To:	Mr. Graeme Taylor Stantec 601 SW Second Avenue, Suite 1400 Portland, Oregon 97204-3128	**Date:** **Lab No.:**	05/07/2020 20-062
Project:	Laboratory Testing – Rogue Brewery	**Project No.:**	3351.1.1

Laboratory Testing

Moisture Content of Soils (ASTM D 2216)			
Sample ID	**Moisture Content (%)**	**Sample ID**	**Moisture Content (%)**
GP 01 @ 4.0 – 5.5 ft.	5.3	GP 03 @ 2.5 – 4.0 ft.	3.5
GP 01 @ 15.0 – 16.5 ft.	28.5	GP 04 @ 4.0 – 5.5 ft.	6.3
GP 01 @ 18.0 – 19.5 ft.	26.1	GP 04 @ 15.0 – 16.5 ft.	21.3
GP 01 @ 25.0 – 26.5 ft.	22.1	GP 04 @ 20.0 – 21.5 ft.	25.4
GP 01 @ 30.0 – 31.5 ft.	26.6	GP 04 @ 25.0 – 26.5 ft.	18.4
GP 01 @ 35.0 – 36.5 ft.	22.6	GP 04 @ 30.0 – 31.5 ft.	24.5
GP 01 @ 40.0 – 41.5 ft.	21.1	GP 04 @ 35.0 – 36.5 ft.	18.6
GP 01 @ 45.0 – 46.5 ft.	25.9	GP 04 @ 40.0 – 41.5 ft.	22.8
GP 01 @ 50.0 – 51.5 ft.	24.5	GP 04 @ 45.0 – 46.5 ft.	23.3
GP 01 @ 55.0 – 56.5 ft.	25.1	GP 04 @ 50.0 – 51.0 ft.	23.4
GP 01 @ 60.0 – 61.5 ft.	22.9	GP 04 @ 55.0 – 56.5 ft.	22.5
GP 01 @ 65.0 – 66.5 ft.	22.6	GP 04 @ 60.0 – 61.5 ft.	24.1
GP 01 @ 70.0 – 71.5 ft.	22.7	GP 04 @ 65.0 – 66.5 ft.	22.7
GP 01 @ 75.0 – 76.5 ft.	23.3	GP 04 @ 70.0 – 71.5 ft.	19.6
GP 02 @ 4.0 – 5.5 ft.	4.5	GP 04 @ 75.0 – 76.5 ft.	24.7

Moisture Content and Dry Density of Soils (ASTM D 2216/ D7263)		
Sample ID	**Moisture Content (%)**	**Dry Density (pcf)**
GP 01 @ 8.0 – 10.0 ft.	3.7	110.8
GP 01 @ 16.5 – 17.5 ft.	22.0	105.4
GP 02 @ 8.0 – 9.5 ft.	5.7	110.9
GP 03 @ 8.0 – 9.5 ft.	4.7	110.5
GP 04 @ 8.0 – 10.0 ft.	13.8	101.4

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TECHNICAL REPORT

Report To:	Mr. Graeme Taylor Stantec 601 SW Second Avenue, Suite 1400 Portland, Oregon 97204-3128	**Date:** **Lab No.:**	05/07/2020 20-062
Project:	Laboratory Testing – Rogue Brewery	**Project No.:**	3351.1.1

Laboratory Testing

Particle Size Analysis of Soil (ASTM D422)		
Sieve Size	**GP 01 @ 4.0 – 5.5 ft. & GP 01 @ 8.0 – 10.0 ft. Combined Percent Passing**	**GP 02 @ 4.0 – 5.5 ft. & GP 02 @ 8.0 – 9.5 ft. Combined Percent Passing**
1”	100	- -
¾”	97	- -
½”	97	- -
3/8”	97	100
¼”	96	99
#4	95	99
#8	93	99
#10	93	99
#16	92	99
#30	91	98
#40	90	97
#50	86	92
#100	10	8
#200	1.5	0.6

Particle Size Analysis of Soil (ASTM D422)		
Sieve Size	**GP 03 @ 2.5 – 4.0 ft. & GP 03 @ 8.0 – 9.5 ft. Combined Percent Passing**	**GP 04 @ 4.0 – 5.5 ft. & GP 04 @ 8.0 – 10.0 ft. Combined Percent Passing**
½”	- -	100
3/8”	- -	99
¼”	- -	99
#4	- -	98
#8	- -	98
#10	- -	98
#16	100	97
#30	99	97
#40	98	96
#50	91	88
#100	9	14
#200	2.0	3.6

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TECHNICAL REPORT

Report To:	Mr. Graeme Taylor Stantec 601 SW Second Avenue, Suite 1400 Portland, Oregon 97204-3128	**Date:** **Lab No.:**	05/07/2020 20-062
Project:	Laboratory Testing – Rogue Brewery	**Project No.:**	3351.1.1

Laboratory Testing

Resistivity of Soil (AASHTO T288)	
Sample ID	**Minimum Resistivity (Ω-cm)**
GP 01 @ 4.0 – 4.5 ft. & GP 01 @ 8.0 – 10 ft. Combined	15,548
GP 02 @ 4.0 – 4.5 ft. & GP 02 @ 8.0 – 9.5 ft. Combined	18,928
GP 03 @ 2.5 – 4.0 ft. & GP 03 @ 8.0 – 9.5 ft. Combined	17,576
GP 04 @ 4.0 – 4.5 ft. & GP 04 @ 8.0 – 10.0 ft. Combined	13,520

Amount of Material Finer than the No. 200 Sieve (ASTM D1140)			
Sample ID	**Percent Passing the No. 200 Sieve**	**Sample ID**	**Percent Passing the No. 200 Sieve**
GP 01 @ 16.5 – 17.5 ft.	2.0	GP 04 @ 20.0 – 21.5 ft.	2.1
GP 01 @ 25.0 – 26.5 ft.	4.3	GP 04 @ 30.0 – 31.5 ft.	3.6
GP 01 @ 35.0 – 36.5 ft.	5.2	GP 04 @ 35.0 – 36.5 ft.	3.9
GP 01 @ 45.0 – 46.5 ft.	7.8	GP 04 @ 45.0 – 46.5 ft.	5.1
GP 01 @ 65.0 – 66.5 ft.	5.9	GP 04 @ 55.0 – 56.5 ft.	7.1
GP 02 @ 4.0 – 4.5 ft.	0.2	GP 04 @ 70.0 – 71.5 ft.	8.4
GP 03 @ 8.0 – 10.0 ft.	0.2	GP 04 @ 30.0 – 31.5 ft.	3.6
GP 04 @ 8.0 – 10.0 ft.	0.3		

Appendix D DATA VALIDATION REPORT

DATA VALIDATION SUMMARY REPORT

GENERAL INFORMATION:

Lab Name:	APEX Laboratories
Lab SDG/Project/Work Order:	A0C0717
Project Name:	Rogue Brewery Seawall Phase II ESA
Stantec Project Number:	185750581
Client:	Oregon Cascades West Council of Governments
Validator Name:	Sarah Von Raesfeld
Date of Validation:	May 04, 2020

SAMPLE INFORMATION:

Number of Samples:	Eight
Matrix:	Five Soil, Three QC Water
Number of Trip Blanks:	One
Number of Equipment Blanks:	Two
Number of Field Duplicates:	One
Date of Sample Collection:	March 17-18, 2020

Sample Name:	Matrix	Analyses:	Batch:
GP01-0-10	Soil	TPH Screen (NWTPH HCID)	0030775
	Soil	PAHs (SW8270D SIM)	0030726
	Soil	PCBs (SW8082A)	0030757
	Soil	Priority Pollutant Metals (SW6020A)	0030741
	Soil	OCPs (SW8081B)	0030762
	Soil	Chloride and Sulfate (SW9056A)	0030739
	Soil	pH (SW9045D)	0030737
GP02-0-10	Soil	TPH Screen (NWTPH HCID)	0030775
	Soil	TPH DRO/ORO (NWTPH Dx)	0030823
	Soil	PAHs (SW8270D SIM)	0030726
	Soil	PCBs (SW8082A)	0030757
	Soil	Priority Pollutant Metals (SW6020A)	0030741
	Soil	OCPs (SW8081B)	0030762
	Soil	Chloride and Sulfate (SW9056A)	0030739
	Soil	pH (SW9045D)	0030737
GP03-0-10	Soil	TPH Screen (NWTPH HCID)	0030775
	Soil	PAHs (SW8270D SIM)	0030726
	Soil	PCBs (SW8082A)	0030757
	Soil	Priority Pollutant Metals (SW6020A)	0030741
	Soil	OCPs (SW8081B)	0030762
	Soil	Chloride and Sulfate (SW9056A)	0030739
	Soil	pH (SW9045D)	0030737
GP04-0-10	Soil	TPH Screen (NWTPH HCID)	0030775
	Soil	TPH DRO/ORO (NWTPH Dx)	0030823
	Soil	PAHs (SW8270D SIM)	0030726
	Soil	PCBs (SW8082A)	0030757
	Soil	Priority Pollutant Metals (SW6020A)	0030741
	Soil	OCPs (SW8081B)	0030762
	Soil	Chloride and Sulfate (SW9056A)	0030739
	Soil	pH (SW9045D)	0030737

Sample Name:	Matrix	Analyses:	Batch:
GP0XC-0-10	Soil	TPH Screen (NWTPH HCID)	0030775
	Soil	PAHs (SW8270D SIM)	0030726
	Soil	PCBs (SW8082A)	0030757
	Soil	Priority Pollutant Metals (SW6020A)	0030741
	Soil	OCPs (SW8081B)	0030762
	Soil	Chloride and Sulfate (SW9056A)	0030739
	Soil	pH (SW9045D)	0030737
EB01-031720	Water	TPH Screen (NWTPH HCID)	0030801
	Water	PAHs (SW8270D SIM)	0030806
	Water	PCBs (SW8082A)	0030749
	Water	OCPs (SW8081B)	0030826
	Water	Priority Pollutant Metals (SW6020A)	0030853
EB02-031820	Water	TPH Screen (NWTPH HCID)	0030801
	Water	PAHs (SW8270D SIM)	0030806
	Water	PCBs (SW8082A)	0030749
	Water	OCPs (SW8081B)	0030826
	Water	Priority Pollutant Metals (SW6020A)	0030853
TB01-031720	Water	VOCs (SW8260C)	0030828

GENERAL DATA VALIDATION:

Case Narrative:
The laboratory did not identify any non-conformances in the case narrative.

Chain of Custody:
The COC is complete. All requested analyses were performed.

Sample Receipt:
The samples were received within the acceptable temperature range of 0° - 6° C.
The laboratory noted that the number of containers on the COC (4) did not match the number of containers received (3) for sample GP0XC-0-10. There was sufficient volume to perform the requested analyses, data qualify was not affected.

Holding Times:
All samples were analyzed within the recommended holding times.
The laboratory flagged the pH results to indicate sample holding times were missed; however, the method holding time is "as soon as possible" and the sample were analyzed upon receipt. Therefore, no data were qualified.

Trip Blank Review:
There were no VOCs detected above the MRL in trip blank sample TB01-031720.

Equipment Blank Review:
There were no analytes detected above the MRL in equipment blank samples EB01-031720 and EB02-031820.

Surrogates:
All surrogate recoveries were with within acceptance limits. No qualifiers are needed.

Elevated Reporting Limits:
Metals were analyzed at a 10x dilution factor in all of the soil samples. The sample MRLs were raised accordingly but still met project requirements.

PER ANALYSIS:

Volatile Organic Compounds, *Method 8260C* (Batch 0030828)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project-specific MS/MSD samples were not analyzed.
Total Petroleum Hydrocarbons Screen, Method NWTPH-HCID (Batches 0030775 and 0030801)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Total Petroleum Hydrocarbons as Diesel and Oil, Method NWTPH-Dx (Batch 0030823)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recovery was within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project-specific MS/MSD samples were not analyzed.
Laboratory Duplicate: A project sample was not analyzed for the laboratory duplicate. No qualified are needed.
Polycyclic Aromatic Hydrocarbons, *Method 8270D* SIM (Batches 0030726 and 0030806)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample GP0XC-0-10 was analyzed as the matrix spike. The MS percent recoveries were within the acceptance limits. No qualifiers are needed.
Laboratory Duplicate: Project sample GP01-0-10 was analyzed for the laboratory duplicate. All PAHs were non-detect; no qualifiers are needed.
Polychlorinated Biphenyls, *Method 8082A* (Batches 0030757 and 0030749)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample GP0XC-0-10 was analyzed as the matrix spike. The MS percent recoveries were within the acceptance limits. No qualifiers are needed.
Laboratory Duplicate: Project sample GP01-0-10 was analyzed for the laboratory duplicate. All PCBs were non-detect; no qualifiers are needed.

Organochlorine Pesticides, *Method 8081B* (Batches 0030762 and 0030826)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample: The LCS/LCSD percent recoveries and RPDs were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample GP04-0-10 was analyzed as the matrix spike. The MS percent recovery exceeded the upper acceptance limit for methoxychlor. Methoxychlor was not detected in the parent sample, no data were qualified.
Laboratory Duplicate: Project sample GP02-0-10 was analyzed for the laboratory duplicate. All OCPs were non-detect; no qualifiers are needed.
Anions, *Method 9056A* (Batch 0030739)
Method Blanks: No analytes were detected above the MRL in the laboratory method blank. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample GP01-0-10 was analyzed as the matrix spike. The MS percent recoveries were within the acceptance limits. No qualifiers are needed.
Laboratory Duplicate: Project sample GP01-0-10 was analyzed for the laboratory duplicate. The duplicate RPDs met acceptance limits, no qualifiers are needed.
Priority Pollutant Metals, Method 200.8 (Batches 0030741 and 0030853)
Method Blanks: No analytes were detected above the MRL in the laboratory method blanks. No qualifiers are needed.
Laboratory Control Sample: The LCS percent recoveries were within the acceptance limits. No qualifiers are needed.
Matrix Spike/Matrix Spike Duplicate: Project sample GP03-0-10 was analyzed as the MS/MSD. The MS percent recovery was less than the lower acceptance limit for barium and greater than the upper acceptance limit for chromium. Both metals were qualified as estimated in the parent sample.
Laboratory Duplicate: Project sample GP03-0-10 was analyzed for the laboratory duplicate. The duplicate RPD exceeded acceptance limits for beryllium. Beryllium was not detected in the parent sample, no data were qualified.

FIELD DUPLICATE REVIEW: One field duplicate sample was collected. Sample GP0XC-0-10 is a field duplicate of sample GP03-0-10. RPDs are calculated between the results of the duplicate samples for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. Constituents that met the criteria are tabulated below, the calculated RPDs met the acceptance limit. No qualifiers were needed.

Sample Name	Constituent	Result	MRL	Unit	RPD
GP03-0-10	Chromium	9.54	1.07	mg/kg	**19%**
GP0XC-0-10	Chromium	7.92	1.14	mg/kg	
GP03-0-10	Lead	1.15	0.214	mg/kg	**11%**
GP0XC-0-10	Lead	1.28	0.227	mg/kg	

DETERMINATION:
The data in this work order have been validated, no results were qualified. All data are usable as reported.

NOTES:

Data validation assigned qualifiers (U, UJ, J, R). The following qualifiers may be assigned to data in this data set based on the results of the data validation procedure (documented on this form). In general data qualifiers are defined as follows:

- U Indicates the analyte was analyzed for, but was not detected above the reported sample quantitation limit (MRL, or MDL if reported). Results assigned this qualifier are considered undetected at the MRL, or MDL if reported.

- UJ Indicates the analyte was not detected above the quantitation limit or MRL (MDL, if reported); however, the MRL (MDL, if reported) is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. Results assigned this qualifier are considered undetected at the estimated MRL (MDL, if reported).

- J Indicates the analyte was positively identified; however, the associated numerical value is the approximate concentration of the analyte in the sample. Results assigned this qualifier as considered and detected at an estimated value. J-qualifiers may be appended with a "+" or "-" to indicate the result has a potential positive or negative bias, respectively.

- R Indicates the presence or absence of the analyte cannot be confirmed due to serious laboratory deficiencies in the ability to analyze the sample and meet quality control criteria. Results assigned this qualifier are rejected and considered unusable.

REFERENCES:

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8.* USEPA. November 2002.

EPA. 2014a. United States Environmental Protection Agency (*USEPA) National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-013-001.* Office of Superfund Remediation and Technology Innovation (*OSRTI)*. August.

EPA. 2014b. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-014-002*. OSRTI. August.

Stantec, 2018. *Master Quality Assurance Project Plan for Oregon Cascades West Coalition of Governments*. Cooperative Agreement No. BF-01J40301. March 26, 2018.