



Phase II Environmental Site Assessment Report

Ko'Kwel Wharf Property
Tremont Street, North Bend, Oregon

Cooperative Agreement Number:
BF-01J86301

September 22, 2022

Prepared for:

Mith-ih-kwuh Economic Development
Corporation
Contact: Ray Doering
3201 Tremont Avenue
North Bend, OR 97459

Prepared by:

Stantec Consulting Services Inc.
601 SW 2nd Avenue Suite 1400
Portland, OR 97204

Project No: 185751418

Phase II Environmental Site Assessment Report – Ko’Kwel Wharf Property – Tremont Street, North Bend, Oregon

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



Report Author:

Paul Janney, RG
Associate Geologist



Quality Reviewer:

Graeme Taylor
Project Manager



Independent Reviewer:

Leonard Farr Jr., RG, LG
Principal Geologist

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has prepared this Phase II Environmental Site Assessment (ESA) on behalf of the Mith-ih-kwuh Economic Development Corporation (MEDC) for the Ko’Kwel Wharf Property located on Tremont Street in North Bend Oregon, Oregon (referred to as “Property”). The Property is being evaluated using a United States Environmental Protection Agency (USEPA) Brownfield Assessment Grant (Cooperative Agreement Number BF-01J86301). A figure depicting the Property location is provided as **Figure 1**.

The Phase II ESA was conducted in conformance with the master Quality Assurance Project Plan (QAPP) prepared for the MEDC Brownfield Project. The USEPA approved the master QAPP for the project on July 8, 2021 (Stantec 2021a). The Phase II ESA described in the sections below was completed in general accordance with the March 1, 2022 *Site-Specific Sampling and Analysis Plan* (SSSAP). USEPA and the Oregon Department of Environmental Quality (DEQ) reviewed and provided comments on the SSSAP on January 24, 2021 and January 27, 2021, respectively. The SSSAP was revised to address USEPA and DEQ comments and was resubmitted to the agencies on March 1, 2022. In email correspondence on March 4, 2022, the USEPA approved of the revised SSSAP and the DEQ acknowledged that the SSSAP had been revised to address their comments.



2.0 PROPERTY DESCRIPTION AND PRIOR ENVIRONMENTAL ASSESSMENT/CLEANUP

2.1 PROPERTY DESCRIPTION

The Property is located on Tremont Street in North Bend, Oregon and is zoned by The City of North Bend as General Commercial (C-G) and Light/Heavy Industrial (M-L and M-H). Coos Bay is located adjacent east to the Property. Surrounding sites are generally industrial, commercial, and residential in use. A Property Location Map is provided as **Figure 1**.

The Property covers an area of 50.5 acres and consists of five tax lots. Each tax lot has been designated as Lot 1, 2, 3, 4, or 5 coinciding with the limited liability company (LLC) by which they are owned: Ko-Kwel Wharf 1 LLC, Ko-Kwel Wharf 2 LLC, Ko-Kwel Wharf 3 LLC, Ko-Kwel Wharf 4 LLC, and Ko-Kwel Wharf 5 LLC, respectively. The Property contains seven existing structures as shown on the table below used to manage the various commercial and industrial enterprises on Lots 2 and 4. Information regarding the current use and area of each tax lot is summarized below.

Lot No.	Tax Lot ID	Acres	Number of Buildings	Most Recent Use
1	25S13W15-104	8.34	0	Leased for timber export
2	25S13W15-105	13.70	5	Leased for timber export
3	25S13W15-106	5.32	0	Leased for timber export
4	25S13W15-107	20.66	2	The Mill Casino recreational vehicle (RV) Park and overflow parking
5	25S13W15-100	2.38	0	The Mill Casino RV Park and primary and overflow parking

2.2 PRIOR ENVIRONMENTAL ASSESSMENT/CLEANUP

Stantec completed an environmental file review for the Property and summarized the information in a file review memorandum (Stantec 2019). The file review memo identified previous environmental records associated with the Property including three DEQ Environmental Cleanup Site Information (ECSI) listings and two Leaking Underground Storage Tank (LUST) sites. The DEQ issued No Further Action (NFA) or Conditional No Further Action (CNFA) determinations for the ECSI and LUST listings which are described in additional detail in the file review memorandum. Previous investigation areas, excavation areas from previous remedial actions, surface caps (engineering controls) currently in place at the Property, locations of former storage tank areas, and relevant historical features are depicted on **Figure 2**.

Based on a review of the Property's history and environmental records constituents of potential concern (COPCs) within Lots 2 and 3 (Study Area) include:

- Total petroleum hydrocarbons (TPH) as gasoline range organics (GRO), diesel range organics (DRO) and oil range organics (ORO);
- Volatile organic compounds (VOCs);
- Semi-volatile organic compounds (SVOCs);
- Pentachlorophenol (PCP);



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- Heavy metals;
- Polychlorinated biphenyls (PCBs); and
- Dioxins and furans.

3.0 CONCEPTUAL SITE MODEL AND DATA USE OBJECTIVES

The Conceptual Site Model (CSM) for the Study Area is based on the land use and beneficial water use determinations described below. Based on this understanding of the CSM, potential receptors and potentially complete exposure pathways, a sampling program was developed using incremental sampling methodology (ISM), composite soil sampling, and grab groundwater sampling from select locations as depicted in **Figures 3 and 4**. A graphic depiction of the screening level risk assessment CSM is included as **Figure 5**.

3.1 LAND USE DETERMINATION

The Property is zoned as General Commercial (C-G) and Light/Heavy Industrial (M-L and M-H) by the City of North Bend. Coos Bay is located adjacent east to the Property. Surrounding sites are generally industrial and commercial with residential development across Highway 101 from the Property. Likely future development will include commercial structures including retail, offices, restaurants, hotels and outdoor parking spaces, and an industrial zone designated for manufacturing and material storage, as specified in a 2020 Master Plan developed in 2020 using an Oregon Department of Land, Conservation and Development (DLCD) grant (Stantec 2021b). Therefore, current and reasonably likely future human Property receptors include occupational, construction, and excavation workers.

Current use of the Study Area is for industrial and commercial enterprise and there is currently no suitable habitat for terrestrial ecological receptors on the Study Area. Further, no habitat restoration is part of the redevelopment plan for the Study Area. Despite the absence of habitat, for informational purposes only, the Study Area risk screening will include comparison to DEQ ecological RBCs.

3.2 BENEFICIAL WATER USE DETERMINATION

There are no public or private water supply wells on the Property. Potable water is supplied to the Property and immediate area by the Coos Bay-North Bend Water Board, and future water supply to the Property is assumed to be the same; therefore, groundwater is not anticipated to be accessed for drinking or other purposes.

3.3 POTENTIALLY COMPLETE EXPOSURE PATHWAYS

Based on the current and anticipated continued future commercial and industrial use of the Property, the following exposure pathways are considered potentially complete or reasonably likely to be complete at the Property in the future:

- Direct contact with soil within 3 feet of the ground surface (occupational workers and construction/excavation workers);
- Direct contact with soil 3-15 feet below ground surface (bgs) (construction and excavation workers);



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- Inhalation of indoor and outdoor vapors from volatile contaminants in soil and groundwater (occupational workers);
- Groundwater in an excavation (construction and excavation workers); and
- Terrestrial ecological receptor direct contact with soil within 3 feet of ground surface.

Analytical data gathered during the Phase II ESA was compared to DEQ Risk-Based Concentrations (RBCs) for these potentially complete exposure pathways to assess potential risk to human health.

3.4 DATA USE OBJECTIVES

Data collected for this project will be used to:

- Support Property redevelopment;
- Assess baseline conditions for potential future Study Area tenants;
- Evaluate potential risk to current and future human receptors;
- Locate and identify potential sources of contamination;
- Formulate remediation strategies and estimate remediation costs;
- Evaluate treatment and disposal options;
- Characterize soil for on-site or off-site treatment; and/or
- Evaluate whether additional assessment or remediation is required.

4.0 PRE-SAMPLING ACTIVITIES

4.1 COMPLIANCE WITH ENDANGERED SPECIES ACT AND NATIONAL HISTORIC PRESERVATION ACT

Stantec completed a review of endangered species that may be present on the Property using the United States Fish and Wildlife Service Information, Planning, and Conservation database. Based on the habitat requirements of the listed species the USFWS database identified as potentially present at the Property vicinity and the lack of critical habitat at the Property, the species identified would not be expected to be present at the Property and no affects to threatened, endangered, or candidate species or critical habitat is expected from assessment activities described herein.

Stantec also consulted with the Oregon State Historic Preservation Office (SHPO) and the Coquille Indian Tribe’s (CIT’s) Tribal Historic Preservation Office (THPO). Based on responses from the SHPO and the CIT THPO, an inadvertent discovery plan was written for the project and a CIT archeological monitor was invited to participate in ESA activities reviewing core samples as they were collected in the field. Stantec documented compliance with the Endangered Species Act and the National Historic Preservation Act in a letter submitted to USEPA on March 3, 2022 and included as an attachment to the SSSAP.

4.2 UTILITY CLEARANCE AND UST SEARCH

Prior to any intrusive work at the Property, Stantec contacted the Utility Notification Center and requested a public underground utility locate for the Property. Additionally, Stantec subcontracted with GPRS to perform a geophysical survey of the property to identify subsurface utilities and to scan for potential underground



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storage tanks (USTs) within an area previously identified in the environmental file review memo. No USTs were identified during the geophysical survey. The geophysical survey report is included in **Appendix A**.

4.3 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.

4.4 SPATIAL DATA COLLECTION

Stantec implemented an ISM sampling strategy generally consistent with the Interstate Technology and Regulatory Council (ITRC) ISM protocols (ITRC 2020) and with DEQ’s Decision Unit Characterization guidance (DEQ 2020b). To implement this sampling strategy, the Property was divided into eight decision units (DUs) as depicted on **Figure 2**. Each DU was established based on the following factors: 1) historical use; 2) proposed future use; and 3) decision unit dimensions.

Prior to arrival at the Property, a total of 50 subsample locations within each DU were selected using a random sampling scheme created using geographic information systems (GIS) software to provide adequate spatial distribution of sampling locations. Upon arrival at the Property, field personnel determined the DU boundaries for the ISM sampling program using a handheld Arrow 100 global positioning system (GPS) unit as shown in **Figure 3 and Figure 4**. Field personnel used the GPS unit to navigate to predetermined locations and used marking paint/flagging to identify the 50 subsample increment locations in each DU. Select subsample locations deviated from predetermined locations due to field conditions identified below. Once all increment locations were marked with marking paint/flagging, the sampling areas were photo documented and final sampling locations were collected with the GPS. Locations of temporary borings for soil and groundwater sample collection (SB-1 through SB-8) were also collected using the GPS unit. Select DU boundaries and incremental or subsample locations were altered due to the following field conditions:

- The eastern boundaries of DU-3, DU-6, DU-7, and DU-8 were adjusted approximately 15 feet west due to the original boundary being mapped over a portion of the wharf structure which could not be drilled;
- Areas of DU-1, DU-2, DU-4, DU-5, DU-6, and DU-7 had standing water and subsamples could not be advanced. The field team adjusted proposed borings in these areas to avoid the surface water but maintain adequate spatial coverage within the DUs. Areas of standing water as observed during field activities are shown on **Figures 3 and 4**; and,
- Select subsample locations were adjusted in the field due to staged equipment and materials on the Property and unmarked buried/overhead utility lines. Inaccessible areas are shown on **Figures 2, 3 and 4**.

5.0 SOIL AND GROUNDWATER SAMPLING METHODS AND OBSERVATIONS

Stantec subcontracted with Steadfast Services Northwest, LLC. of Vancouver, Washington to install and collect groundwater samples from eight temporary groundwater borings and to assist with sampling for the ISM program at the Property. The sampling was conducted April 11 through April 16, 2022. The sampling methodology is described below.



5.1 SUBSURFACE CONDITIONS

Subsurface soils primarily consisted of sand, with up to 70% shells in select locations, and some silts and clays to the maximum explored depth of 15 feet bgs. No VOCs were detected with a photoionization detector (PID) above one part per million (ppm). Signs of visual and olfactory evidence of impacts to soil were noted in DU-1 and DU-2, consisting of dark gray soils with petroleum-like odor. No other notable evidence of impact was observed during the field investigation. Boring logs for the soil borings with temporary monitoring wells are provided in **Appendix B**.

5.2 ISM SOIL SAMPLING

ISM subsamples were collected using a GeoProbe 7720DT direct-push drill rig from the soil interval of 0 to 3 feet bgs in the 50 locations within each DU. For volatile constituents including GRO and VOCs, a one-ounce soil aliquot was collected from each subsample increment in accordance with USEPA Method 5035A and placed into a laboratory-provided glass sample container containing a pre-measured volume of methanol preservative based on the predetermined number of ISM subsamples (50). The specific interval of the aliquot was collected by the field crew collected from the interval which exhibited evidence of impact (if observed) or from the middle of the interval (1.5 feet bgs).

For non-volatile constituents, individual ISM soil subsamples from the entire depth interval were collected into a mixing bowl and manually homogenized. One 2-ounce aliquot of soil was collected from the mixing bowl for each subsample location using a dedicated sampling jar to maintain uniform volume. Subsamples were placed directly into a one-gallon sample jar provided by the contract laboratory.

Duplicate and triplicate samples were collected from DU-1 in separate step out borings located approximately two feet to the east or west from the primary subsample location (duplicate) and two feet to the north or south from the primary subsample location (triplicate). Duplicate and triplicate samples were collected using the same collection procedures and analyzed for quality assurance and quality control (QA/QC) purposes as described in **Section 6.3.2**.

Collected samples were temporarily stored in a cooler containing cubed ice. Following the completion of sampling activities, the soil samples were delivered to Apex Labs in Tigard, Oregon for sample preparation and analysis in accordance with ITRC guidelines. The laboratory representative sampling methodology (RSM) standard operating procedure for preparation and analysis of ISM samples as presented in the SSSAP was followed. Each of the DU ISM soil samples, and the duplicate and triplicate QA/QC samples, were tested for the following:

- GRO by Northwest Method NWTPH-Gx;
- DRO and ORO by Northwest Method NWTPH-Dx;
- VOCs by USEPA Method 8260D;
- SVOCs and PCP by USEPA Method 8270E;
- Total Resource Conservation and Recovery Act (RCRA) Eight Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver) by USEPA Method 6020B;
- Dioxins and furans by USEPA Method 1613B; and
- PCBs by USEPA Method 8082A.



5.3 COMPOSITE SOIL SAMPLING

Composite soil samples were collected from eight borings (SB-1 through SB-8) that were advanced using a GeoProbe 7720DT direct-push drill rig. One composite sample was collected from the interval of 0-3 feet bgs, and one composite sample was collected from 3 feet bgs to first encountered groundwater which was encountered between 3 and 10 feet bgs. Composite samples were collected to evaluate exposure risk to future occupational receptors (0 to 3 feet bgs) and construction/excavation workers (3 feet bgs to first encountered groundwater). For samples to be analyzed for GRO and VOCs a terracore sample plunger was used to collect a sample aliquot from the approximate center of the sample interval to reduce the loss of volatile. Sample aliquots collected for GRO and VOCs were placed directly into a sample vial with a premeasured volume of methanol as a preservative. For other analytes sampled soil from the entire composite interval (e.g. 0-3 feet bgs) was collected into a clean, decontaminated stainless-steel mixing bowl and homogenized prior to placing into laboratory-supplied containers. Boring logs for the eight borings are provided in **Appendix B**.

Composite soil samples were analyzed for the following:

- GRO by Northwest Method NWTPH-Gx;
- DRO and ORO by Northwest Method NWTPH-Dx;
- VOCs by USEPA Method 8260D;
- SVOCs and PCP by USEPA Method 8270E;
- Total RCRA Eight Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver) by USEPA Method 6020B;
- Dioxins and furans by USEPA Method 1613B; and
- PCBs by USEPA Method 8082A.

5.4 GROUNDWATER SAMPLING

Groundwater samples were collected from the eight composite soil sampling borings (SB-1 through SB-8) to evaluate groundwater conditions on the Property from spatially distributed locations. Stantec collected eight discrete grab groundwater samples from the locations shown on **Figure 3 and Figure 4**. First encountered groundwater was identified between 3 feet bgs in SB-01 and 10 feet bgs in SB-05. Groundwater samples were collected by installing a 1-inch diameter polyvinyl chloride (PVC) temporary well with a 1-inch diameter slotted screen. A five foot well screen was placed across the zone of first encountered groundwater to collect a grab groundwater sample. The temporary monitoring wells were purged using a peristaltic pump until the stabilization of field parameters (e.g. temperature, pH, conductivity, dissolved oxygen [DO], and oxidation reduction potential [ORP]) or by purging 4 well volumes from the well. Boring logs for the eight borings are provided in **Appendix B** and groundwater sampling sheets are provided as **Appendix C**.

Groundwater samples were analyzed for the following:

- GRO by Northwest Method NWTPH-Gx;
- DRO and ORO by Northwest Method NWTPH-Dx;
- VOCs by USEPA Method 8260;
- SVOCs and PCP by USEPA Method 8270; and
- Total and Dissolved RCRA Eight Metals by USEPA Method 6020B.



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Groundwater samples were collected in accordance with SOP ES4.03 included in the QAPP (Stantec 2021a) using new, disposable down-hole tubing and a peristaltic pump. Samples collected for dissolved metals testing were field filtered using disposable 0.45-micron filter cartridges.



6.0 LABORATORY TESTING RESULTS

6.1 SOIL TESTING RESULTS

A total of ten ISM soil samples (including eight primary samples, one duplicate sample, and one triplicate sample) and 13 composite soil samples were collected from the Property and submitted for laboratory testing.

Detected soil concentrations were compared to DEQ-published background metals concentrations for the Coast Range in soil (DEQ 2018a), DEQ clean fill screening values (DEQ 2019), and applicable DEQ human health receptor RBCs (DEQ 2018b) and DEQ ecological receptor RBCs (DEQ 2020a) for potentially complete exposure pathways identified in the CSM presented in **Section 3.0**. Soil sampling results were compared to the following potentially applicable human health and ecological RBCs for the Property:

- Ecological RBC – Plants;
- Ecological RBC – Invertebrates;
- Ecological RBC – Non-T&E birds;
- Ecological RBC – Non-T&E mammals;
- Occupational Direct Contact;
- Construction Worker Direct Contact;
- Excavation Worker Direct Contact;
- Occupational Volatilization to Outdoor Air; and
- Occupational Vapor Intrusion into Buildings.

Soil analytical results are described by analyte group in the subsections that follow. A comparison of soil analytical results to potentially applicable DEQ RBCs are summarized in **Tables 1 - 4**. Only detected analytes are included in tables. The Apex Labs analytical reports are provided in **Appendix D**.

6.1.1 Total Petroleum Hydrocarbons – Soil

All 10 collected ISM soil samples and 13 composite soil samples were analyzed for the presence of petroleum hydrocarbons as GRO, DRO and ORO. Only DU-5 had a detection of GRO above the laboratory method detection limit (MDL) at a concentration of 2.94 milligrams per kilogram (mg/kg). This concentration of GRO in soil is well below clean fill criteria, as well as applicable human health and ecological RBCs. The ISM soil sample DU-1 and the corresponding duplicate sample DU-Dup had detections above the MDL for DRO. The maximum detected concentration for DRO was in sample DU-1 at 134 mg/kg which is below the most stringent DEQ RBC for human health receptors. No ecological RBCs have been established for DRO by the DEQ. The maximum detected concentration for ORO was in composite sample SB06 from 0-3 feet bgs at 1,160 mg/kg. No DEQ RBCs have been established for ORO however as a conservative approach, the use of diesel RBCs as a surrogate for ORO indicates exceedances of clean fill screening criteria in sample SB06 from 0-3 feet bgs. This concentration is below applicable DEQ RBCs and clean fill screening values.

Concentrations of TPH-diesel (summed DRO and ORO) exceed ecological RBCs for plants and invertebrates in ISM samples collected from DU-1, DU-2, DU-7, DU-8 and in the composite sample SB06-0-3.

No petroleum hydrocarbon concentrations exceed applicable RBCs for human receptors.



6.1.2 Polychlorinated Biphenyls

All 10 collected ISM soil samples and 13 composite soil samples were analyzed for PCBs. Soil samples DU-1, DU-Dup and DU-Trip (field duplicate and triplicate samples of DU-1), DU-2, and DU-4 had detected concentrations above laboratory MDLs of two PCB Aroclors (Aroclor 1254 and Aroclor 1260). Total PCBs (a summation of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260 using zero for all Aroclors not detected above MDLs) were calculated for a maximum concentration of 0.0721 mg/kg in DU-2. Total PCBs were not detected above clean fill screening values or applicable human health or ecological RBCs. Detected PCB analytical data for soil are summarized in **Table 1**.

6.1.3 Volatile Organic Compounds – Soil

Of the 10 ISM soil samples and 13 composite soil samples analyzed for VOCs only 4-Isopropyltoluene, benzene and naphthalene were detected at concentrations above the MDL. Soil samples collected from boring SB05 from 0-3 feet bgs, DU-5, and DU-6 had detections of naphthalene above clean fill screening values with a maximum concentration of 0.318 mg/kg in SB05 from 0-3. Detected concentrations of VOCs did not exceed potentially applicable human health or ecological RBCs. Detected VOC concentrations in soil are summarized in **Table 1**.

6.1.4 Semi-Volatile Organic Compounds – Soil

Samples from the 10 ISM soil samples and 13 composite soil samples collected on the Property were analyzed for the presence of SVOCs and detected results are summarized in **Table 2**. All 10 ISM samples and 11 composite soil samples had SVOC detections above the MDL for one or more of the following analytes:

- 1-Methylnaphthalene;
- 2-Methylnaphthalene;
- Acenaphthene;
- Acenaphthylene;
- Anthracene;
- Benz(a)anthracene;
- Benza(a)pyrene;
- Benzo(b)fluoranthene;
- Benzo(g,h,i)perylene;
- Benzo(k)fluoranthene;
- Bis(2-ethylhexyl)phthalate;
- Carbazole;
- Chrysene;
- Dibenz(a,h)anthracene;
- Dibenzofuran;
- Fluoranthene;
- Indeno(1,2,3-cd)pyrene;
- Naphthalene;
- Phenanthrene;
- Phenol; and/or



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- Pyrene.

Clean fill screening values were exceeded in composite samples SB04 from 0-3 feet bgs, SB05 from 0.5-3 feet bgs, and SB07 from 3-6 feet bgs, as well as in ISM samples collected from all DUs (DU-01 through DU-08 and the duplicate and triplicate samples collected from DU-1). Ecological RBCs were exceeded for acenaphthene and naphthalene in the sample collected from SB05 from 0.5-3 feet bgs and for acenaphthene in the sample collected from DU-03.

Not all detected SVOCs (and polycyclic aromatic hydrocarbons [PAHs] which are a subset of SVOCs) have published DEQ RBC values. Therefore, a toxic equivalency quotient (TEQ) was calculated for soil samples for PAHs using published DEQ toxic equivalency factors (TEFs). Calculating a TEQ allows for comparison of a normalized concentration to the DEQ RBC for benzo(a)pyrene expressed as benzo(a)pyrene equivalent concentrations. Calculated TEQs for DU-4, DU-5, and DU-7 were 0.15 mg/kg, 0.13 mg/kg, and 0.54 mg/kg respectively, which exceed the clean fill screening values, but not occupational or excavation/construction worker RBCs. Ecological RBCs for calculated TEQs for benzo(a)pyrene equivalents have not been established by the DEQ.

To evaluate ecological receptor exposure to SVOCs, high-molecular weight PAH (HPAH) and low-molecular weight PAH (LPAH) concentrations were calculated for collected ISM and composite samples and compared to DEQ ecological RBCs. HPAH concentrations exceeded the ecological RBC for non-T&E birds in soil samples collected from SB07 from 3-6 feet bgs, DU-2, DU-3, DU-4, DU-5, DU-6, and DU-7. No concentrations of LPAHs exceeded applicable RBCs in any analyzed soil samples.

No SVOC concentrations exceed applicable RBCs for human receptors.

6.1.5 Metals – Soil

The 10 ISM soil samples and 13 composite soil samples were analyzed for the presence of RCRA 8 metals and had detections above MDLs for one or more of the following:

- Arsenic;
- Barium;
- Cadmium;
- Chromium;
- Lead; and
- Mercury.

Cadmium was detected above the background value and the DEQ Ecological RBCs for Non-T&E Birds and Non-T&E Mammals in one soil sample DU-Dup (Duplicate sample of DU-1) at a concentration of 6.25 mg/kg, but cadmium was not detected in the primary or triplicate samples at comparable concentrations. Lead was detected in soil samples SB04 from 0-3 feet bgs and Dup-01 (field duplicate of SB04 from 0-3 feet bgs) at concentrations exceeding the DEQ published clean fill screening value and background concentration for the Coast Range Region (DEQ 2019). The average lead concentration from these two samples collected from the same boring and interval is 183 mg/kg, which exceeds the DEQ Ecological RBC for Plants, Non-T&E Birds, and Non-T&E Mammals. No metal concentrations exceed applicable RBCs for human receptors.



6.1.6 Dioxins and Furans – Soil

The 10 ISM soil samples and 13 composite soil samples were analyzed for the presence of dioxins and furans. Detected concentrations of dioxins and furans in soil samples are summarized in **Table 4**. All samples had detections above the MDL for one or more of the following analytes:

- 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD);
- 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF);
- 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxins (HpCDD);
- 1,2,3,4,6,7,8-Heptachlorodibenzofurans (HpCDF);
- 1,2,3,4,7,8,9-HpCDF;
- 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxins (HxCDD);
- 1,2,3,4,7,8-Hexachlorodibenzofurans (HxCDF);
- 1,2,3,6,7,8-HxCDD;
- 1,2,3,6,7,8-HxCDF;
- 1,2,3,7,8,9-HxCDF;
- 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD);
- 1,2,3,7,8-Pentachlorodibenzofurans (PeCDF);
- 2,3,4,6,7,8-HxCDF;
- 2,3,4,7,8-PeCDF;
- 2,3,7,8-Tetrachlorodibenzo-p-dioxins (TCDD); and/or
- 2,3,7,8-Tetrachlorodibenzo-furan (TCDF).

Exceedances of the Ecological RBCs for Non-T&E Mammals and Non-T&E Birds for one or more of the individual dioxins and furans were detected in every sample except for SB01 from 0.5-3 feet bgs, SB03 from 0.5-3 feet bgs, SB03 from 3-5 feet bgs, SB07 from 0.5-3 feet bgs, and SB07 from 3-6 feet bgs.

A TEQ was calculated for each analyzed soil sample using published DEQ TEFs to normalize total dioxins to a common toxicity for 2,3,7,8-TCDD to allow for risk screening. Calculated TEQs for dioxins and furans were above clean fill screening values in 17 of the 23 analyzed samples. Soil samples in which the TEQ exceeded the Ecological RBC for Non-T&E mammals (0.25 picograms per gram [pg/g]) include 17 of the 23 analyzed samples. The TEQ exceeded the Ecological RBC for Non-T&E Birds (5.2 pg/g) in 12 of 23 analyzed samples.

A comparison of TEQs to human health RBCs indicated that the Occupational Direct Contact RBC (16 pg/g) was exceeded in samples collected from SB08 from 0-3 feet bgs, DU-05, and DU-06. The highest calculated TEQ for dioxins and furans was in sample DU-05 at 30.6 pg/g. No dioxin and furan concentrations exceeded RBCs for construction or excavation worker receptors.

6.2 GROUNDWATER TESTING RESULTS

A total of nine grab groundwater samples (including one field duplicate collected from SB-8) were collected from the Study Area for analysis. Detected groundwater concentrations were compared to the following DEQ RBCs:

- Occupational Direct Contact;
- Occupational Volatilization to Outdoor Air;



Phase II Environmental Site Assessment – Ko’Kwel Wharf Property – Tremont Street, North Bend, Oregon

- Occupational Vapor Intrusion into Buildings; and
- Construction and Excavation Worker Groundwater in Excavation.

Note, grab groundwater sample results were not compared to ecological screening levels as those receptors would only be potentially exposed to surface water on the Property which was not sampled during this ESA.

Groundwater analytical results are described by analyte group in the subsections that follow. A comparison of groundwater testing results to potentially applicable DEQ RBCs is summarized in **Tables 5** and **6**. Only analytes detected in at least one sample are included in the tables. The Apex Lab reports are provided in **Appendix D**.

6.2.1 Total Petroleum Hydrocarbons – Groundwater

All nine grab groundwater samples (including the field duplicate) were analyzed for the presence of petroleum hydrocarbons. Only SB-7 had a detected DRO concentration above the MDL at a concentration of 297 micrograms per liter (ug/L) which is below the most stringent applicable DEQ RBCs. TPH analytical data for groundwater samples are summarized in **Table 5**.

6.2.2 Volatile Organic Compounds – Groundwater

No VOCs were detected above MDLs in any of the nine collected groundwater samples.

6.2.3 Semi-Volatile Organic Compounds – Groundwater

All nine grab groundwater samples were analyzed for SVOCs. Seven of the nine samples had detections above the MDL for one or more of the following analytes:

- 3+4-Methylphenol;
- Acenaphthene;
- Benzanthracene;
- Benzo(a)pyrene;
- Benzo(b)fluoranthene;
- Benzo(g,h,i)perylene;
- Benzo(k)fluoranthene;
- Benzoic acid;
- Chrysene;
- Dimethylphthalate;
- Fluoranthene;
- Fluorene;
- Indeno(1,2,3-cd)pyrene;
- Naphthalene;
- PCP;
- Phenol; and
- Pyrene.

SVOC analytical data are summarized in **Table 5**. None of the detected SVOC concentrations exceeded applicable DEQ RBCs.



6.2.4 Metals – Groundwater

All nine grab groundwater samples were analyzed for the presence of the following total and dissolved metals:

- Arsenic;
- Barium;
- Cadmium;
- Chromium;
- Lead;
- Mercury;
- Selenium; and
- Silver.

Metals in groundwater data are presented in **Table 6**. None of the detected total or dissolved metal concentrations exceeded applicable DEQ RBCs.

6.3 QUALITY ASSURANCE/QUALITY CONTROL

QA/QC procedures outlined in the SSSAP were followed for this project. The following QA/QC samples were collected during this Phase II ESA:

- Nine trip blanks (one per cooler with VOC samples);
- One field duplicate ISM soil sample and one field triplicate ISM soil sample;
- One field duplicate composite soil sample;
- One field duplicate groundwater sample; and
- One equipment blank.

6.3.1 Trip Blanks

Nine trip blank samples (TB-01 through TB-09) were submitted for VOC analysis during the implementation of this Phase II ESA. The samples were analyzed for VOCs by EPA Method 8260C. No VOCs were detected above laboratory MDLs in the nine trip blanks, indicating no evidence of potentially compromised analytical data.

6.3.2 Field Duplicate/Triplicate Soil Samples

Two field duplicates and a field triplicate soil samples were collected during this Phase II ESA. Duplicate (DU-Dup) and triplicate (DU-Trip) ISM soil samples are described in **Section 5.2**. The composite soil field duplicate sample (Dup-01) was analyzed for the same analytes as the primary sample described in **Section 5.3**. Results from field duplicate and triplicate samples are presented by analyte group in appropriate **Sections 6.1.1** through **Section 6.1.6**.



6.3.3 Field Duplicate Groundwater Sample

The groundwater field duplicate sample (Dup-X) was collected from boring SB-08 and analyzed for the same analytes as the primary sample listed in **Section 5.4**. Results from field duplicate samples are presented by analyte group in appropriate **Sections 6.2.1** through **Section 6.2.4**.

6.3.4 Equipment Blank

One equipment blank (EB-01) was collected during the implementation of this Phase II ESA. The equipment blank was collected by pouring deionized water over a decontaminated down hole drill rod and collecting the rinsate water directly into laboratory-supplied sample containers. The equipment blank was submitted to Apex Labs for the same analytical test methods as the groundwater samples identified in **Section 5.3**.

No analytes were detected in the equipment blank sample, indicating that decontamination procedures of sampling equipment used during this Phase II ESA were adequate.



7.0 DATA VALIDATION

The laboratory report received from Apex Labs was validated by Stantec chemists to verify compliance with the project QAPP, and to confirm the usability of the laboratory data. No data was rejected as a result of data validation. All data qualified as a result of the data validation is included in **Tables 1 – 6** and indicated in the data validation reports included in **Appendix E**.



8.0 INVESTIGATION DERIVED WASTE

Investigation derived waste (IDW) generated during Phase II ESA activities includes purge water from groundwater sampling, decontamination water, and soil cuttings. One 55-gallon drum containing purge and decontamination water and four 55-gallon drums of soil were generated during investigation activities. The five drums were labelled and staged on the Property in a designated area of Lot 2. These drums will continue to be used to store IDW generated during additional investigation activities recommended for the Property in Section 10. Once investigation activities are completed IDW drums will be profiled and transported to a permitted disposal facility.



9.0 REGULATED BUILDING MATERIALS SURVEY

Stantec completed a regulated building materials (RBM) survey of the 2-story office building on Lot 2. Other structures on the Property were determined to be wooden outbuildings that did not contain RBMs within accessible areas. The purpose of the RBM survey was to assess readily accessible portions of Property structures for materials that may pose health risks or require abatement or special handling and or disposal prior to or in conjunction with demolition/renovation activities, including asbestos containing material (ACM), lead based paint (LBP), PCB-containing materials, PCB-containing fluorescent light ballasts, mercury-containing fluorescent lamps, mercury thermostats/switches, and mercury-containing batteries. The assessment was conducted by a Stantec USEPA Asbestos Hazard Emergency Response Act (AHERA) accredited building inspector. Building materials samples were collected in order to assess suspect ACM in general accordance with the AHERA sampling guidelines as outlined in 40 Code of Federal Regulations (CFR) Part 763.

Assessment results indicate that no ACMs, LBPs or hazardous materials were identified in any of the collected samples from accessible structures within the Study Area. These results can be used by MEDC to plan for future demolition and/or renovation activities. The complete RBM Survey is included as **Appendix F**.



10.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec completed a Phase II ESA at the Ko’Kwel Wharf Property Study Area which included ISM soil sampling from eight DUs, composite soil sampling from eight borings, grab groundwater sampling from eight temporary well borings and a RBM survey of existing Study Area structures. Assessment activities at the Study Area are ongoing and the ESA activities discussed herein are considered an interim assessment to establish COPCs and areas of the Property that may require additional assessment/cleanup activities.

Soil samples collected from the Study Area indicate that concentrations of DRO, select SVOCs, dioxins and furans, cadmium and lead exceed ecological RBCs in select areas. However, there is no current suitable habitat or a plan to create habitat for ecological receptors within the Study Area. Therefore, these exceedances are presented for informational purposes only and no cleanup or further investigation is warranted to protect ecological receptors within the Study Area. If habitat is to be created on the Property a more robust ecological risk assessment may be necessary.

Concentrations of select SVOCs, cadmium, lead and dioxins in select soil samples exceed DEQ background and/or DEQ clean fill screening criteria in soil. A soil management plan should be developed to manage materials that are disturbed during future construction activities in the Study Area. Dioxins and furans were detected above occupational receptor RBCs in boring SB-08 and in DU05 and DU06 located on Lot 2.

Groundwater samples collected from the Property indicated no exceedances of applicable DEQ human receptor RBCs.

The RBM survey indicated that no regulated building materials were identified in accessible areas of existing Study Area structures where samples were collected.

Indications of unacceptable risk to human health receptors have been identified on Lot 2 from concentrations of dioxins and furans in soil. Additional site assessment activities are recommended for Lot 2 (limited to the areas of DU-5, DU-6 and SB08 from 0-3 feet bgs where dioxins and furans were detected above occupational direct contact RBCs) to further refine the nature, extent, and concentration of dioxins and furans that may affect human health receptors.



11.0 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.



12.0 REFERENCES

ITRC 2020. Interstate Technology Regulatory Council, Incremental Sampling Methodology, October 2020.

DEQ 2001. Site Assessment Section – Strategy Recommendation. January 17, 2011.

DEQ 2018a. Development of Oregon Background Metals Concentrations in Soil, Technical Report. January 25, 2018.

DEQ 2018b. 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.

DEQ 2020a. Conducting Ecological Risk Assessments. September 14, 2020.

DEQ 2020b. Decision Unit Characterization. September 14, 2020.

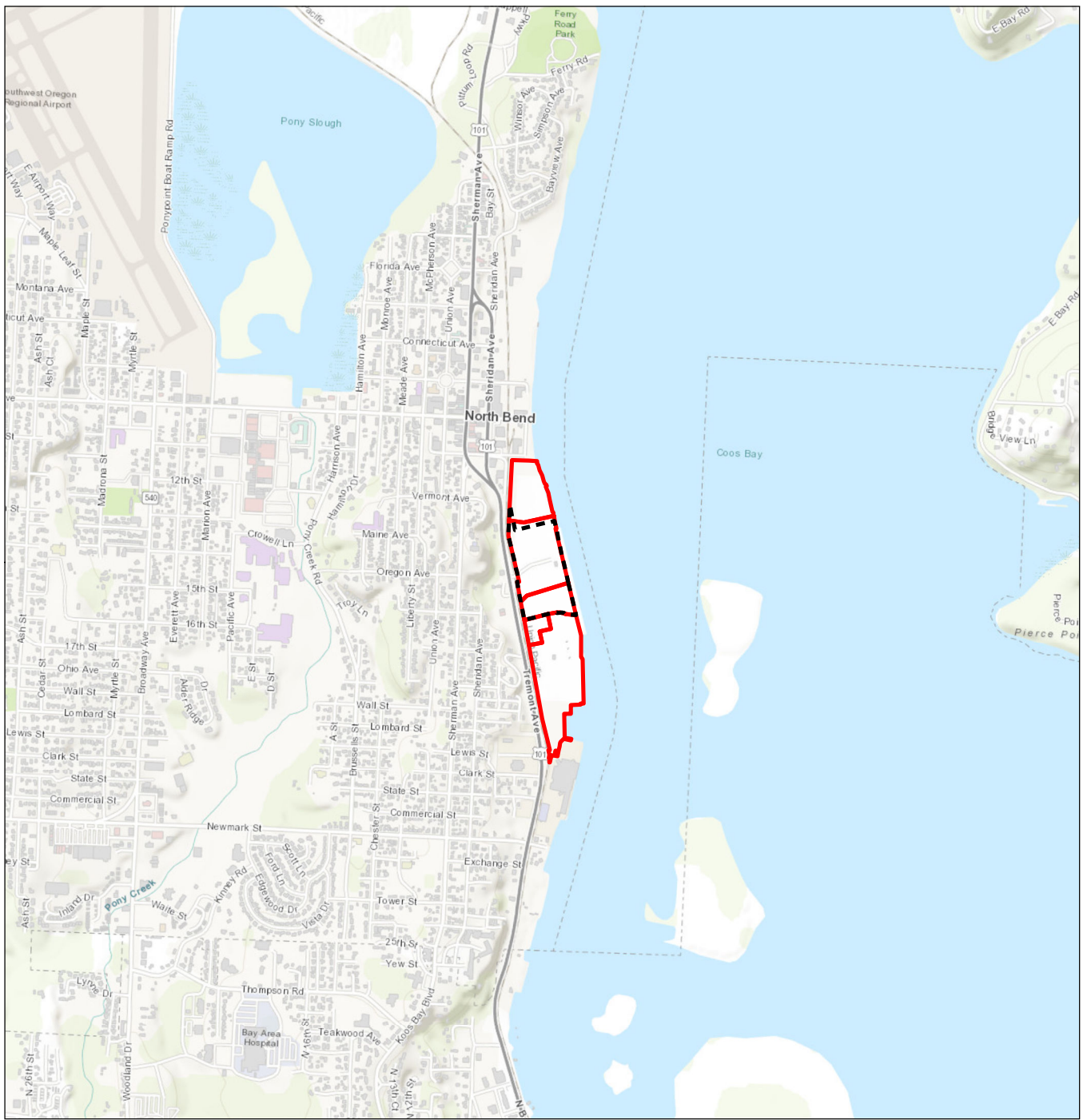
Stantec 2021a. Master Quality Assurance Project Plan (Revision 0) for Implementation of U.S. EPA Brownfields Assessment Grants Mith-ih-kwuh Economic Development Corporation. Cooperative Agreement No. BF-01J86301. May 18, 2021.

Stantec 2021b. Ko’Kwel Wharf Master Plan Summary Document. May 29, 2021.

Stantec 2022. Site-Specific Sampling and Analysis Plan, Revision 1.0. Ko’Kwel Wharf Property, Tremont Street, North Bend, Oregon. Cooperative Agreement No. March 1, 2022.



FIGURES



 Study Area
 Property Boundary

0 500 1,000 Feet
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Project Location: 185751418
 Ko'Kwel Wharf
 North Bend, King County, OR

Client/Project:
 Mith-ih-kwuh Economic Development Corporation
 Ko'Kwel Wharf

Figure No. 1
 Title

Project Location

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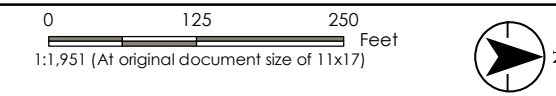
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Figure No. **2**
 Title
Decision Unit Boundaries and Property Map

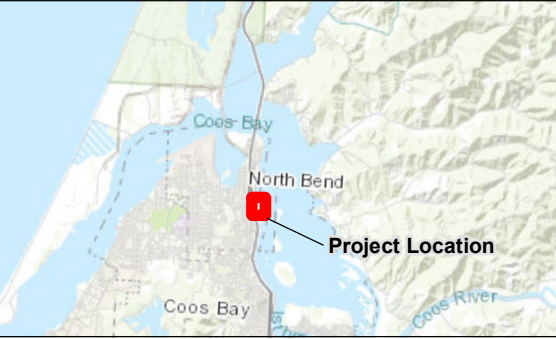
Client/Project
 Mith-ih-kwuh Economic Development Corporation
 Ko'Kwel Wharf

Project Location 185751418
 Ko'Kwel Wharf Prepared by JC on 2022-06-03
 North Bend, OR Technical Review by PJ on 2022-06-03
 Independent Review by GT on 2022-06-03



- Previous Sample Points**
- 1991 EMCON Sample Location
 - 1994 EMCON Sample Location
 - 1994 Olympus Sample Location
 - 1995 EMCON Sample Location
 - 1998 EMCON Sample Location
 - 2003 CH2MHILL Sample Location
 - 2004 CH2MHILL Sample Location
 - 2004 Hart Crowser Sample Location
 - 2005 CH2MHILL Sample Location
 - 2006 Ash Creek Sample Location
 - 2006 Geo-Logic Sample Location
 - 2006 URS Sample Location
 - 2007 Geo-Logic Sample Location
 - 2009 Bridgewater Sample Location
 - 2010 Bridgewater Sample Location

- Study Area
- Decision Unit Boundaries
- Inaccessible Area (Surface Water)
- Inaccessible Area (Storage Materials)
- Inaccessible Area (Unmarked Subsurface Utilities)
- Property Buildings
- ECSI Investigation Areas
- Tax Lot Boundaries
- Former Poned Area
- Remedial Area
- Historical Feature
- Planned Future Industrial Use



All locations are approximate.

Notes

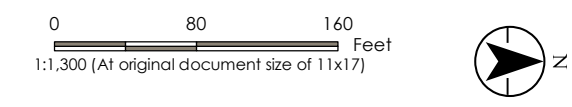
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- Tax lot data: Coos County, ArcGIS Online, May 2019, 06/12/2019

















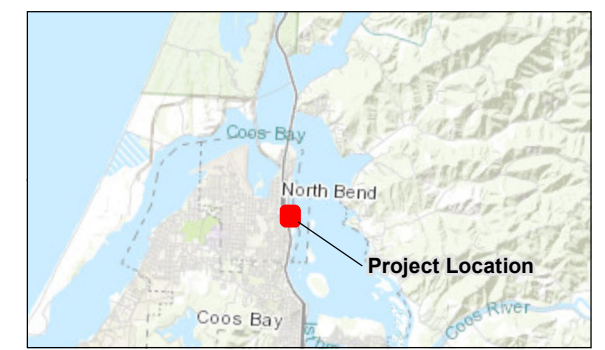
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Figure No. **3**
 Title
Lot Number 2 Layout and Sampling Locations Map
 Client/Project
 Mith-ih-kwuh Economic Development Corporation
 Ko'Kwel Wharf
 Project Location
 Ko'Kwel Wharf
 North Bend, OR
 185751418
 Prepared by JB on 2022-02-25
 Technical Review by SM on 2022-02-25
 Independent Review by GT on 2022-02-25



-  Groundwater Sample Location
-  Sampled Location
-  Study Area
-  Lot No. 2 Decision Unit Boundaries
-  Inaccessible Area (Surface Water)
-  Inaccessible Area (Storage Materials)
-  Inaccessible Area (Unmarked Subsurface Utilities)
-  Property Buildings
-  ECSI Investigation Areas
-  Tax Lot Boundaries
-  Former Poned Area
-  Remedial Area
-  Historical Feature
-  Planned Future Industrial Use



All locations are approximate.

- Notes**
1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Service Layer Credits: ESRI online services, 2019
 3. Tax lot data: Coos County, ArcGIS Online, May 2019, 06/12/2019



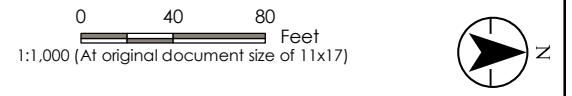
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Figure No. **4**
 Title
Lot Number 3 Layout and Sampling Locations Map
 Client/Project
 Mith-ih-kwuh Economic Development Corporation
 Ko'Kwel Wharf
 Project Location
 Ko'Kwel Wharf
 North Bend, OR
 185751418
 Prepared by JB on 2021-09-20
 Technical Review by SM on 2021-09-20
 Independent Review by GT on 2021-09-20



- Groundwater Sample Location
- Sampled Location
- Study Area
- Decision Unit (Lot No. 3) Boundaries
- ISM Grid
- Inaccessible Area (Surface Water)
- Inaccessible Area (Storage Materials)
- Inaccessible Area (Unmarked Subsurface Utilities)
- ECSI Investigation Areas
- Tax Lot Boundaries
- Remedial Area
- Surface Cap (Engineering Control)
- Historical Feature



All locations are approximate.

- Notes**
1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Service Layer Credits: ESRI online services, 2019
 3. Tax lot data: Coos County, ArcGIS Online, May 2019, 06/12/2019

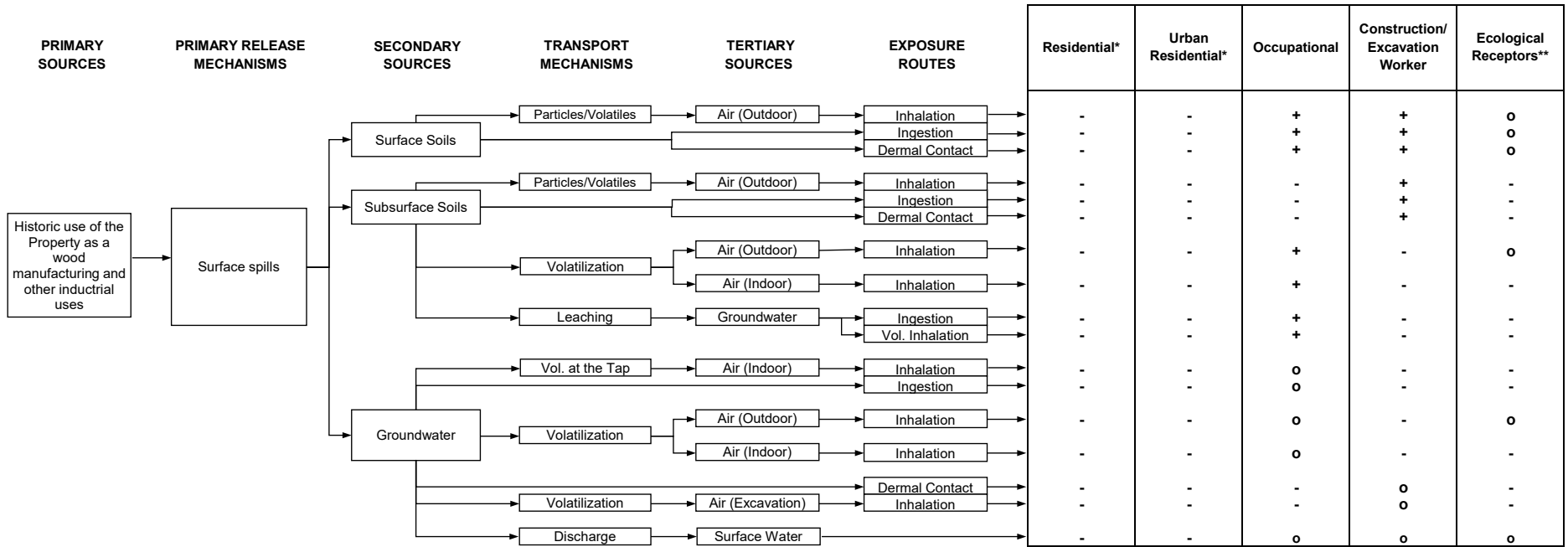


Figure 4-1.0

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**FIGURE 5
Site Conceptual Model
Ko'Kwel Wharf Property**



Notes:

- + This route is a primary source of exposure.
- There is no exposure by this route.
- o Potentially complete exposure pathway
- * Based on current zoning and the 2021 Master Plan, residential development is not currently planned for the Property

TABLES

TABLE 1
Soil Sample Analytical Results - VOCs, TPH, and PCBs
Ko'Kwel Wharf Property
Tremont Street
North Bend, Oregon

Sample Location	Date Sampled	GRO	DRO	ORO	NWTPH-Dx Diesel Range	Aroclor 1254	Aroclor 1260	Total PCBs	4-Isopropyl-toluene	Benzene	Naphthalene
SB01-0.5-3	4/11/2022	3.11 U	11.4 U	22.9 U	22.9 U	0.00579 U	0.00579 U	0.00579 U	0.0311 U	0.00622 U	0.0622 U
SB02-0-3	4/12/2022	4.32 U	12.7 U	25.4 J	25.4 J	0.00641 U	0.00641 U	0.00579 U	0.0432 U	0.00865 U	0.0865 U
SB02-3-7	4/12/2022	4.85 U	14.2 U	61.1	61.1	0.00696 U	0.00696 U	0.00579 U	0.0485 U	0.00969 U	0.0969 U
SB03-0.5-3	4/11/2022	3.21 U	10.7 U	21.5 U	21.5 U	0.00537 U	0.00537 U	0.00579 U	0.0321 U	0.00642 U	0.0642 U
SB03-3-5	4/11/2022	4.44 U	11.2 U	22.4 U	22.4 U	0.00557 U	0.00557 U	0.00579 U	0.0444 U	0.00888 U	0.0888 U
SB04-0-3	4/11/2022	4.21 U	13.9 U	43.8 J	43.8J	0.00682 U	0.00682 U	0.00579 U	0.0421 U	0.00843 U	0.0843 U
SB04-0-3 DUP	4/11/2022	4.46 U	14.2 U	110	110	0.00693 U	0.00693 U	0.00693 U	0.0446 U	0.00892 U	0.0892 U
SB05-0.5-3	4/11/2022	3.68 U	13.0 U	25.9 U	25.9 U	0.00655 U	0.00655 U	0.00579 U	0.0368 U	0.00736 U	0.318
SB05-3-10	4/11/2022	3.66 U	11.7 U	23.5 U	23.5 U	0.00621 U	0.00621 U	0.00579 U	0.0366 U	0.00731 U	0.0731 U
SB06-0-3	4/11/2022	2.44 U	21.4 U	1160	1160	0.00553 U	0.00553 U	0.00579 U	0.0244 U	0.00487 U	0.0487 U
SB07-0.5-3	4/11/2022	2.71 U	10.1 U	20.3 U	20.3 U	0.00494 U	0.00494 U	0.00579 U	0.0271 U	0.00542 U	0.0542 U
SB07-3-6	4/11/2022	4.63 U	14.8 U	125	125	0.00772 U	0.00772 U	0.00772 U	0.0463 U	0.00926 U	0.0926 U
SB08-0-3	4/11/2022	2.98 U	11.7 U	35.0 J	35.0	0.00586 U	0.00586 U	0.00586 U	0.0298 U	0.00595 U	0.0595 U
DU-01	4/14/2022	4.01 U	134	227	361	0.0047 U	0.00643 J	0.00643	0.0401 U	0.00803 U	0.0803 U
DU-01-DUP	4/14/2022	4.62 U	95.7	159	255	0.00482 U	0.00532 J	0.00532	0.0462 U	0.0181 J	0.0924 U
DU-01-TRIP	4/14/2022	4.35 U	9.91 U	155	155	0.00467 U	0.00489 J	0.00489	0.0435 U	0.0166 J	0.0869 U
DU-02	4/12/2022	3.12 U	48.5 U	832	832	0.0602	0.0119	0.0721	0.0312 U	0.00625 U	0.0625 U
DU-03	4/13/2022	3.06 U	9.62 U	190	190	0.00484 U	0.00484 U	0.00484 U	0.0306 U	0.00613 U	0.0613 U
DU-04	4/15/2022	3.30 U	10.1 U	195	195	0.00462 U	0.0272	0.0272	0.033 U	0.0066 U	0.066 U
DU-05	4/14/2022	2.94 J	9.80 U	220	220	0.00468 U	0.00468 U	0.00468 U	0.0265 U	0.0053 U	0.211
DU-06	4/13/2022	3.24 U	9.58 U	131	131	0.00492 U	0.00492 U	0.00492 U	0.103	0.00648 U	0.0919 J
DU-07	4/15/2022	4.45 U	9.33 U	263	263	0.00476 U	0.00476 U	0.00476 U	0.0445 U	0.0089 U	0.089 U
DU-08	4/16/2022	3.29 U	9.32 U	260	260	0.00496 U	0.00496 U	0.00496 U	0.0329 U	0.00659 U	0.0659 U
Clean Fill Screening Values		31	1,100	NA	NA	0.041	0.24	0.23	NA	0.023	0.077
Ecological RBC - Plants		120	NA	NA	260	NA	NA	160	NA	NA	1
Ecological RBC - Invertebrates		120	NA	NA	260	NA	NA	NA	NA	NA	NA
Ecological RBC - Non-T&E Birds		5,000	NA	NA	6,000	NA	NA	0.24	NA	NA	34
Ecological RBC - Non-T&E Mammals		5,000	NA	NA	6,000	NA	NA	0.073	NA	240	27
Occupational Direct Contact RBC		20,000	14,000	NA	NA	NA	NA	0.59	NA	37	23
Construction Worker Direct Contact RBC		9,700	4,600	NA	NA	NA	NA	4.9	NA	380	580
Excavation Worker Direct Contact RBC		>Max	>Max	NA	NA	NA	NA	140	NA	11,000	16,000
Occupational Volatilization to Outdoor Air RBC		69,000	>Max	NA	NA	NA	NA	NA	NA	50	83
Occupational Vapor Intrusion into Buildings RBC		>Max	>Max	NA	NA	NA	NA	NA	NA	2.1	83

Notes:

All results expressed as milligrams per kilogram

VOC and PCB results not included in this table were non-detect for all samples analyzed.

bold = indicates concentrations detected above method detection limits

shaded gray = indicates concentration exceeds clean fill screening value

shaded yellow = indicates concentration exceeds one or more ecological RBCs

J = The result is an estimated value

U = Not detected above the reported value

Clean Fill Screening Values, Oregon DEQ April 2019 revision

Ecological Receptor RBCs = Oregon DEQ Default Tier 1 Risk-Based Concentrations, September 2020

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

DUP = field duplicate

NA = Not Available, no screening value is listed for this analyte.

PCB = polychlorinated biphenyl

T&E = threatened or endangered

TRIP = field triplicate

VOCs = volatile organic compounds

GRO = gasoline range organics

DRO = diesel range organics

ORO = oil range organics

>Max = The constituent RBC for this pathway is calculated as greater than 1,000,000 mg/kg. Therefore, this substance is deemed not to pose risks in this scenario.

TABLE 3
Soil Sample Analytical Results - Metals
Ko'Kwel Wharf Property
Tremont Street
North Bend, Oregon

Sample Location	Date Sampled	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
SB01-0.5-3	4/11/2022	2.62	13.6	0.137 J	10.9	1.72	0.0547 U	0.683 U	0.137 U
SB02-0-3	4/12/2022	7.08	31.4	0.135 U	10.7	4.84	0.0540 U	0.675 U	0.135 U
SB02-3-7	4/12/2022	5.46	123	0.149 U	12.1	6.30	0.0598 U	0.747 U	0.149 U
SB03-0.5-3	4/11/2022	3.60	9.70	0.108 U	8.76	2.18	0.0430 U	0.538 U	0.108 U
SB03-3-5	4/11/2022	3.50	11.1	0.120 U	8.98	3.45	0.0482 U	0.602 U	0.120 U
SB04-0-3	4/11/2022	4.91	34.6	0.140 U	14.2	81.8	0.0559 U	0.699 U	0.140 U
SB04-0-3 DUP	4/11/2022	5.49	38.6	0.147 U	17.6	203	0.0685 J	0.735 U	0.147 U
SB05-0.5-3	4/11/2022	3.85	23.0	0.133 U	16.7	6.82	0.0534 U	0.667 U	0.133 U
SB05-3-10	4/11/2022	3.16	17.8	0.127 U	12.4	3.19	0.0508 U	0.635 U	0.127 U
SB06-0-3	4/11/2022	3.64	21.4	0.189 J	21.7	2.79	0.0453 U	0.567 U	0.113 U
SB07-0.5-3	4/11/2022	1.22	68.6	0.110 U	37.4	1.16	0.0440 U	0.551 U	0.110 U
SB07-3-6	4/11/2022	5.18	25.2	0.211 J	23.6	9.00	0.0660 U	0.826 U	0.165 U
SB08-0-3	4/11/2022	2.16	36.7	0.132 J	50.1	7.40	0.0515 U	0.644 U	0.129 U
DU-01	4/14/2022	6.61	44.9	0.142 J	27.3	13.7	0.0755 J	0.507 U	0.101 U
DU-01-DUP	4/14/2022	4.78	49.3	6.25	30.9	16.8	0.0895	0.555 U	0.111 U
DU-01-TRIP	4/14/2022	4.82	47.0	0.268	27.7	13.6	0.0601 J	0.486 U	0.0973 U
DU-02	4/12/2022	4.71	58.7	0.149 J	31.2	27.4	0.0778 J	0.511 U	0.102 U
DU-03	4/13/2022	4.15	32.8	0.0984 J	16.7	7.41	0.0449 J	0.492 U	0.0983 U
DU-04	4/15/2022	4.40	74.3	0.197 J	21.9	18.7	0.0464 J	0.526 U	0.105 U
DU-05	4/14/2022	7.63	59.2	0.144 J	24.9	23.5	0.0773 J	0.542 U	0.108 U
DU-06	4/13/2022	6.61	38.0	0.117 J	18.6	19.7	0.0510 J	0.495 U	0.0990 U
DU-07	4/15/2022	4.57	40.8	0.0984 U	21.7	13.5	0.0407 J	0.492 U	0.0984 U
DU-08	4/16/2022	3.19	46.1	0.102 U	23.2	5.82	0.0407 U	0.508 U	0.102 U
Clean Fill/Background Screening Values		12	840	0.54	240	34	0.11	1.5	0.41
Ecological RBC - Plants		18	110	32	NA	120	34	0.52	560
Ecological RBC - Invertebrates		6.8	330	140	NA	1,700	0.05	4.1	NA
Ecological RBC - Non-T&E Birds		32	1,200	1.6	73	23	0.13	1.4	26
Ecological RBC - Non-T&E Mammals		31	8,700	4	1,600	170	17	1	140
Occupational Direct Contact RBC		1.9	220,000	1,100	NA	800	350	NA	5,800
Construction Worker Direct Contact RBC		15	69,000	350	530,000	800	110	NA	1,800
Excavation Worker Direct Contact RBC		420	NA	9,700	NA	800	2,900	NA	49,000

Notes:

All results expressed as milligrams per kilogram

bold = indicates concentrations detected above method detection limits

shaded gray = indicates concentration exceeds background screening value

shaded yellow = indicates concentration exceeds background and one or more ecological RBCs

DUP = field duplicate

NA = Not Available, no screening value is listed for this analyte.

T&E = threatened or endangered

TRIP = field triplicate

J = The result is an estimated value

U = Not detected above the reported value

Clean Fill/Background Screening Values (Coast Range), Oregon DEQ April 2019 revision

Ecological Receptor RBCs = Oregon DEQ Default Tier 1 Risk-Based Concentrations, September 2020

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 4
Soil Sample Analytical Results - Dioxins and Furans
Ko'Kwel Wharf Property
Tremont Street
North Bend, Oregon

Sample ID	Date Sampled	1,2,3,4,6,7,8,9-OCDD	1,2,3,4,6,7,8,9-OCDF	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDF	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDF	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF	2,3,7,8-TCDD	2,3,7,8-TCDF	2,3,7,8-TCDD TEQ, ND=0
SB01-0.5-3	4/11/2022	9.75 U	0.597 J	0.808 J	4.88 U	0.404 U	0.209 U	0.339 J	0.205 U	0.187 U	0.211 U	0.279 U	0.18 U	0.155 U	0.18 U	0.148 U	0.114 U	0.132 U	0.042
SB02-0-3	4/12/2022	105	7.73 J	14.9	3.37 J+	0.287 U	0.352 U	0.422 J	0.791 J	0.349 J	0.539 J	0.312 U	0.281 J	0.257 J	0.239 J	0.267 J	0.195 U	0.305 J	0.85
SB02-3-7	4/12/2022	109	9.86 J	19	5.80	0.79 U	0.437 U	0.549 J	1.39 J	0.435 J	0.439 U	0.602 U	0.374 U	0.453 J	0.6 J	0.595 J	0.247 U	0.491 J	0.82
SB03-0.5-3	4/11/2022	9.44 U	0.948 J	1.37 J	0.234 U	0.368 U	0.446 U	0.3 J	0.451 U	0.173 U	0.455 U	0.27 U	0.285 U	0.219 U	0.175 U	0.208 U	0.158 U	0.153 U	0.044
SB03-3-5	4/11/2022	8.53 J	0.513 U	1.91 J	5.10 U	0.243 U	0.374 U	0.132 U	0.365 U	0.133 U	0.374 U	0.214 U	0.241 U	0.208 U	0.167 J	0.197 U	0.194 U	0.149 U	0.038
SB04-0-3	4/11/2022	64.6 J	6.93 J	14.8 J	13.4	0.745 U	0.877 U	6.00	2.17 J	2.22 J	1.8 J	1.35 U	2.49 J	3.02 J	1.41 J	3.17 J	0.583 J	7.74	6.6
SB04-0-3 DUP	4/11/2022	155 J	17.3	37.4	30.3	1.51 U	2.47 J	12.0	4.04 J	3.89 J	3.3 J	1.77 U	4.55 J	30.1	2.56 J	4.43 J	0.85 J	2.48 U	11.2
SB05-0.5-3	4/11/2022	670	45	89.3	9.08	0.967 U	1.08 U	0.701 J	1.47 J	0.583 U	1.08 U	0.941 U	0.527 U	0.502 U	0.661 J	0.478 J	0.217 U	0.393 J	1.7
SB05-3-10	4/11/2022	9.57 U	0.735 J	0.555 J	4.78 U	0.287 U	0.297 U	0.785 J	0.279 U	0.291 J	0.291 U	0.335 U	0.268 U	0.174 U	0.22 U	0.16 U	0.15 U	0.188 U	0.11
SB06-0-3	4/11/2022	205	9.2 J	28.7	5.91	1.26 U	0.78 U	0.76 J	1.87 J	0.472 U	1.54 J	0.847 U	0.671 U	0.442 J	0.596 U	0.444 J	0.278 U	0.302 U	0.97
SB07-0.5-3	4/11/2022	72.3	1.78 J	6.1	4.70 U	0.808 U	0.644 U	0.235 U	0.605 U	0.227 U	0.633 U	0.396 U	0.488 U	0.314 U	0.246 U	0.308 U	0.25 U	0.246 U	0.083
SB07-3-6	4/11/2022	38.1 J+	5.31 J	6.56	4.98 U	0.584 U	0.503 U	0.379 U	0.463 U	0.375 U	0.487 U	0.653 U	0.686 U	0.304 U	0.385 U	0.552 J	0.235 U	0.986 U	0.24
SB08-0-3	4/11/2022	5,350 J	211	674	104	5.67	12.6	5.08 J	30.3	4.72 J	12.6	2.24 J	4.99 J	2.37 J	6.64	4.17 J	0.366 U	2.06	23.4
DU-01	4/14/2022	826 J	54.2 J	108 J	25.2 J	1.5 J	3.45 J	4.37 J	8.26	2.19 J	4.22 J	1.2 U	2.21 J	2.52 J	1.69 J	2.63 J	0.674 J	2.63	8.0
DU-01-DUP	4/14/2022	2,680 J	165 J	386 J	60.1 J	3.11 J	9.98	5.03	16.1	3.11 J	6.28 J	0.92 U	3.03 J	2.87 J	2.6 J	2.76 J	0.781 J	3.00	14.7
DU-01-TRIP	4/14/2022	2,460 J	193 J	350 J	50.9 J	2.55 J	3.26 J	5.86	9.06	2.46 J	4.73 J	1.49 U	2.57 J	3.39 J	1.98 J	2.93 J	0.72 J	3.07	12.1
DU-02	4/12/2022	1,420 J	138	156	52.2	3.24 J	3.01 J	7.93	8.56	3.87 J	3.49 J	1.04 J	2.97 J	3.78 J	2.76 J	3.28 J	0.571 J	2.41	10.5
DU-03	4/13/2022	2,570	229	361	90.6	4.43 J	4.38 J	3.98 J	15 J	2.78 J	5.65	1.03 U	1.69 J	2.28 J	3.32 J	2.3 J	0.387 J	1.96	11.9
DU-04	4/15/2022	3,050	231	364	111	3.77 J	3.27 J	16.2	10.6	5.69	6.17	1.24 J	3.32 J	4.87	2.96 J	3.07 J	0.708 J	3.29	15.8
DU-05	4/14/2022	8,000 J	542	1,120	133	7.25	14.8	5.22	43.1	4.9 J	12.3	2.01 J	3.68 J	2.72 J	6.25	5.11	0.905 J	3.48	30.6
DU-06	4/13/2022	5,660 J	577	593	129	7.08	13.3	4.96 U	21.1	2.86 J	8.63	1.54 U	3.78 J	4.96 U	3.94 J	2.27 J	0.907 J	1.89 J	19.7
DU-07	4/15/2022	1,350 J	65.8	154	23.5	1.35 U	0.943 U	4.99 U	6.46	1.25 J	1.46 J	0.911 U	0.827 J	4.99 U	1.61 J	1.3 J	0.354 U	0.999 U	4.5
DU-08	4/16/2022	1,950 J	77.1	221	34.6	1.45 J	12.3	4.99 U	10.6	1.39 J	3.88 J	1.24 U	3.39 J	4.99 U	1.86 J	1.39 J	1.68	0.998 U	11.7
Clean Fill Screening Values		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.29
Ecological RBC - Plants		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ecological RBC - Invertebrates		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,000,000	NA	5,000,000
Ecological RBC - Non-T&E Birds		19,000	14,000	1,500	230	230	51	23	190	23	19	30	5.9	41	23	4.1	5.2	6.4	5.2
Ecological RBC - Non-T&E Mammals		300	220	7	11	11	1.2	1.1	0.89	1.1	0.89	1.4	0.28	6.5	1.1	0.65	0.25	3	0.25
Occupational Direct Contact RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16
Construction Worker Direct Contact RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	170
Excavation Worker Direct Contact RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,800
Occupational Volatilization to Outdoor Air RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130,000
Occupational Vapor Intrusion Into Buildings RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	130,000

Notes:
All results expressed as picograms per gram
bold = indicates concentrations detected above method detection limits
shaded yellow = indicates concentration exceeds one or more ecological RBCs
shaded orange = indicates concentration exceeds one or more human health RBCs

DUP = field duplicate
TRIP = field triplicate
NA = Not Available, no screening value is listed for this analyte
T&E = threatened or endangered
TEQ = Toxic Equivalence Quotient

Clean Fill Screening Values, Oregon DEQ April 2019 revision
Ecological Receptor RBCs = Oregon DEQ Default Tier 1 Risk-Based Concentrations, September 2020
RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

J = The result is an estimated value; "+" indicates a potential high bias
U = Not detected above the reported value

TABLE 5
Groundwater Sample Analytical Results - Diesel and Semivolatile Organic Compounds
Ko'Kwei Wharf Property
Tremont Street
North Bend, Oregon

Sample Location	Date Sampled	Diesel	3+4-Methylphenol	Acenaphthene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Chrysene	Dimethyl phthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)-pyrene	Naphthalene	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	Benzo(a)pyrene TEQ
SB-1	4/12/2022	93.5 U	0.234	1.98	0.182	0.884	0.603	1.28	0.207	10.5 U	0.278	0.842 U	0.738	0.0448 J	0.836	0.136 J	0.421 U	0.183	0.842 U	0.938	1.1
SB-2	4/13/2022	106 U	0.0250 U	0.0100 U	0.0100 U	0.0150 U	0.0150 U	0.0100 U	0.0150 U	2.50 U	0.0100 U	2.54	0.0100 U	0.0100 U	0.0100 U	0.0200 U	0.100 U	0.0120 J	0.200 U	0.0100 U	0
SB-3	4/12/2022	108 U	0.0294 U	0.0118 U	0.0118 U	0.0176 J	0.0176 U	0.0118 U	0.0176 U	2.94 U	0.0118 U	0.235 U	0.0118 U	0.0118 U	0.0118 U	0.0235 U	0.118 U	0.0118 U	0.235 U	0.0118 U	0.018
SB-4	4/12/2022	109 U	0.0515 J	0.226	0.0106 U	0.0176 J	0.0160 U	0.0106 U	0.0160 U	5.64	0.0106 U	0.213 U	0.0106 U	0.0173 J	0.0106 U	0.0213 U	0.177 J	0.0181 J	0.672	0.0106 U	0.018
SB-5	4/12/2022	110 U	0.0269 U	0.0108 U	0.0108 U	0.0161 U	0.0161 U	0.0108 U	0.0161 U	2.69 U	0.0108 U	0.215 U	0.0108 U	0.0108 U	0.0108 U	0.0331 J	0.108 U	0.0108 U	0.215 U	0.0108 U	0
SB-6	4/12/2022	120 U	0.0255 U	0.0102 U	0.0102 U	0.0153 U	0.0153 U	0.0102 U	0.0153 U	2.55 U	0.0102 U	0.204 U	0.0102 U	0.0102 U	0.0102 U	0.0204 U	0.102 U	0.0102 U	0.204 U	0.0102 U	0
SB-7	4/12/2022	297	0.147 U	0.0588 U	0.0588 U	0.0882 U	0.0882 U	0.0588 U	0.0882 U	14.7 U	0.0588 U	1.18 U	0.0588 U	0.0588 U	0.0588 U	0.118 U	0.588 U	0.0588 U	1.18 U	0.0588 U	0
SB-8	4/13/2022	101 U	0.0391 J	0.0546	0.00990 U	0.0167 J	0.0149 U	0.00990 U	0.0149 U	2.48 U	0.00990 U	0.198 U	0.0121 J	0.00990 U	0.00990 U	0.0543	0.0990 U	0.0206	0.198 U	0.0156 J	0.017
SB-8 DUP	4/13/2022	99.0 U	0.0357 J	0.0533	0.0110 U	0.0165 U	0.0165 U	0.0110 U	0.0165 U	2.75 U	0.0110 U	0.220 U	0.0110 U	0.0110 U	0.0110 U	0.0499	0.110 U	0.0199 J	0.220 U	0.0113 J	0
Occupational Volatilization to Outdoor Air RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16,000	NA	NA	NA	NA	NA
Occupational Vapor Intrusion into Buildings RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11,000	NA	NA	NA	NA	NA
Construction & Excavation Worker GW in Excavation RBC		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	500	53	NA	NA	NA	NA

Notes:

All results expressed as micrograms per liter

SVOC results not included in this table were non-detect for all samples analyzed.

bold = indicates concentrations detected above method detection limits

shaded yellow = indicates concentration exceeds one or more potentially applicable RBCs

SVOCs = semivolatile organic compounds

TEQ = Toxic Equivalence Quotient

J = The result is an estimated value

U = Not detected above the reported value

Clean Fill Screening Values, Oregon DEQ April 2019 revision

Ecological Receptor RBCs = Oregon DEQ Default Tier 1 Risk-Based Concentrations, September 2020

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

TABLE 6
Groundwater Sample Analytical Results - Metals
Ko'Kwel Wharf Property
Tremont Street
North Bend, Oregon

Sample Location	Date Sampled	Arsenic		Barium		Cadmium		Chromium		Lead		Mercury		Selenium		Silver	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
SB-1	4/12/2022	8.62	6.47	12.3	11.5	0.100 U	0.100 U	3.00	1.00 U	0.597	0.100 U	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-2	4/13/2022	0.500 U	0.500 U	3.59	3.34	0.100 U	0.100 U	1.00 U	1.00 U	0.845	0.100 U	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-3	4/12/2022	1.55 U	1.22	12.6	11.4	0.100 U	0.100 U	1.00 U	1.00 U	0.114 J	0.131 J	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-4	4/12/2022	1.74 U	1.30	67.5	62.7	0.100 U	0.100 U	1.59 J	1.00 U	0.482	0.100 U	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-5	4/12/2022	1.90 U	0.500 U	34.5	12.8	0.100 U	0.100 U	14.4	1.00 U	10.1	0.182 J	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-6	4/12/2022	1.00 U	0.655 J	12.9	9.06	0.100 U	0.100 U	1.15 J	1.00 U	0.676	0.271	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-7	4/12/2022	39.9	1.73	1160	220	1.09	0.100 U	279	1.00 U	152	1.02	0.517	0.0400 U	4.85	0.500 U	0.367	0.100 U
SB-8	4/13/2022	1.21 U	0.787 J	82.5	92.2	0.100 U	0.100 U	2.25	1.00 U	1.82	0.331	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
SB-8 DUP	4/13/2022	1.23	0.828 J	85.1	76.1	0.100 U	0.100 U	2.46	1.00 U	1.14	0.243	0.0400 U	0.0400 U	0.500 U	0.500 U	0.100 U	0.100 U
Construction & Excavation Worker GW in Excavation RBC		6,300	6,300	NA	NA	130,000	130,000	NA	NA	NA	NA	NA	NA	NA	NA	1,100,000	1,100,000

Notes:

All results expressed as micrograms per liter

bold = indicates concentrations detected above method detection limits

shaded yellow = indicates concentration exceeds background and one or more potentially applicable RBCs

NA = Not Available, no screening value is listed for this analyte.

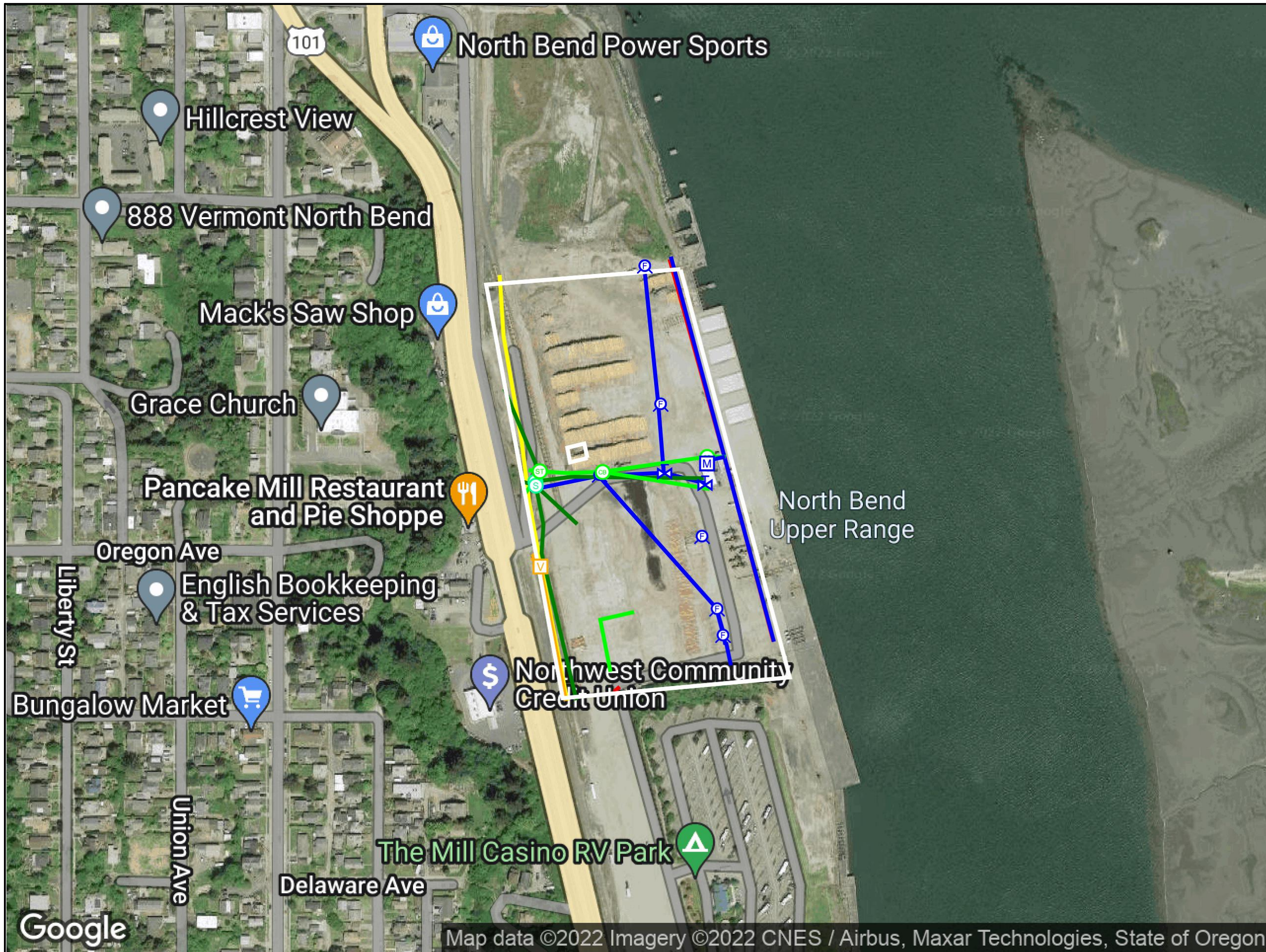
J = The result is an estimated value

U = Not detected above the reported value

RBCs = Oregon DEQ Risk-Based Concentrations, May 2018 revision

Appendix A GEOPHYSICAL SURVEY REPORT





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LEGEND

- ELECTRICAL
- WATER
- FUEL/GAS/OIL
- SANITARY
- STORM
- TELECOMM
- SCAN LIMIT



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FOR INFORMATION ONLY

GPRS FINDINGS MAP	
PREPARED FOR: STANTEC	
LOCATION: FORMER LUMBER YARD 3050 TREMONT AVE NORTH BEND, OR	
PROJECT MANAGER: BRADLEY OBERKLAUS BRADLEY.OBERKLAUS@GPRSINC.COM	
DATE	2022 JUL 13
DRAWING NO.	1 REV. 0



AIR_COMPRESSOR	ELEC_BOX	FUEL_AST	MISC_CONTINUOUS	STEAM_CONTINUOUS	TREE_CONIFEROUS
AIR_CONTINUOUS	ELEC_CABINET	FUEL_CONTINUOUS	MISC_DEPTH	STEAM_EOI	TREE_DECIDUOUS
AIR_EOI	ELEC_CONTINUOUS	FUEL_EOI	MISC_EOI	STEAM_MANHOLE	UNKN_CONTINUOUS
AIR_MANHOLE	ELEC_EOI	FUEL_MANHOLE	MISC_MANHOLE	STEAM_MISC	UNKN_EOI
AIR_MISC	ELEC_EQUIPMENT	FUEL_MISC	MISC_POINT	STEAM_VALVE	UNKN_MANHOLE
AIR_PUMP	ELEC_LANDSCAPELIGHT	FUEL_PUMP	MISC_VALVE	STRM_CATCHBASINROUND	UNKN_MISC
AIR_RISER	ELEC_MANHOLE	FUEL_RISER	OIL_CONTINUOUS	STRM_CATCHBASINSQUARE	UNKN_VALVE
CHEM_AST	ELEC_METER	FUEL_UST	OIL_EOI	STRM_CLEANOUT	WTR_BACKFLOWPREVENTOR
CHEM_CONTINUOUS	ELEC_MISC	FUEL_VALVE	OIL_MANHOLE	STRM_CONTINUOUS	WTR_CONTINUOUS
CHEM_EOI	ELEC_PANEL	FUEL_VAULT	OIL_MISC	STRM_CURBINLET	WTR_EOI
CHEM_MANHOLE	ELEC_POWERPOLE	FUEL_VENT	OIL_PUMP	STRM_ENDPIPE	WTR_HYDRANT
CHEM_MISC	ELEC_SIGN	GAS_AST	OIL_RISER	STRM_EOI	WTR_MANHOLE
CHEM_PUMP	ELEC_SITELIGHT	GAS_CONTINUOUS	OIL_TANK	STRM_LIFTSTATION	WTR_METER
CHEM_TANK	ELEC_TRANSFORMER	GAS_EOI	OIL_UST	STRM_MANHOLE	WTR_MISC
CHEM_VALVE	ELEC_UTILITYPOLE	GAS_MANHOLE	OIL_VALVE	STRM_MISC	WTR_POSTINDICATORVALVE
COMM_BOX	ELEC_VAULT	GAS_METER	OIL_VAULT	STRM_ROOFDRAIN	WTR_RISER
COMM_CAMERA	FIRE_BACKFLOWPREVENTOR	GAS_MISC	OIL_VENT	STRM_TRENCHDRAIN	WTR_VALVE
COMM_CONTINUOUS	FIRE_CONTINUOUS	GAS_PUMP	SAN_CLEANOUT	STRM_UST	WTR_WELLHEAD
COMM_EOI	FIRE_EOI	GAS_RISER	SAN_CONTINUOUS	STRM_VAULT	BUILDING CORNER
COMM_MANHOLE	FIRE_HYDRANT	GAS_UST	SAN_EOI	STRM_VENT	FLAGPOLE
COMM_MISC	FIRE_MANHOLE	GAS_VALVE	SAN_GREASETRAP	STRM_YARDBASIN	GRAVE
COMM_PEDESTAL	FIRE_METER	GAS_VAULT	SAN_INVERT	TRAF_BOX	GRAVE
COMM_POLE	FIRE_MISC	GAS_VENT	SAN_LIFTSTATION	TRAF_CABINET	HEADSTONE NO GRAVE
COMM_VAULT	FIRE_POSTINDICATORVALVE	IRR_BACKFLOWPREVENTOR	SAN_MANHOLE	TRAF_CONTINUOUS	MAILBOX
	FIRE_RISER	IRR_CONTINUOUS	SAN_MARKER	TRAF_EOI	POST
	FIRE_VALVE	IRR_CONTROL VALVE	SAN_MISC	TRAF_MANHOLE	SATELLITE
		IRR_EOI	SAN_SEPTICTANK	TRAF_MISC	SIGN
		IRR_MISC	SAN_VAULT	TRAF_PARKINGMETER	SOIL BORING MARKER
		IRR_RISER	SAN_VENT	TRAF_SIGN	SOIL BORING MARKER
		IRR_SPRINKLER		TRAF_SIGNAL	
				TRAF_STREETLIGHT	

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	FUEL/GAS/OIL
	SANITARY
	STORM
	TELECOMM
	SCAN LIMIT

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GPRS FINDINGS MAP

PREPARED FOR: STANTEC

LOCATION: FORMER LUMBER YARD
3050 TREMONT AVE
NORTH BEND, OR

PROJECT MANAGER: BRADLEY OBERKLAUS
BRADLEY.OBERKLAUS@GPRSINC.COM

DATE	2022 JUL 13		
DRAWING NO.	2	REV.	0

SUBMITTAL LETTER

To: STANTEC

JULY 13, 2022

Re: GPRS FINDINGS REPORT

FORMER LUMBER YARD, 3050 TREMONT AVE, NORTH BEND, OR

Thank you for the opportunity to serve you on your project. Please refer to the job summary report that is sent separately from this document for additional notes related to our site visit. Included with this submittal email, please find the document list below which includes a link to download your files from our database:

Document List:

COPIES	DATE	DESCRIPTION	LINK
1	07/13/2022	PDF Aerial Overlay - Open with PDF reader	PDF
1	07/13/2022	PDF Aerial Overlay with Icons - Open with PDF reader	PDF
1	07/12/2022	KMZ file - Open with Google Earth	KMZ
1	07/13/2022	SHP files - For use in CAD or GIS software	SHP

As an additional service, we also provide CAD drawings and can even use your existing drawings as background linework for our files. If you have already ordered CAD as a deliverable option, the CAD will be delivered as a separate submittal, typically in the next few days. If you would like CAD as a deliverable and have not yet requested it, please reach out to us to get a quote to have the service added to your job by replying to this email or giving me a call.

As a reminder, we do not provide surveying or engineering services at GPRS. The data provided is at mapping quality for general reference only. The GNSS/GPS locators that we utilize are certified for sub-meter accuracy and locations were attained by our project managers that are not surveying professionals. Some of the documents we provide with our deliverable have embedded location and elevation data that should be used at your own risk due to accuracy limitations listed above. If survey and design level accuracy is needed, you will need to hire a licensed surveyor in that state to pick up field markings to provide you with the desired data separate from GPRS. This letter is subject to our Terms and Conditions which are listed and incorporated by reference here: <https://gp-radar.com/terms-conditions>.

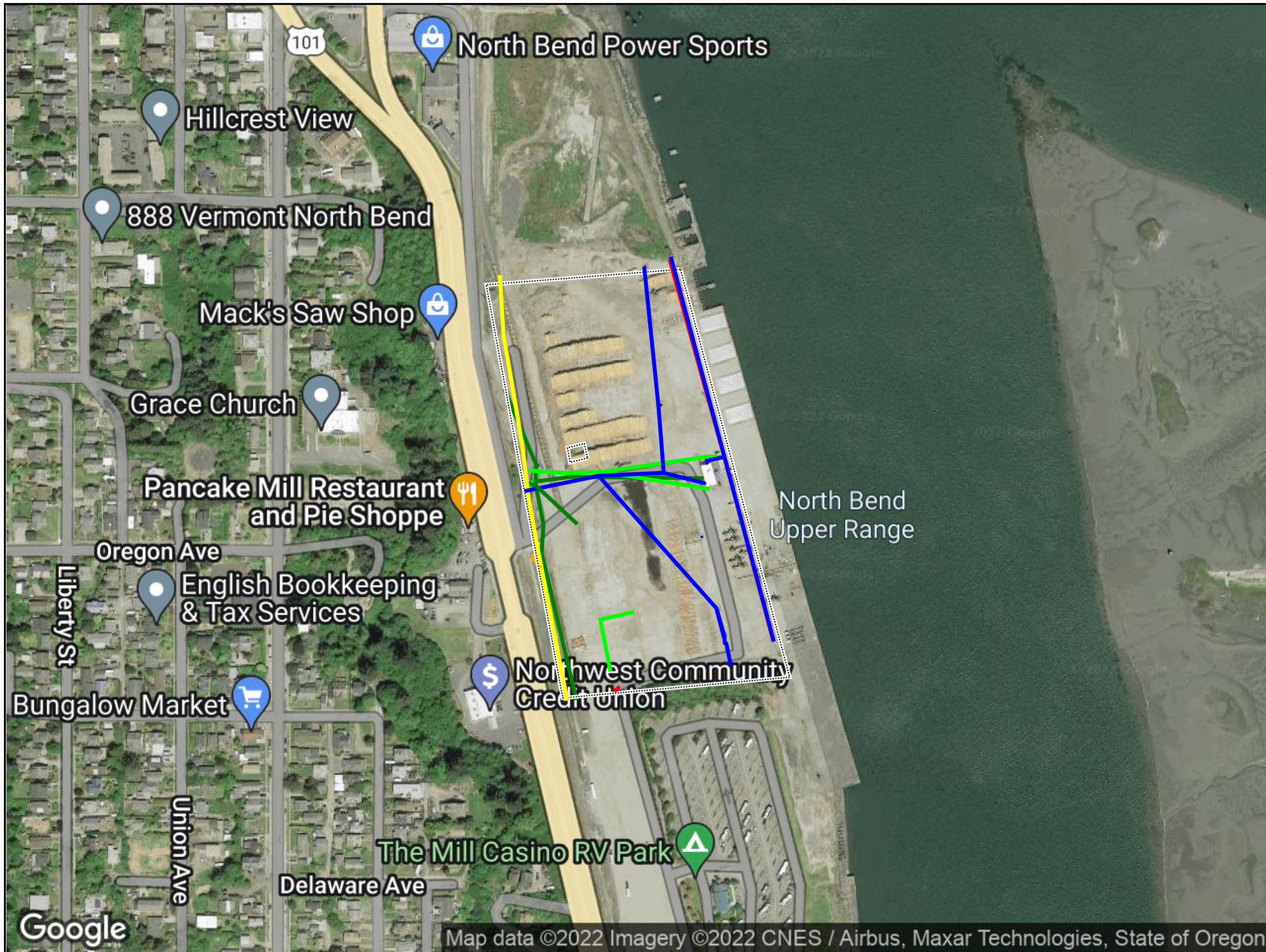
Please let me know if you have any questions, concerns, or additional requests. I look forward to working with you again soon.

Thank you!

Bradley Oberklaus

CC: Docs@gprsinc.com

Bradley.Oberklaus@gprsinc.com

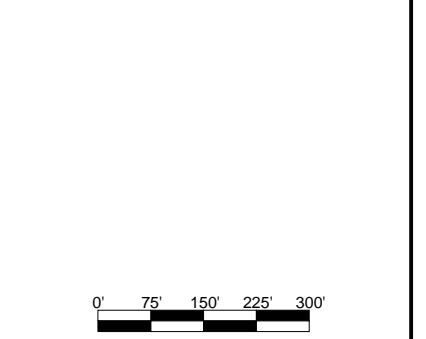


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GPRS FINDINGS MAP

PREPARED FOR:
STANTEC


LOCATION:
FORMER LUMBER YARD
3050 TREMONT AVE
NORTH BEND, OR



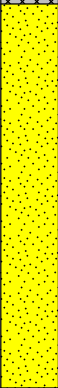

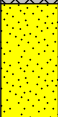
PROJECT MANAGER:
BRADLEY OBERKLAUS
BRADLEY.OBERKLAUS@GPRSINC.COM

DATE	2022 JUL 13
DRAWING NO.	1 REV. 0

Appendix B BORING LOGS



PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	NORTHING (ft): 401154.04	EASTING (ft): 4805951.85
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	INITIAL DTW (ft): 3	BOREHOLE DEPTH (ft): 10
DRILLING COMPANY: Steadfast Services NW, LLC	STATIC DTW (ft): 0.5	WELL DEPTH (ft): 10
DRILLING EQUIPMENT: GeoProbe 7720 DT	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
DRILLING METHOD: Direct Push	LOGGED BY: PJ	CHECKED BY: DH
SAMPLING EQUIPMENT: 5' Liners		

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			CONCRETE			4.0 / 5			
			SAND WITH SILT TRACE GRAVEL ; light gray; fine to medium-grained; loose; moist; subangular; well graded		SB01-0.5-3 Collected @ 1020				
		SP	SAND ; SP; gray; fine-grained; loose; moist; subangular; poorly graded; ~50% shells in unit Wet @ 3'					0.1	
5							3.6 / 5		
			Wood Fragments					0.1	
		SP	SAND ; SP; gray; fine-grained; loose; wet; subangular; poorly graded; ~50% shells in unit						
10			Borehole terminated at 10 feet.						10

GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

PROJECT: **Ko'Kwel Wharf**
 LOCATION: **Coos Bay, OR**
 PROJECT NUMBER: **185751418**

WELL / PROBEHOLE / BOREHOLE NO:



PAGE 1 OF 1


SB-02

DRILLING: STARTED **4/12/22** COMPLETED: **4/12/22**
 INSTALLATION: STARTED **4/12/22** COMPLETED: **4/12/22**
 DRILLING COMPANY: **Steadfast Services NW, LLC**
 DRILLING EQUIPMENT: **GeoProbe 7720 DT**
 DRILLING METHOD: **Direct Push**
 SAMPLING EQUIPMENT: **5' Liners**

NORTHING (ft): **401324.76** EASTING (ft): **4805945.36**
 GROUND ELEV (ft): **N/A** TOC ELEV (ft): **N/A**
 INITIAL DTW (ft): **7** BOREHOLE DEPTH (ft): **15**
 STATIC DTW (ft): **5.71** WELL DEPTH (ft): **15**
 WELL CASING DIA. (in): **0.75** BOREHOLE DIA.(in): **2.25**
 LOGGED BY: **PJ** CHECKED BY: **DH**


Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			ASPHALT			3.9 / 5			
			SAND AND GRAVEL						
		SP	SAND ; SP; tan to gray; loose; moist; subangular; poorly graded; ~50% shells in unit		SB02-0-3 Collected @ 1645			0.3	
5			3" Brown silt lense @ 4.5'		SB02-3-7 Collected @ 1700	4.2 / 5			5
		SP	SAND ; SP; tan to gray; loose; moist; subangular; poorly graded						
			Wet @ 7'					0.1	
10			NO RECOVERY ; Liner stuck in Drill Rod			NR			10
15			Borehole terminated at 15 feet.					NA	15





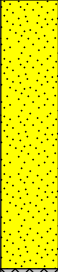

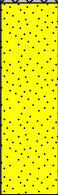
GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	SB-03	
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	NORTHING (ft): 401306.34	EASTING (ft): 4806025.94
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
DRILLING COMPANY: Steadfast Services NW, LLC	INITIAL DTW (ft): 5	BOREHOLE DEPTH (ft): 10
DRILLING EQUIPMENT: GeoProbe 7720 DT	STATIC DTW (ft): 7.41	WELL DEPTH (ft): 10
DRILLING METHOD: Direct Push	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
SAMPLING EQUIPMENT: 5' Liners	LOGGED BY: PJ	CHECKED BY: DH


Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			ASPHALT			4.2 / 5			
			SAND AND GRAVEL						
		SP	SAND ; SP; light gray; fine-grained; loose; dry; subangular; poorly graded		SB03-0.5-3 Collected @ 1120			0.0	
5		SP	SAND ; SP; gray; fine-grained; loose; moist; subangular; poorly graded; ~50% shells in unit Wet @ 5' 3" Silt lense @ 5.75		SB03-3-5 Collected @ 1125	3.7 / 5		0.0	5
10			Borehole terminated at 10 feet.						10

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PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	NORTHING (ft): 401152.61	EASTING (ft): 4806037.07
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	INITIAL DTW (ft): 3	BOREHOLE DEPTH (ft): 10
DRILLING COMPANY: Steadfast Services NW, LLC	STATIC DTW (ft): 0.16	WELL DEPTH (ft): 10
DRILLING EQUIPMENT: GeoProbe 7720 DT	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
DRILLING METHOD: Direct Push	LOGGED BY: PJ	CHECKED BY: DH
SAMPLING EQUIPMENT: 5' Liners		


Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	
			CONCRETE	SB04-0-3 & Dup-01 Collected @ 1630		3.7 / 5			▼	
			SAND AND GRAVEL							
			CONCRETE							
			SAND AND GRAVEL							
5		SP	SAND ; SP; gray; fine-grained; very moist to wet; subangular; poorly graded; ~50% shells in unit				4.2 / 5		0.1	▽
			Wood Fibers							
		SP	SAND ; SP; gray; fine-grained; wet; subangular; poorly graded; ~50% shells in unit							
10			Borehole terminated at 10 feet.						0.1	
15										



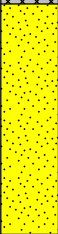



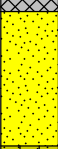

GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	SB-05	
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	NORTHING (ft): 401285.61	EASTING (ft): 4806103.78
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
DRILLING COMPANY: Steadfast Services NW, LLC	INITIAL DTW (ft): 10	BOREHOLE DEPTH (ft): 15
DRILLING EQUIPMENT: GeoProbe 7720 DT	STATIC DTW (ft): 7.55	WELL DEPTH (ft): 15
DRILLING METHOD: Direct Push	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
SAMPLING EQUIPMENT: 5' Liners	LOGGED BY: PJ	CHECKED BY: DH


Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			ASPHALT			3.9 / 5			
			SAND AND GRAVEL		SB05-0.5-3 Collected @ 1225			0.1	
5		SP	SAND ; SP; gray; fine-grained; loose; moist; poorly graded; ~50% shells in unit 2" silt lense @ 5'		SB05-3-10 Collected @ 1230	3.2 / 5		0.1	5
10			Wet @ 10' Trace wood fragments from 12' - 14'			4.2 / 5			10
15		ML	SILT WITH SAND ; ML; dark gray; cohesive; low plasticity; firm; wet; wood fragments present					0.0	
Borehole terminated at 15 feet.									




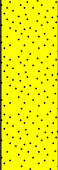

GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	SB-06	
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	NORTHING (ft): 401149.86	EASTING (ft): 4806147.53
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
DRILLING COMPANY: Steadfast Services NW, LLC	INITIAL DTW (ft): 3	BOREHOLE DEPTH (ft): 10
DRILLING EQUIPMENT: GeoProbe 7720 DT	STATIC DTW (ft): 3.62	WELL DEPTH (ft): 10
DRILLING METHOD: Direct Push	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
SAMPLING EQUIPMENT: 5' Liners	LOGGED BY: PJ	CHECKED BY: DH


Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			TOPSOIL			3.9 / 5			
			GRAVEL WITH SAND ; gray; medium to coarse-grained; loose; very moist; angular; well graded		SB06-0-3 Collected @ 1500				
5		SP	SAND ; SP; orangeish tan; fine-grained; loose; very moist to wet; subangular; poorly graded Wet @ 3'			3.7 / 5		0.1	 
		SP	SAND ; SP; grayish brown; fine-grained; loose; wet; subangular; poorly graded Wood fibers						
		SP	SAND ; SP; grayish brown; fine-grained; loose; wet; subangular; poorly graded					0.0	
10		SM	SILTY SAND ; SM; gray; fine-grained; loose; wet; subangular; poorly graded						
			Borehole terminated at 10 feet.						







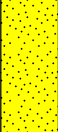


GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	SB-07	
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	NORTHING (ft): 401252.64	EASTING (ft): 4806208.34
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
DRILLING COMPANY: Steadfast Services NW, LLC	INITIAL DTW (ft): 6	BOREHOLE DEPTH (ft): 10
DRILLING EQUIPMENT: GeoProbe 7720 DT	STATIC DTW (ft): 9.05	WELL DEPTH (ft): 10
DRILLING METHOD: Direct Push	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
SAMPLING EQUIPMENT: 5' Liners	LOGGED BY: PJ	CHECKED BY: DH

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			ASPHALT			4.1 / 5			
			SAND AND GRAVEL						
		SP	SAND ; SP; tan; fine-grained; loose; dry; subangular; poorly graded		SB07-0.5-3 Collected @ 1320			0.1	
		SP	SAND WITH SILT ; SP; dark gray; fine-grained; medium dense; moist; subangular; poorly graded; shells and wood fragments present						
5			3" Silt lense @ 5'		SB07-3-6 Collected @ 1325	3.6 / 5			5
			Wet @ 6'						
		CL-ML	SILTY CLAY WITH SAND TRACE GRAVEL ; CL-ML; gray to light brown; cohesive; non plastic; firm; wet					0.1	
10			Borehole terminated at 10 feet.						10

GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

PROJECT: Ko'Kwel Wharf	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION: Coos Bay, OR	PAGE 1 OF 1	
PROJECT NUMBER: 185751418	SB-08	
DRILLING: STARTED 4/11/22 COMPLETED: 4/11/22	NORTHING (ft): 401136.23	EASTING (ft): 4806229.04
INSTALLATION: STARTED 4/11/22 COMPLETED: 4/11/22	GROUND ELEV (ft): N/A	TOC ELEV (ft): N/A
DRILLING COMPANY: Steadfast Services NW, LLC	INITIAL DTW (ft): 3	BOREHOLE DEPTH (ft): 10
DRILLING EQUIPMENT: GeoProbe 7720 DT	STATIC DTW (ft): 5.02	WELL DEPTH (ft): 10
DRILLING METHOD: Direct Push	WELL CASING DIA. (in): 0.75	BOREHOLE DIA.(in): 2.25
SAMPLING EQUIPMENT: 5' Liners	LOGGED BY: PJ	CHECKED BY: DH

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
			TOPSOIL			4.1 / 5			
			GRAVEL AND SAND ; grayish brown; fine to coarse-grained; loose; moist to very moist; angular; well graded		SB08-0-3 Collected @ 1545				
		SP	SAND ; SP; grayish brown; fine-grained; loose; very moist to wet; subangular; poorly graded					0.1	
		SP	SAND ; SP; orangeish tan; fine-grained; loose; wet; subangular; poorly graded						
		MLS	ASPHALT						
5		MLS	SANDY SILT WITH GRAVEL ; MLS; gray; cohesive; non plastic; firm; very moist			3.8 / 5			5
		SP	SAND ; SP; light brown; fine-grained; wet; subangular; poorly graded					0.1	
		SP	SAND ; SP; dark gray; fine-grained; wet; subangular; poorly graded; ~50% shells in unit						
		SP	SAND ; SP; dark gray; fine-grained; wet; subangular; poorly graded; ~50% wood fibers in unit						
10			Borehole terminated at 10 feet.						10

GEO FORM 304 20220502_DWG_KO_KWEL_WHARF_BORING_LOGS.GPJ STANTEC ENVIRO TEMPLATE 010509.GDT 5/3/22

Appendix C GROUNDWATER SAMPLING SHEETS



LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: KO FW1
 SITE ADDRESS: COOS RAY

 WELL ID: SB-1
 SAMPLE ID: SB-1
 DUPLICATE ID:

Wind From	N	NE	E	SE	S	SW	W	NW	Speed (mph)	
Weather	Sunny		Cloudy		Rain		?		Temperature	<u>50</u> °F <u> </u> °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
4/12/22	0925	3/4"	5-10	7"	-	2"	10"

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
0930 5	0.2	2"	6.96	10.6	-49	607	3.50	852	NA
0935 +5	0.2	2"	6.96	11.0	-88.8	624	3.19	386	1
0940 +5	0.2	3"	6.95	10.8	-102	620	2.91	152	
0945 +5	0.2	3"	6.94	10.8	-107	628	2.07	93.3	
0950 +5	0.2	3"	6.93	10.8	-110	624	2.90	69.9	

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/12/22 Sample Time: 1000

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	2 1 L	None	No	
Amber Glass		2 1 L	HCL	No	
VOA Glass		3 40 ml	HCL	No	
Poly		1 250 ml	HNO3	No	
Poly		1 250 ml	HNO3	Yes	
Poly		1L	None	No	
Poly		250 ml	H2SO4	No	
Poly		250 ml	None	No	

 Total Bottles: 9

 Notes: _____

 Sampled By: Dana Hutchins

 Signature: Dana Hutchins

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: to level
 SITE ADDRESS: _____

 WELL ID: SB-2
 SAMPLE ID: SB-2
 DUPLICATE ID: _____

Wind From	N	NE	E	SE	S	SW	W	NW	Speed (mph)	
Weather	Sunny		Cloudy		Rain		_____?		Temperature	<u>50</u> °F _____ °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
4/13/22	1055	3/4	10-15'	12'	-	5.5'	15'

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
1100 5	0.3	5.5	6.97	10.5	-82	482	0.67	44.7	NA
1105 +5	0.3	5.5	7.00	10.5	-78	406	0.52	13.8	
1110 +5	0.3	5.5	6.97	10.7	-84	424	0.55	6.01	
1115 +5	0.3	5.5	6.95	10.6	-87	434	0.68	5.75	
1120 +5	0.3	5.5	6.95	10.6	-88	439	0.65	4.60	

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/13/22 Sample Time: 1130

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	2 1 L	None	No	
Amber Glass		2 1 L	HCL	No	
VOA Glass		3 40 ml	HCL	No	
Poly		1 250 ml	HNO3	No	
Poly		1 250 ml	HNO3	Yes	
Poly		1L	None	No	
Poly		250 ml	H2SO4	No	
Poly		250 ml	None	No	

Total Bottles 9

 Notes: Also collected Equipment Blank Sample
EB-041322 © 1200

 Sampled By: Dana Hutchins Signature: Dana Hutchins

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: HO tunnel

 WELL ID: SB-3

SITE ADDRESS: _____

 SAMPLE ID: SB-3

DUPLICATE ID: _____

Wind From	N	NE	E	SE	S	SW	W	NW	Speed (mph)	
Weather	Sunny		Cloudy		Rain		_____?		Temperature	<u>50</u> °F _____ °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
4/12/22	1105	3/4	5-10	8'	-	6.95	10'

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
1110	0.2	6.95	6.88	12.1	-89	1074	2.22	208	NA
1115	0.2	6.95	6.86	12.2	-99.8	1083	2.16	52.6	↓
1120	0.2	6.95	6.83	12.7	-106	1087	2.19	18.1	
1125	0.2	6.95	6.83	12.3	-105	1073	2.19	9.21	
1130	0.2	6.95	6.84	12.4	-107	1074	2.20	11.0	

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/12/22 Sample Time: 1130

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	2 1 L	None	No	
Amber Glass		2 1 L	HCL	No	
VOA Glass		3 40 ml	HCL	No	
Poly		1 250 ml	HNO3	No	
Poly		1 250 ml	HNO3	Yes	
Poly		1L	None	No	
Poly		250 ml	H2SO4	No	
Poly		250 ml	None	No	

 Total Bottles: 9

Notes: _____

 Sampled By: Dana Hutchins Signature: Dana Hutchins

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: Hokuei

 WELL ID: SB-4

 SITE ADDRESS: Coos Bay

 SAMPLE ID: SB-4

 DUPLICATE ID:

Wind From Weather	N	NE	E	SE	S	SW	W	NW	Speed (mph)	
	Sunny		Cloudy		Rain		?		Temperature	<u>50</u> °F _____ °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
4/12/22	1230	8"	5-10"	8"	-	2"	10"

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)	
1235	5	0.2	24	6.84	11.5	-68	624	1.13	102	2.1
1240	+5	0.2	24	6.80	11.4	-72	622	1.07	50.5	
1245	+5	0.2	21	6.79	11.2	-74	623	0.95	33.9	
1250	+5	0.2	24	6.76	11.0	-75	626	0.92	25.8	
1255	+5	0.2	24	6.76	10.9	-77	629	0.93	23.6	

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/12/22 Sample Time: 1300

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	2 1 L	None	No	
Amber Glass		2 1 L	HCL	No	
VOA Glass		3 40 ml	HCL	No	
Poly		1 250 ml	HNO3	No	
Poly		1 250 ml	HNO3	Yes	
Poly		1L	None	No	
Poly		250 ml	H2SO4	No	
Poly		250 ml	None	No	

 Total Bottles: 9

 Notes: _____

 Sampled By: Dana Hutchins Signature: Dana Hutchins

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: Kio Kweil

 WELL ID: SB-5

SITE ADDRESS: _____

 SAMPLE ID: SB-5

DUPLICATE ID: _____

Wind From	N	NE	E	SE	S	SW	W	NW	Speed (mph)	
Weather	Sunny		Cloudy		Rain		_____?		Temperature	<u>50</u> °F _____ °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
<u>4/12/22</u>	<u>1150</u>	<u>3/4</u>	<u>5-10</u>	<u>8'</u>	<u>-</u>	<u>7.60</u>	<u>10'</u>

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

 1355
1400
1405
1410

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
<u>5</u>	<u>0.3</u>	<u>7.60</u>	<u>6.74</u>	<u>13.0</u>	<u>-99</u>	<u>1272</u>	<u>1.12</u>	<u>579</u>	<u>NA</u>
<u>+5</u>	<u>0.3</u>	<u>7.60</u>	<u>6.74</u>	<u>13.0</u>	<u>-107</u>	<u>1237</u>	<u>1.11</u>	<u>193</u>	
<u>+5</u>	<u>0.3</u>	<u>7.60</u>	<u>6.79</u>	<u>13.0</u>	<u>-112</u>	<u>1219</u>	<u>1.17</u>	<u>133</u>	
<u>15</u>	<u>0.3</u>	<u>7.60</u>	<u>6.78</u>	<u>12.9</u>	<u>-112</u>	<u>1213</u>	<u>1.20</u>	<u>112</u>	

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/12/22 Sample Time: 1415

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	<u>2</u> 1 L	None	No	
Amber Glass		<u>2</u> 1 L	HCL	No	
VOA Glass		<u>3</u> 40 ml	HCL	No	
Poly		<u>1</u> 250 ml	HNO3	No	
Poly		<u>1</u> 250 ml	HNO3	Yes	
Poly		<u>1</u> 1L	None	No	
Poly		<u>1</u> 250 ml	H2SO4	No	
Poly		<u>1</u> 250 ml	None	No	

 Total Bottles 9

Notes: _____

 Sampled By: Dana Hutchins

 Signature: Dana Hutchins

LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: Ho Kwee

 WELL ID: SB-6

SITE ADDRESS: _____

 SAMPLE ID: SB-6

DUPLICATE ID: _____

Wind From	N	NE	E	SE	S	SW	W	NW	Speed (mph)	
Weather	Sunny		Cloudy		Rain		_____?		Temperature	<u>50</u> °F _____ °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
<u>4/12/22</u>	<u>1450</u>	<u>3/4</u>	<u>5-10</u>	<u>8'</u>	<u>-</u>	<u>4.0</u>	<u>10'</u>

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
<u>5</u>	<u>0.3</u>	<u>4.0</u>	<u>7.29</u>	<u>11.0</u>	<u>-74</u>	<u>285</u>	<u>0.61</u>	<u>502</u>	<u>NA</u>
<u>+5</u>	<u>0.3</u>	<u>4.0</u>	<u>7.18</u>	<u>10.8</u>	<u>-77</u>	<u>288</u>	<u>0.52</u>	<u>74.4</u>	
<u>+5</u>	<u>0.3</u>	<u>4.0</u>	<u>7.17</u>	<u>10.8</u>	<u>-78</u>	<u>289</u>	<u>0.53</u>	<u>23.6</u>	
<u>+5</u>	<u>0.3</u>	<u>4.0</u>	<u>7.14</u>	<u>10.8</u>	<u>-78</u>	<u>289</u>	<u>0.57</u>	<u>18.1</u>	

 1300
 1305
 1310
 1315

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/12/22 Sample Time: 1520

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	<u>2</u> 1 L	None	No	
Amber Glass		<u>2</u> 1 L	HCL	No	
VOA Glass		<u>3</u> 40 ml	HCL	No	
Poly		<u>1</u> 250 ml	HNO3	No	
Poly		<u>1</u> 250 ml	HNO3	Yes	
Poly		1L	None	No	
Poly		250 ml	H2SO4	No	
Poly		250 ml	None	No	

 Total Bottles 9

Notes: _____

 Sampled By: Dana Hetchins

 Signature: Dana Hetchins


LOW-FLOW GROUNDWATER SAMPLING DATA SHEET

 PROJECT NAME: fu tunnel
 SITE ADDRESS: _____

 WELL ID: SB-7
 SAMPLE ID: SB-7
 DUPLICATE ID: -

Wind From Weather	N	NE	E	SE	S	SW	W	NW	Speed (mph)		
	Sunny		Cloudy		(Rain)		_____?		Temperature	50 °F	_____ °C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
4/12/22	1630	3/4	5-10	8'	-	6.15	10'

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
1635 5	0.1	6.15	6.67	11.1	-64	1162	0.79	7100	ND
+5		pumped well		dry					
+5									

 Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%
 Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

 Sample Date: 4/12/22 Sample Time: 1645

Bottle Type	✓	Amount & Volume	Preservative	Filter	Other
Amber Glass	✓	2 1 L	None	No	
Amber Glass		2 1 L	HCL	No	
VOA Glass		3 40 ml	HCL	No	
Poly		1 250 ml	HNO3	No	
Poly		1 250 ml	HNO3	Yes	
Poly		1L	None	No	
Poly		250 ml	H2SO4	No	
Poly		250 ml	None	No	

 Total Bottles: 9

 Notes: poor recharge, pumped well dry after 5 min of pumping. Let recharge and then sampled.

 Sampled By: Dana Hutchins Signature: Dana Hutchins

LOW-FLOW GROUNDWATER SAMPLING DATA SHEETPROJECT NAME: Ko KweWELL ID: SB-8

SITE ADDRESS: _____

SAMPLE ID: SB-8DUPLICATE ID: SB-X

Wind From	N	NE	E	SE	S	SW	W	NW	Speed (mph)	Temperature	
Weather	Sunny		<u>Cloudy</u>		Rain			?		45 °F	°C

WELL DATA

Date	Time	Casing Size	Screen Interval	Sample Depth	DTP	DTW	DTB
4/13/22	0840	3/4	5-10'	8'	-	5.15'	10'

DTP = Depth to product, DTW = Depth to water, DTB = Depth to bottom

Time (min)	Liters/Minute	DTW (feet)	PH	Temp. (°C)	ORP (mV)	Cond. (µS/cm)	DO (mg/L)	Turb. (NTU)	F. Iron (mg/L)
0850 5	0.3	5.15	6.88	10.3	5.2	589	5.46	916	N/A
0855 +5	0.3	5.15	6.94	10.5	~45	204	3.96	129	
0900 +5	0.3	5.15	6.95	10.5	~58	717	2.82	55.4	
0905 +5	0.3	5.15	6.95	10.6	-64	716	2.23	33.5	
0910 +5	0.3	5.15	6.95	10.6	-69	720	1.86	25.8	
0915 +5	0.3	5.15	6.96	10.6	-70	725	1.80	25.8	
0920 +5	0.3	5.15	6.95	10.6	-71	730	1.77	35.9	

Stabilization Criteria: ±0.1 3% ±10mV 3% 10% 10%

Flow rate range 0.1-0.5 L/min; Optimal total drawdown <0.3'

Sample Date: 4/13/22 Sample Time: 0930dep @ 0945

Bottle Type	√	Amount & Volume	Preservative	Filter	Other
Amber Glass	√	2 1 L	None	No	
Amber Glass		2 1 L	HCL	No	
VOA Glass		3 40 ml	HCL	No	
Poly		1 250 ml	HNO3	No	
Poly		1 250 ml	HNO3	Yes	
Poly		1 1L	None	No	
Poly		1 250 ml	H2SO4	No	
Poly		1 250 ml	None	No	

Total Bottles 9Notes: Also collected dup - X at LocationSampled By: Dana HutchinsSignature: Dana Hutchins

Appendix D LABORATORY ANALYTICAL REPORTS





ANALYTICAL REPORT

Apex Laboratories, LLC

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

Tuesday, May 17, 2022
Graeme Taylor
Stantec Portland
601 SW 2nd Ave Suite 1400
Portland, OR 97204

RE: A2D0663 - Ko' Kuel Wharf - 185751418

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 A2D0663, which was received by the laboratory on 4/18/2022 at 3:00:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler # 10	0.9 degC	Cooler #1	4.8 degC
Cooler #2	4.6 degC	Cooler #3	3.7 degC
Cooler #4	2.3 degC	Cooler #5	0.9 degC
Cooler #6	0.8 degC	Cooler #7	0.0 degC
Cooler #8	2.1 degC	Cooler #9	1.7 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

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01-0.5-3	A2D0663-01	Soil	04/11/22 10:20	04/18/22 15:00
SB02-0-3	A2D0663-02	Soil	04/12/22 16:45	04/18/22 15:00
SB02-3-7	A2D0663-03	Soil	04/12/22 17:00	04/18/22 15:00
SB03-0.5-3	A2D0663-04	Soil	04/11/22 11:20	04/18/22 15:00
SB03-3-5	A2D0663-05	Soil	04/11/22 11:25	04/18/22 15:00
SB04-0-3	A2D0663-06	Soil	04/11/22 16:30	04/18/22 15:00
SB05-0.5-3	A2D0663-07	Soil	04/11/22 12:25	04/18/22 15:00
SB05-3-10	A2D0663-08	Soil	04/11/22 12:30	04/18/22 15:00
SB06-0-3	A2D0663-09	Soil	04/11/22 15:00	04/18/22 15:00
SB07-0.5-3	A2D0663-10	Soil	04/11/22 13:20	04/18/22 15:00
SB07-3-6	A2D0663-11	Soil	04/11/22 13:25	04/18/22 15:00
SB08-0-3	A2D0663-12	Soil	04/11/22 15:45	04/18/22 15:00
SB-1	A2D0663-13	Water	04/12/22 10:00	04/18/22 15:00
SB-2	A2D0663-14	Water	04/13/22 11:30	04/18/22 15:00
SB-3	A2D0663-15	Water	04/12/22 11:30	04/18/22 15:00
SB-4	A2D0663-16	Water	04/12/22 13:00	04/18/22 15:00
SB-5	A2D0663-17	Water	04/12/22 14:15	04/18/22 15:00
SB-6	A2D0663-18	Water	04/12/22 15:20	04/18/22 15:00
SB-7	A2D0663-19	Water	04/12/22 16:45	04/18/22 15:00
SB-8	A2D0663-20	Water	04/13/22 09:30	04/18/22 15:00
DUP-01	A2D0663-21	Soil	04/11/22 00:00	04/18/22 15:00
DUP-X	A2D0663-22	Water	04/13/22 09:45	04/18/22 15:00
DU-01	A2D0663-23	Soil	04/14/22 12:00	04/18/22 15:00
DU-01	A2D0663-24	Soil	04/14/22 12:00	04/18/22 15:00
DU-02	A2D0663-25	Soil	04/12/22 15:00	04/18/22 15:00
DU-02	A2D0663-26	Soil	04/12/22 15:00	04/18/22 15:00
DU-03	A2D0663-27	Soil	04/13/22 11:50	04/18/22 15:00
DU-03	A2D0663-28	Soil	04/13/22 11:50	04/18/22 15:00
DU-04	A2D0663-29	Soil	04/15/22 12:00	04/18/22 15:00
DU-04	A2D0663-30	Soil	04/15/22 12:00	04/18/22 15:00
DU-05	A2D0663-31	Soil	04/14/22 11:00	04/18/22 15:00
DU-05	A2D0663-32	Soil	04/14/22 11:00	04/18/22 15:00
DU-06	A2D0663-33	Soil	04/13/22 16:30	04/18/22 15:00

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

<u>Stantec Portland</u> 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DU-06	A2D0663-34	Soil	04/13/22 16:30	04/18/22 15:00
DU-07	A2D0663-35	Soil	04/15/22 13:00	04/18/22 15:00
DU-07	A2D0663-36	Soil	04/15/22 13:00	04/18/22 15:00
DU-08	A2D0663-37	Soil	04/16/22 08:20	04/18/22 15:00
DU-08	A2D0663-38	Soil	04/16/22 08:20	04/18/22 15:00
DU-DUP	A2D0663-39	Soil	04/14/22 13:00	04/18/22 15:00
DU-DUP	A2D0663-40	Soil	04/14/22 13:00	04/18/22 15:00
DU-TRIP	A2D0663-41	Soil	04/14/22 14:00	04/18/22 15:00
DU-TRIP	A2D0663-42	Soil	04/14/22 14:00	04/18/22 15:00
EB-041322	A2D0663-43	Water	04/13/22 12:00	04/18/22 15:00
TB-01	A2D0663-44	Water	04/11/22 00:00	04/18/22 15:00
TB-02	A2D0663-45	Water	04/12/22 00:00	04/18/22 15:00
TB-03	A2D0663-46	Water	04/13/22 00:00	04/18/22 15:00
TB-04	A2D0663-47	Water	04/13/22 00:00	04/18/22 15:00
TB-05	A2D0663-48	Water	04/14/22 00:00	04/18/22 15:00
TB-06	A2D0663-49	Water	04/15/22 00:00	04/18/22 15:00
TB-07	A2D0663-50	Water	04/16/22 00:00	04/18/22 15:00
TB-08	A2D0663-51	Water	04/16/22 00:00	04/18/22 15:00
TB-09	A2D0663-52	Water	04/16/22 00:00	04/18/22 15:00

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: **OR100062**

<u>Stantec Portland</u> 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	<u>Report ID:</u> A2D0663 - 05 17 22 1412
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ANALYTICAL CASE NARRATIVE

Work Order: A2D0663

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D0836		
Diesel	ND	11.4	25.0	mg/kg dry	1	04/22/22 04:44	NWTPH-Dx	
Oil	ND	22.9	50.0	mg/kg dry	1	04/22/22 04:44	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 04:44</i>	<i>NWTPH-Dx</i>
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0860		
Diesel	ND	12.7	25.4	mg/kg dry	1	04/22/22 21:19	NWTPH-Dx	
Oil	25.4	25.4	50.8	mg/kg dry	1	04/22/22 21:19	NWTPH-Dx	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 77 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 21:19</i>	<i>NWTPH-Dx</i>
SB02-3-7 (A2D0663-03RE2)				Matrix: Soil		Batch: 22D0860		
Diesel	ND	14.2	28.5	mg/kg dry	1	04/25/22 11:20	NWTPH-Dx	
Oil	61.1	28.5	56.9	mg/kg dry	1	04/25/22 11:20	NWTPH-Dx	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 82 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/25/22 11:20</i>	<i>NWTPH-Dx</i>
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D0860		
Diesel	ND	10.7	25.0	mg/kg dry	1	04/22/22 22:21	NWTPH-Dx	
Oil	ND	21.5	50.0	mg/kg dry	1	04/22/22 22:21	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 85 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 22:21</i>	<i>NWTPH-Dx</i>
SB03-3-5 (A2D0663-05RE1)				Matrix: Soil		Batch: 22D0958		
Diesel	ND	11.2	25.0	mg/kg dry	1	04/25/22 22:17	NWTPH-Dx	
Oil	ND	22.4	50.0	mg/kg dry	1	04/25/22 22:17	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/25/22 22:17</i>	<i>NWTPH-Dx</i>
SB04-0-3 (A2D0663-06RE1)				Matrix: Soil		Batch: 22D0958		
Diesel	ND	13.9	27.8	mg/kg dry	1	04/25/22 22:58	NWTPH-Dx	
Oil	43.8	27.8	55.6	mg/kg dry	1	04/25/22 22:58	NWTPH-Dx	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 86 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/25/22 22:58</i>	<i>NWTPH-Dx</i>
SB05-0.5-3 (A2D0663-07RE1)				Matrix: Soil		Batch: 22D0958		
Diesel	ND	13.0	25.9	mg/kg dry	1	04/25/22 23:19	NWTPH-Dx	
Oil	ND	25.9	51.8	mg/kg dry	1	04/25/22 23:19	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/25/22 23:19</i>	<i>NWTPH-Dx</i>

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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
SB05-3-10 (A2D0663-08RE1)				Matrix: Soil		Batch: 22D0958		
Diesel	ND	11.7	25.0	mg/kg dry	1	04/25/22 23:39	NWTPH-Dx	
Oil	ND	23.5	50.0	mg/kg dry	1	04/25/22 23:39	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/25/22 23:39</i>	<i>NWTPH-Dx</i>
SB06-0-3 (A2D0663-09RE2)				Matrix: Soil		Batch: 22D0944		
Diesel	ND	21.4	42.7	mg/kg dry	2	04/26/22 09:21	NWTPH-Dx	
Oil	1160	42.7	85.5	mg/kg dry	2	04/26/22 09:21	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 85 %</i>		<i>Limits: 50-150 %</i>		<i>2</i>	<i>04/26/22 09:21</i>	<i>NWTPH-Dx S-05</i>
SB07-0.5-3 (A2D0663-10RE1)				Matrix: Soil		Batch: 22D0944		
Diesel	ND	10.1	25.0	mg/kg dry	1	04/26/22 00:41	NWTPH-Dx	
Oil	ND	20.3	50.0	mg/kg dry	1	04/26/22 00:41	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 00:41</i>	<i>NWTPH-Dx</i>
SB07-3-6 (A2D0663-11RE1)				Matrix: Soil		Batch: 22D0944		
Diesel	ND	14.8	29.5	mg/kg dry	1	04/26/22 01:01	NWTPH-Dx	
Oil	125	29.5	59.1	mg/kg dry	1	04/26/22 01:01	NWTPH-Dx	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 82 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 01:01</i>	<i>NWTPH-Dx</i>
SB08-0-3 (A2D0663-12RE1)				Matrix: Soil		Batch: 22D0944		
Diesel	ND	11.7	25.0	mg/kg dry	1	04/26/22 01:22	NWTPH-Dx	
Oil	35.0	23.3	50.0	mg/kg dry	1	04/26/22 01:22	NWTPH-Dx	J
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 86 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 01:22</i>	<i>NWTPH-Dx</i>
SB-1 (A2D0663-13)				Matrix: Water		Batch: 22D0823		
Diesel	ND	0.0935	0.187	mg/L	1	04/21/22 23:30	NWTPH-Dx	
Oil	ND	0.187	0.374	mg/L	1	04/21/22 23:30	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/21/22 23:30</i>	<i>NWTPH-Dx</i>
SB-2 (A2D0663-14)				Matrix: Water		Batch: 22D0975		
Diesel	ND	0.106	0.213	mg/L	1	04/26/22 22:16	NWTPH-Dx	
Oil	ND	0.213	0.426	mg/L	1	04/26/22 22:16	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 22:16</i>	<i>NWTPH-Dx</i>

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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
SB-3 (A2D0663-15)			Matrix: Water			Batch: 22D0823		
Diesel	ND	0.108	0.215	mg/L	1	04/21/22 23:53	NWTPH-Dx	
Oil	ND	0.215	0.430	mg/L	1	04/21/22 23:53	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/21/22 23:53</i>	<i>NWTPH-Dx</i>
SB-4 (A2D0663-16)			Matrix: Water			Batch: 22D0823		
Diesel	ND	0.109	0.217	mg/L	1	04/22/22 00:16	NWTPH-Dx	
Oil	ND	0.217	0.435	mg/L	1	04/22/22 00:16	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 00:16</i>	<i>NWTPH-Dx</i>
SB-5 (A2D0663-17)			Matrix: Water			Batch: 22D0823		
Diesel	ND	0.110	0.220	mg/L	1	04/22/22 00:38	NWTPH-Dx	
Oil	ND	0.220	0.440	mg/L	1	04/22/22 00:38	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 00:38</i>	<i>NWTPH-Dx</i>
SB-6 (A2D0663-18)			Matrix: Water			Batch: 22D0823		
Diesel	ND	0.120	0.241	mg/L	1	04/22/22 01:00	NWTPH-Dx	
Oil	ND	0.241	0.482	mg/L	1	04/22/22 01:00	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 01:00</i>	<i>NWTPH-Dx</i>
SB-7 (A2D0663-19)			Matrix: Water			Batch: 22D0823		
Diesel	0.297	0.139	0.278	mg/L	1	04/22/22 01:23	NWTPH-Dx	F-11
Oil	ND	0.278	0.556	mg/L	1	04/22/22 01:23	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/22/22 01:23</i>	<i>NWTPH-Dx</i>
SB-8 (A2D0663-20)			Matrix: Water			Batch: 22D0975		
Diesel	ND	0.101	0.202	mg/L	1	04/26/22 22:36	NWTPH-Dx	
Oil	ND	0.202	0.404	mg/L	1	04/26/22 22:36	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 22:36</i>	<i>NWTPH-Dx</i>
DUP-01 (A2D0663-21RE1)			Matrix: Soil			Batch: 22D0944		
Diesel	ND	14.2	28.3	mg/kg dry	1	04/26/22 01:42	NWTPH-Dx	
Oil	110	28.3	56.6	mg/kg dry	1	04/26/22 01:42	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 01:42</i>	<i>NWTPH-Dx</i>

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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
DUP-X (A2D0663-22)				Matrix: Water		Batch: 22D0975		
Diesel	ND	0.0990	0.198	mg/L	1	04/26/22 22:57	NWTPH-Dx	
Oil	ND	0.198	0.396	mg/L	1	04/26/22 22:57	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 22:57</i>	<i>NWTPH-Dx</i>
DU-01 (A2D0663-24)				Matrix: Soil		Batch: 22D1071		PRO
Diesel	134	9.75	25.0	mg/kg dry	1	04/28/22 21:56	NWTPH-Dx	F-11
Oil	227	19.5	50.0	mg/kg dry	1	04/28/22 21:56	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 81 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/28/22 21:56</i>	<i>NWTPH-Dx</i>
DU-02 (A2D0663-26RE1)				Matrix: Soil		Batch: 22D0971		PRO
Diesel	ND	48.5	96.9	mg/kg dry	5	04/27/22 08:09	NWTPH-Dx	
Oil	832	96.9	194	mg/kg dry	5	04/27/22 08:09	NWTPH-Dx	F-13
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 50-150 %</i>		<i>5</i>	<i>04/27/22 08:09</i>	<i>NWTPH-Dx</i>
DU-03 (A2D0663-28)				Matrix: Soil		Batch: 22D1021		PRO
Diesel	ND	9.62	25.0	mg/kg dry	1	04/27/22 22:02	NWTPH-Dx	
Oil	190	19.2	50.0	mg/kg dry	1	04/27/22 22:02	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/27/22 22:02</i>	<i>NWTPH-Dx</i>
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1114		PRO
Diesel	ND	10.1	25.0	mg/kg dry	1	04/29/22 22:45	NWTPH-Dx	
Oil	195	20.2	50.0	mg/kg dry	1	04/29/22 22:45	NWTPH-Dx	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 83 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/29/22 22:45</i>	<i>NWTPH-Dx</i>
DU-05 (A2D0663-32)				Matrix: Soil		Batch: 22D1071		PRO
Diesel	ND	9.80	25.0	mg/kg dry	1	04/28/22 22:37	NWTPH-Dx	
Oil	220	19.6	50.0	mg/kg dry	1	04/28/22 22:37	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/28/22 22:37</i>	<i>NWTPH-Dx</i>
DU-06 (A2D0663-34)				Matrix: Soil		Batch: 22D1021		PRO
Diesel	ND	9.58	25.0	mg/kg dry	1	04/27/22 22:43	NWTPH-Dx	
Oil	131	19.2	50.0	mg/kg dry	1	04/27/22 22:43	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 72 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/27/22 22:43</i>	<i>NWTPH-Dx</i>

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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
DU-07 (A2D0663-36)				Matrix: Soil		Batch: 22D1114		PRO
Diesel	ND	9.33	25.0	mg/kg dry	1	04/29/22 23:52	NWTPH-Dx	
Oil	263	18.7	50.0	mg/kg dry	1	04/29/22 23:52	NWTPH-Dx	F-03
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 87 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/29/22 23:52</i>	<i>NWTPH-Dx</i>
DU-08 (A2D0663-38)				Matrix: Soil		Batch: 22D1114		PRO
Diesel	ND	9.32	25.0	mg/kg dry	1	04/30/22 00:15	NWTPH-Dx	
Oil	260	18.6	50.0	mg/kg dry	1	04/30/22 00:15	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/30/22 00:15</i>	<i>NWTPH-Dx</i>
DU-DUP (A2D0663-40)				Matrix: Soil		Batch: 22D1071		PRO
Diesel	95.7	9.64	25.0	mg/kg dry	1	04/28/22 22:57	NWTPH-Dx	F-11
Oil	159	19.3	50.0	mg/kg dry	1	04/28/22 22:57	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/28/22 22:57</i>	<i>NWTPH-Dx</i>
DU-TRIP (A2D0663-42)				Matrix: Soil		Batch: 22D1071		PRO
Diesel	ND	9.91	25.0	mg/kg dry	1	04/28/22 23:18	NWTPH-Dx	
Oil	155	19.8	50.0	mg/kg dry	1	04/28/22 23:18	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/28/22 23:18</i>	<i>NWTPH-Dx</i>
EB-041322 (A2D0663-43)				Matrix: Water		Batch: 22D0975		
Diesel	ND	0.108	0.215	mg/L	1	04/26/22 23:58	NWTPH-Dx	
Oil	ND	0.215	0.430	mg/L	1	04/26/22 23:58	NWTPH-Dx	
<i>Surrogate: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/26/22 23:58</i>	<i>NWTPH-Dx</i>

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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	3.11	6.22	mg/kg dry	50	04/20/22 15:05	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 15:05</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>96 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 15:05</i>	<i>NWTPH-Gx (MS)</i>	
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	4.32	8.65	mg/kg dry	50	04/20/22 15:59	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 15:59</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 15:59</i>	<i>NWTPH-Gx (MS)</i>	
SB02-3-7 (A2D0663-03)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	4.85	9.69	mg/kg dry	50	04/20/22 16:26	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 16:26</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 16:26</i>	<i>NWTPH-Gx (MS)</i>	
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	3.21	6.42	mg/kg dry	50	04/20/22 16:53	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 16:53</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 16:53</i>	<i>NWTPH-Gx (MS)</i>	
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	4.44	8.88	mg/kg dry	50	04/20/22 17:19	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 17:19</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 17:19</i>	<i>NWTPH-Gx (MS)</i>	
SB04-0-3 (A2D0663-06)				Matrix: Soil		Batch: 22D0773		V-16
Gasoline Range Organics	ND	4.21	8.43	mg/kg dry	50	04/20/22 17:46	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 17:46</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 17:46</i>	<i>NWTPH-Gx (MS)</i>	
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	3.68	7.36	mg/kg dry	50	04/20/22 18:13	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 18:13</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 18:13</i>	<i>NWTPH-Gx (MS)</i>	
SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D0773		

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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	3.66	7.31	mg/kg dry	50	04/20/22 18:40	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 18:40</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 18:40</i>	<i>NWTPH-Gx (MS)</i>	
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	2.44	4.87	mg/kg dry	50	04/20/22 19:34	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 19:34</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>96 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 19:34</i>	<i>NWTPH-Gx (MS)</i>	
SB07-0.5-3 (A2D0663-10)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	2.71	5.42	mg/kg dry	50	04/20/22 20:01	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 20:01</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 20:01</i>	<i>NWTPH-Gx (MS)</i>	
SB07-3-6 (A2D0663-11)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	4.63	9.26	mg/kg dry	50	04/20/22 20:27	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 20:27</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 20:27</i>	<i>NWTPH-Gx (MS)</i>	
SB08-0-3 (A2D0663-12)				Matrix: Soil		Batch: 22D0773		
Gasoline Range Organics	ND	2.98	5.95	mg/kg dry	50	04/20/22 20:54	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 20:54</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 20:54</i>	<i>NWTPH-Gx (MS)</i>	
SB-1 (A2D0663-13RE1)				Matrix: Water		Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 16:22	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 16:22</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 16:22</i>	<i>NWTPH-Gx (MS)</i>	
SB-2 (A2D0663-14RE1)				Matrix: Water		Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 16:44	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 16:44</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 16:44</i>	<i>NWTPH-Gx (MS)</i>	
SB-3 (A2D0663-15RE1)				Matrix: Water		Batch: 22D0770		

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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-3 (A2D0663-15RE1)			Matrix: Water			Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 17:07	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 108 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 17:07</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 17:07</i>	<i>NWTPH-Gx (MS)</i>
SB-4 (A2D0663-16RE1)			Matrix: Water			Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 17:29	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 17:29</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 17:29</i>	<i>NWTPH-Gx (MS)</i>
SB-5 (A2D0663-17RE1)			Matrix: Water			Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 17:52	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 17:52</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 17:52</i>	<i>NWTPH-Gx (MS)</i>
SB-6 (A2D0663-18RE1)			Matrix: Water			Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 18:14	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 18:14</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 18:14</i>	<i>NWTPH-Gx (MS)</i>
SB-7 (A2D0663-19RE1)			Matrix: Water			Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 18:37	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 18:37</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 18:37</i>	<i>NWTPH-Gx (MS)</i>
SB-8 (A2D0663-20RE1)			Matrix: Water			Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 18:59	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 18:59</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 18:59</i>	<i>NWTPH-Gx (MS)</i>
DUP-01 (A2D0663-21)			Matrix: Soil			Batch: 22D0773		V-16
Gasoline Range Organics	ND	4.46	8.92	mg/kg dry	50	04/20/22 21:21	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 21:21</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 21:21</i>	<i>NWTPH-Gx (MS)</i>
DUP-X (A2D0663-22RE1)			Matrix: Water			Batch: 22D0770		

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 19:44	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 109 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 19:44</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 19:44</i>	<i>NWTPH-Gx (MS)</i>	
DU-01 (A2D0663-23)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	4.01	8.03	mg/kg dry	50	04/21/22 16:14	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 16:14</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 16:14</i>	<i>NWTPH-Gx (MS)</i>	
DU-02 (A2D0663-25)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	3.12	6.25	mg/kg dry	50	04/21/22 17:08	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 17:08</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 17:08</i>	<i>NWTPH-Gx (MS)</i>	
DU-03 (A2D0663-27)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	3.06	6.13	mg/kg dry	50	04/21/22 17:35	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 17:35</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 17:35</i>	<i>NWTPH-Gx (MS)</i>	
DU-04 (A2D0663-29)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	3.30	6.60	mg/kg dry	50	04/21/22 18:02	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 18:02</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 18:02</i>	<i>NWTPH-Gx (MS)</i>	
DU-05 (A2D0663-31)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	2.94	2.65	5.30	mg/kg dry	50	04/21/22 18:28	NWTPH-Gx (MS)	J
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 18:28</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 18:28</i>	<i>NWTPH-Gx (MS)</i>	
DU-06 (A2D0663-33)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	3.24	6.48	mg/kg dry	50	04/21/22 18:55	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 18:55</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 18:55</i>	<i>NWTPH-Gx (MS)</i>	
DU-07 (A2D0663-35)				Matrix: Soil		Batch: 22D0831		

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-07 (A2D0663-35)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	4.45	8.90	mg/kg dry	50	04/21/22 19:49	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 19:49</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 19:49</i>	<i>NWTPH-Gx (MS)</i>	
DU-08 (A2D0663-37)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	3.29	6.59	mg/kg dry	50	04/21/22 20:16	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 20:16</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 20:16</i>	<i>NWTPH-Gx (MS)</i>	
DU-DUP (A2D0663-39)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	4.62	9.24	mg/kg dry	50	04/21/22 20:43	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 20:43</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 20:43</i>	<i>NWTPH-Gx (MS)</i>	
DU-TRIP (A2D0663-41)				Matrix: Soil		Batch: 22D0831		
Gasoline Range Organics	ND	4.35	8.69	mg/kg dry	50	04/21/22 21:10	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/21/22 21:10</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>99 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/21/22 21:10</i>	<i>NWTPH-Gx (MS)</i>	
EB-041322 (A2D0663-43RE1)				Matrix: Water		Batch: 22D0770		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 20:07	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 20:07</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 20:07</i>	<i>NWTPH-Gx (MS)</i>	
TB-01 (A2D0663-44)				Matrix: Water		Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/19/22 23:49	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/19/22 23:49</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/19/22 23:49</i>	<i>NWTPH-Gx (MS)</i>	
TB-02 (A2D0663-45)				Matrix: Water		Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 00:11	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>	<i>1</i>	<i>04/20/22 00:11</i>	<i>NWTPH-Gx (MS)</i>	
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>	<i>1</i>	<i>04/20/22 00:11</i>	<i>NWTPH-Gx (MS)</i>	
TB-03 (A2D0663-46)				Matrix: Water		Batch: 22D0741		

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

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

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-03 (A2D0663-46)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 00:34	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 00:34</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 00:34</i>	<i>NWTPH-Gx (MS)</i>
TB-04 (A2D0663-47)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 00:56	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 00:56</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 00:56</i>	<i>NWTPH-Gx (MS)</i>
TB-05 (A2D0663-48)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 01:19	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 01:19</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 01:19</i>	<i>NWTPH-Gx (MS)</i>
TB-06 (A2D0663-49)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 01:41	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 108 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 01:41</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 01:41</i>	<i>NWTPH-Gx (MS)</i>
TB-07 (A2D0663-50)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 02:03	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 02:03</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 02:03</i>	<i>NWTPH-Gx (MS)</i>
TB-08 (A2D0663-51)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 02:25	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 02:25</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 02:25</i>	<i>NWTPH-Gx (MS)</i>
TB-09 (A2D0663-52)			Matrix: Water			Batch: 22D0741		
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/20/22 02:48	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 103 %</i>		<i>Limits: 50-150 %</i>		<i>1</i>	<i>04/20/22 02:48</i>	<i>NWTPH-Gx (MS)</i>
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>1</i>	<i>04/20/22 02:48</i>	<i>NWTPH-Gx (MS)</i>

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D0773		
Acetone	ND	1240	1240	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Acrylonitrile	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Benzene	ND	6.22	12.4	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Bromobenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Bromochloromethane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Bromodichloromethane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Bromoform	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Bromomethane	ND	622	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
2-Butanone (MEK)	ND	311	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
n-Butylbenzene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
sec-Butylbenzene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
tert-Butylbenzene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Carbon disulfide	ND	311	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Carbon tetrachloride	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Chlorobenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Chloroethane	ND	311	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Chloroform	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Chloromethane	ND	155	311	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
2-Chlorotoluene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
4-Chlorotoluene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Dibromochloromethane	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	155	311	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Dibromomethane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2-Dichlorobenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,3-Dichlorobenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,4-Dichlorobenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Dichlorodifluoromethane	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1-Dichloroethane	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1-Dichloroethene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
cis-1,2-Dichloroethene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
trans-1,2-Dichloroethene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	

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Philip Nerenberg, Lab Director



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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D0773		
1,2-Dichloropropane	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,3-Dichloropropane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
2,2-Dichloropropane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1-Dichloropropene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
cis-1,3-Dichloropropene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
trans-1,3-Dichloropropene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Ethylbenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Hexachlorobutadiene	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
2-Hexanone	ND	311	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Isopropylbenzene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
4-Isopropyltoluene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Methylene chloride	ND	311	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
4-Methyl-2-pentanone (MIBK)	ND	311	622	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Naphthalene	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
n-Propylbenzene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Styrene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1,1,2,2-Tetrachloroethane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Tetrachloroethene (PCE)	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Toluene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2,3-Trichlorobenzene	ND	155	311	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2,4-Trichlorobenzene	ND	155	311	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1,1-Trichloroethane	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,1,2-Trichloroethane	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Trichloroethene (TCE)	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Trichlorofluoromethane	ND	62.2	124	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2,3-Trichloropropane	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,2,4-Trimethylbenzene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
1,3,5-Trimethylbenzene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
Vinyl chloride	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
m,p-Xylene	ND	31.1	62.2	ug/kg dry	50	04/20/22 15:05	5035A/8260D	
o-Xylene	ND	15.5	31.1	ug/kg dry	50	04/20/22 15:05	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D0773		
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 15:05</i>	<i>5035A/8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 15:05</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/20/22 15:05</i>	<i>5035A/8260D</i>
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0773		
Acetone	ND	1730	1730	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Acrylonitrile	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Benzene	ND	8.65	17.3	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Bromobenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Bromochloromethane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Bromodichloromethane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Bromoform	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Bromomethane	ND	865	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
2-Butanone (MEK)	ND	432	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
n-Butylbenzene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
sec-Butylbenzene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
tert-Butylbenzene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Carbon disulfide	ND	432	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Carbon tetrachloride	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Chlorobenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Chloroethane	ND	432	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Chloroform	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Chloromethane	ND	216	432	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
2-Chlorotoluene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
4-Chlorotoluene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Dibromochloromethane	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	216	432	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Dibromomethane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2-Dichlorobenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,3-Dichlorobenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,4-Dichlorobenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Dichlorodifluoromethane	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1-Dichloroethane	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0773		
1,2-Dichloroethane (EDC)	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1-Dichloroethene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
cis-1,2-Dichloroethene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
trans-1,2-Dichloroethene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2-Dichloropropane	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,3-Dichloropropane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
2,2-Dichloropropane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1-Dichloropropene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
cis-1,3-Dichloropropene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
trans-1,3-Dichloropropene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Ethylbenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Hexachlorobutadiene	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
2-Hexanone	ND	432	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Isopropylbenzene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
4-Isopropyltoluene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Methylene chloride	ND	432	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
4-Methyl-2-pentanone (MIBK)	ND	432	865	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Naphthalene	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
n-Propylbenzene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Styrene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Tetrachloroethene (PCE)	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Toluene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2,3-Trichlorobenzene	ND	216	432	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2,4-Trichlorobenzene	ND	216	432	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1,1-Trichloroethane	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,1,2-Trichloroethane	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Trichloroethene (TCE)	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Trichlorofluoromethane	ND	86.5	173	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2,3-Trichloropropane	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
1,2,4-Trimethylbenzene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-0-3 (A2D0663-02)			Matrix: Soil		Batch: 22D0773			
1,3,5-Trimethylbenzene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
Vinyl chloride	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
m,p-Xylene	ND	43.2	86.5	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
o-Xylene	ND	21.6	43.2	ug/kg dry	50	04/20/22 15:59	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 15:59</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 15:59</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 15:59</i>	<i>5035A/8260D</i>	
SB02-3-7 (A2D0663-03)			Matrix: Soil		Batch: 22D0773			
Acetone	ND	1940	1940	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Acrylonitrile	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Benzene	ND	9.69	19.4	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Bromobenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Bromochloromethane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Bromodichloromethane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Bromoform	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Bromomethane	ND	969	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
2-Butanone (MEK)	ND	485	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
n-Butylbenzene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
sec-Butylbenzene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
tert-Butylbenzene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Carbon disulfide	ND	485	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Carbon tetrachloride	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Chlorobenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Chloroethane	ND	485	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Chloroform	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Chloromethane	ND	242	485	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
2-Chlorotoluene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
4-Chlorotoluene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Dibromochloromethane	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	242	485	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Dibromomethane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2-Dichlorobenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-3-7 (A2D0663-03)				Matrix: Soil		Batch: 22D0773		
1,3-Dichlorobenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,4-Dichlorobenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Dichlorodifluoromethane	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1-Dichloroethane	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1-Dichloroethene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
cis-1,2-Dichloroethene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
trans-1,2-Dichloroethene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2-Dichloropropane	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,3-Dichloropropane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
2,2-Dichloropropane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1-Dichloropropene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
cis-1,3-Dichloropropene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
trans-1,3-Dichloropropene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Ethylbenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Hexachlorobutadiene	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
2-Hexanone	ND	485	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Isopropylbenzene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
4-Isopropyltoluene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Methylene chloride	ND	485	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	485	969	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Naphthalene	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
n-Propylbenzene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Styrene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Tetrachloroethene (PCE)	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Toluene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2,3-Trichlorobenzene	ND	242	485	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2,4-Trichlorobenzene	ND	242	485	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1,1-Trichloroethane	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,1,2-Trichloroethane	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-3-7 (A2D0663-03)			Matrix: Soil			Batch: 22D0773		
Trichloroethene (TCE)	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Trichlorofluoromethane	ND	96.9	194	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2,3-Trichloropropane	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,2,4-Trimethylbenzene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
1,3,5-Trimethylbenzene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
Vinyl chloride	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
m,p-Xylene	ND	48.5	96.9	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
o-Xylene	ND	24.2	48.5	ug/kg dry	50	04/20/22 16:26	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 16:26</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 16:26</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 16:26</i>	<i>5035A/8260D</i>	
SB03-0.5-3 (A2D0663-04)			Matrix: Soil			Batch: 22D0773		
Acetone	ND	1280	1280	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Acrylonitrile	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Benzene	ND	6.42	12.8	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Bromobenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Bromochloromethane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Bromodichloromethane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Bromoform	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Bromomethane	ND	642	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
2-Butanone (MEK)	ND	321	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
n-Butylbenzene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
sec-Butylbenzene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
tert-Butylbenzene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Carbon disulfide	ND	321	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Carbon tetrachloride	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Chlorobenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Chloroethane	ND	321	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Chloroform	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Chloromethane	ND	161	321	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
2-Chlorotoluene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
4-Chlorotoluene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Dibromochloromethane	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D0773		
1,2-Dibromo-3-chloropropane	ND	161	321	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Dibromomethane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2-Dichlorobenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,3-Dichlorobenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,4-Dichlorobenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Dichlorodifluoromethane	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1-Dichloroethane	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1-Dichloroethene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
cis-1,2-Dichloroethene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
trans-1,2-Dichloroethene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2-Dichloropropane	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,3-Dichloropropane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
2,2-Dichloropropane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1-Dichloropropene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
cis-1,3-Dichloropropene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
trans-1,3-Dichloropropene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Ethylbenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Hexachlorobutadiene	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
2-Hexanone	ND	321	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Isopropylbenzene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
4-Isopropyltoluene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Methylene chloride	ND	321	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	321	642	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Naphthalene	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
n-Propylbenzene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Styrene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Tetrachloroethene (PCE)	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Toluene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D0773		
1,2,3-Trichlorobenzene	ND	161	321	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2,4-Trichlorobenzene	ND	161	321	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1,1-Trichloroethane	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,1,2-Trichloroethane	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Trichloroethene (TCE)	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Trichlorofluoromethane	ND	64.2	128	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2,3-Trichloropropane	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,2,4-Trimethylbenzene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
1,3,5-Trimethylbenzene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
Vinyl chloride	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
m,p-Xylene	ND	32.1	64.2	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
o-Xylene	ND	16.1	32.1	ug/kg dry	50	04/20/22 16:53	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 16:53</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 16:53</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 16:53</i>	<i>5035A/8260D</i>	

SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0773		
Acetone	ND	1780	1780	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Acrylonitrile	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Benzene	ND	8.88	17.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Bromobenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Bromochloromethane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Bromodichloromethane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Bromoform	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Bromomethane	ND	888	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
2-Butanone (MEK)	ND	444	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
n-Butylbenzene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
sec-Butylbenzene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
tert-Butylbenzene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Carbon disulfide	ND	444	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Carbon tetrachloride	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Chlorobenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Chloroethane	ND	444	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Chloroform	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0773		
Chloromethane	ND	222	444	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
2-Chlorotoluene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
4-Chlorotoluene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Dibromochloromethane	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	222	444	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Dibromomethane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2-Dichlorobenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,3-Dichlorobenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,4-Dichlorobenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Dichlorodifluoromethane	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,1-Dichloroethane	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,1-Dichloroethene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
cis-1,2-Dichloroethene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
trans-1,2-Dichloroethene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2-Dichloropropane	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,3-Dichloropropane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
2,2-Dichloropropane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,1-Dichloropropene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
cis-1,3-Dichloropropene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
trans-1,3-Dichloropropene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Ethylbenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Hexachlorobutadiene	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
2-Hexanone	ND	444	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Isopropylbenzene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
4-Isopropyltoluene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Methylene chloride	ND	444	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	444	888	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Naphthalene	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
n-Propylbenzene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Styrene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	

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ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0773		
1,1,1,2-Tetrachloroethane	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Tetrachloroethene (PCE)	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Toluene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2,3-Trichlorobenzene	ND	222	444	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2,4-Trichlorobenzene	ND	222	444	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,1,1-Trichloroethane	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,1,2-Trichloroethane	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Trichloroethene (TCE)	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Trichlorofluoromethane	ND	88.8	178	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2,3-Trichloropropane	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,2,4-Trimethylbenzene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
1,3,5-Trimethylbenzene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
Vinyl chloride	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
m,p-Xylene	ND	44.4	88.8	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
o-Xylene	ND	22.2	44.4	ug/kg dry	50	04/20/22 17:19	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 17:19</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 17:19</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 17:19</i>	<i>5035A/8260D</i>	

SB04-0-3 (A2D0663-06)				Matrix: Soil		Batch: 22D0773		V-16
Acetone	ND	1690	1690	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Acrylonitrile	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Benzene	ND	8.43	16.9	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Bromobenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Bromochloromethane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Bromodichloromethane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Bromoform	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Bromomethane	ND	843	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
2-Butanone (MEK)	ND	421	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
n-Butylbenzene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
sec-Butylbenzene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
tert-Butylbenzene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Carbon disulfide	ND	421	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB04-0-3 (A2D0663-06)				Matrix: Soil		Batch: 22D0773		V-16
Carbon tetrachloride	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Chlorobenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Chloroethane	ND	421	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Chloroform	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Chloromethane	ND	211	421	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
2-Chlorotoluene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
4-Chlorotoluene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Dibromochloromethane	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	211	421	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Dibromomethane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2-Dichlorobenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,3-Dichlorobenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,4-Dichlorobenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Dichlorodifluoromethane	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1-Dichloroethane	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1-Dichloroethene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
cis-1,2-Dichloroethene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
trans-1,2-Dichloroethene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2-Dichloropropane	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,3-Dichloropropane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
2,2-Dichloropropane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1-Dichloropropene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
cis-1,3-Dichloropropene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
trans-1,3-Dichloropropene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Ethylbenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Hexachlorobutadiene	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
2-Hexanone	ND	421	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Isopropylbenzene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
4-Isopropyltoluene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Methylene chloride	ND	421	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	421	843	ug/kg dry	50	04/20/22 17:46	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB04-0-3 (A2D0663-06)				Matrix: Soil		Batch: 22D0773		V-16
Methyl tert-butyl ether (MTBE)	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Naphthalene	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
n-Propylbenzene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Styrene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Tetrachloroethene (PCE)	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Toluene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2,3-Trichlorobenzene	ND	211	421	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2,4-Trichlorobenzene	ND	211	421	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1,1-Trichloroethane	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,1,2-Trichloroethane	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Trichloroethene (TCE)	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Trichlorofluoromethane	ND	84.3	169	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2,3-Trichloropropane	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,2,4-Trimethylbenzene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
1,3,5-Trimethylbenzene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
Vinyl chloride	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
m,p-Xylene	ND	42.1	84.3	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
o-Xylene	ND	21.1	42.1	ug/kg dry	50	04/20/22 17:46	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 17:46</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 17:46</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 17:46</i>	<i>5035A/8260D</i>	

SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0773	
Acetone	ND	1470	1470	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Acrylonitrile	ND	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Benzene	ND	7.36	14.7	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Bromobenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Bromochloromethane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Bromodichloromethane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Bromoform	ND	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D
Bromomethane	ND	736	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D
2-Butanone (MEK)	ND	368	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0773		
n-Butylbenzene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
sec-Butylbenzene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
tert-Butylbenzene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Carbon disulfide	ND	368	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Carbon tetrachloride	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Chlorobenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Chloroethane	ND	368	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Chloroform	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Chloromethane	ND	184	368	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
2-Chlorotoluene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
4-Chlorotoluene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Dibromochloromethane	ND	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	184	368	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Dibromomethane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2-Dichlorobenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,3-Dichlorobenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,4-Dichlorobenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Dichlorodifluoromethane	ND	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1-Dichloroethane	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1-Dichloroethene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
cis-1,2-Dichloroethene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
trans-1,2-Dichloroethene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2-Dichloropropane	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,3-Dichloropropane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
2,2-Dichloropropane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1-Dichloropropene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
cis-1,3-Dichloropropene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
trans-1,3-Dichloropropene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Ethylbenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Hexachlorobutadiene	ND	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
2-Hexanone	ND	368	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0773		
Isopropylbenzene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
4-Isopropyltoluene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Methylene chloride	ND	368	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	368	736	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Naphthalene	318	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
n-Propylbenzene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Styrene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Tetrachloroethene (PCE)	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Toluene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2,3-Trichlorobenzene	ND	184	368	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2,4-Trichlorobenzene	ND	184	368	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1,1-Trichloroethane	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,1,2-Trichloroethane	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Trichloroethene (TCE)	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Trichlorofluoromethane	ND	73.6	147	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2,3-Trichloropropane	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,2,4-Trimethylbenzene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
1,3,5-Trimethylbenzene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
Vinyl chloride	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
m,p-Xylene	ND	36.8	73.6	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
o-Xylene	ND	18.4	36.8	ug/kg dry	50	04/20/22 18:13	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 18:13</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 18:13</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 18:13</i>	<i>5035A/8260D</i>	

SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D0773		
Acetone	ND	1460	1460	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Acrylonitrile	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Benzene	ND	7.31	14.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Bromobenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Bromochloromethane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D0773		
Bromodichloromethane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Bromoform	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Bromomethane	ND	731	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
2-Butanone (MEK)	ND	366	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
n-Butylbenzene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
sec-Butylbenzene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
tert-Butylbenzene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Carbon disulfide	ND	366	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Carbon tetrachloride	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Chlorobenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Chloroethane	ND	366	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Chloroform	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Chloromethane	ND	183	366	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
2-Chlorotoluene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
4-Chlorotoluene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Dibromochloromethane	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	183	366	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Dibromomethane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2-Dichlorobenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,3-Dichlorobenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,4-Dichlorobenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Dichlorodifluoromethane	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1-Dichloroethane	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1-Dichloroethene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
cis-1,2-Dichloroethene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
trans-1,2-Dichloroethene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2-Dichloropropane	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,3-Dichloropropane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
2,2-Dichloropropane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1-Dichloropropene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
cis-1,3-Dichloropropene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D0773		
trans-1,3-Dichloropropene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Ethylbenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Hexachlorobutadiene	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
2-Hexanone	ND	366	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Isopropylbenzene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
4-Isopropyltoluene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Methylene chloride	ND	366	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	366	731	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Naphthalene	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
n-Propylbenzene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Styrene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Tetrachloroethene (PCE)	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Toluene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2,3-Trichlorobenzene	ND	183	366	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2,4-Trichlorobenzene	ND	183	366	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1,1-Trichloroethane	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,1,2-Trichloroethane	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Trichloroethene (TCE)	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Trichlorofluoromethane	ND	73.1	146	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2,3-Trichloropropane	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,2,4-Trimethylbenzene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
1,3,5-Trimethylbenzene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
Vinyl chloride	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
m,p-Xylene	ND	36.6	73.1	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
o-Xylene	ND	18.3	36.6	ug/kg dry	50	04/20/22 18:40	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 18:40</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 18:40</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 18:40</i>	<i>5035A/8260D</i>	

SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0773		
Acetone	ND	974	974	ug/kg dry	50	04/20/22 19:34	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0773		
Acrylonitrile	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Benzene	ND	4.87	9.74	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Bromobenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Bromochloromethane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Bromodichloromethane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Bromoform	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Bromomethane	ND	487	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
2-Butanone (MEK)	ND	244	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
n-Butylbenzene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
sec-Butylbenzene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
tert-Butylbenzene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Carbon disulfide	ND	244	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Carbon tetrachloride	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Chlorobenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Chloroethane	ND	244	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Chloroform	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Chloromethane	ND	122	244	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
2-Chlorotoluene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
4-Chlorotoluene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Dibromochloromethane	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	122	244	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Dibromomethane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2-Dichlorobenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,3-Dichlorobenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,4-Dichlorobenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Dichlorodifluoromethane	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1-Dichloroethane	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1-Dichloroethene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
cis-1,2-Dichloroethene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
trans-1,2-Dichloroethene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2-Dichloropropane	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0773		
1,3-Dichloropropane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
2,2-Dichloropropane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1-Dichloropropene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
cis-1,3-Dichloropropene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
trans-1,3-Dichloropropene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Ethylbenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Hexachlorobutadiene	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
2-Hexanone	ND	244	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Isopropylbenzene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
4-Isopropyltoluene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Methylene chloride	ND	244	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	244	487	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Naphthalene	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
n-Propylbenzene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Styrene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Tetrachloroethene (PCE)	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Toluene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2,3-Trichlorobenzene	ND	122	244	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2,4-Trichlorobenzene	ND	122	244	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1,1-Trichloroethane	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,1,2-Trichloroethane	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Trichloroethene (TCE)	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Trichlorofluoromethane	ND	48.7	97.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2,3-Trichloropropane	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,2,4-Trimethylbenzene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
1,3,5-Trimethylbenzene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
Vinyl chloride	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
m,p-Xylene	ND	24.4	48.7	ug/kg dry	50	04/20/22 19:34	5035A/8260D	
o-Xylene	ND	12.2	24.4	ug/kg dry	50	04/20/22 19:34	5035A/8260D	

Surrogate: 1,4-Difluorobenzene (Surr)

Recovery: 110 %

Limits: 80-120 %

1

04/20/22 19:34

5035A/8260D

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0773		
<i>Surrogate: Toluene-d8 (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 19:34</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/20/22 19:34</i>	<i>5035A/8260D</i>
SB07-0.5-3 (A2D0663-10)				Matrix: Soil		Batch: 22D0773		
Acetone	ND	1080	1080	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Acrylonitrile	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Benzene	ND	5.42	10.8	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Bromobenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Bromochloromethane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Bromodichloromethane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Bromoform	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Bromomethane	ND	542	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
2-Butanone (MEK)	ND	271	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
n-Butylbenzene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
sec-Butylbenzene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
tert-Butylbenzene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Carbon disulfide	ND	271	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Carbon tetrachloride	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Chlorobenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Chloroethane	ND	271	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Chloroform	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Chloromethane	ND	135	271	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
2-Chlorotoluene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
4-Chlorotoluene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Dibromochloromethane	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	135	271	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Dibromomethane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2-Dichlorobenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,3-Dichlorobenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,4-Dichlorobenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Dichlorodifluoromethane	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,1-Dichloroethane	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-0.5-3 (A2D0663-10)				Matrix: Soil		Batch: 22D0773		
1,1-Dichloroethene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
cis-1,2-Dichloroethene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
trans-1,2-Dichloroethene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2-Dichloropropane	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,3-Dichloropropane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
2,2-Dichloropropane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,1-Dichloropropene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
cis-1,3-Dichloropropene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
trans-1,3-Dichloropropene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Ethylbenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Hexachlorobutadiene	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
2-Hexanone	ND	271	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Isopropylbenzene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
4-Isopropyltoluene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Methylene chloride	ND	271	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
4-Methyl-2-pentanone (MIBK)	ND	271	542	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Naphthalene	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
n-Propylbenzene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Styrene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Tetrachloroethene (PCE)	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Toluene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2,3-Trichlorobenzene	ND	135	271	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2,4-Trichlorobenzene	ND	135	271	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,1,1-Trichloroethane	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,1,2-Trichloroethane	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Trichloroethene (TCE)	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
Trichlorofluoromethane	ND	54.2	108	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2,3-Trichloropropane	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,2,4-Trimethylbenzene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
1,3,5-Trimethylbenzene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-0.5-3 (A2D0663-10)			Matrix: Soil			Batch: 22D0773		
Vinyl chloride	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
m,p-Xylene	ND	27.1	54.2	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
o-Xylene	ND	13.5	27.1	ug/kg dry	50	04/20/22 20:01	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 20:01</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 20:01</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 20:01</i>	<i>5035A/8260D</i>	
SB07-3-6 (A2D0663-11)			Matrix: Soil			Batch: 22D0773		
Acetone	ND	1850	1850	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Acrylonitrile	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Benzene	ND	9.26	18.5	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Bromobenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Bromochloromethane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Bromodichloromethane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Bromoform	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Bromomethane	ND	926	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
2-Butanone (MEK)	ND	463	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
n-Butylbenzene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
sec-Butylbenzene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
tert-Butylbenzene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Carbon disulfide	ND	463	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Carbon tetrachloride	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Chlorobenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Chloroethane	ND	463	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Chloroform	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Chloromethane	ND	232	463	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
2-Chlorotoluene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
4-Chlorotoluene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Dibromochloromethane	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	232	463	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Dibromomethane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2-Dichlorobenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,3-Dichlorobenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-3-6 (A2D0663-11)				Matrix: Soil		Batch: 22D0773		
1,4-Dichlorobenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Dichlorodifluoromethane	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1-Dichloroethane	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1-Dichloroethene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
cis-1,2-Dichloroethene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
trans-1,2-Dichloroethene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2-Dichloropropane	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,3-Dichloropropane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
2,2-Dichloropropane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1-Dichloropropene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
cis-1,3-Dichloropropene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
trans-1,3-Dichloropropene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Ethylbenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Hexachlorobutadiene	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
2-Hexanone	ND	463	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Isopropylbenzene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
4-Isopropyltoluene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Methylene chloride	ND	463	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	463	926	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Naphthalene	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
n-Propylbenzene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Styrene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1,1,2,2-Tetrachloroethane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Tetrachloroethene (PCE)	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Toluene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2,3-Trichlorobenzene	ND	232	463	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2,4-Trichlorobenzene	ND	232	463	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1,1-Trichloroethane	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,1,2-Trichloroethane	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Trichloroethene (TCE)	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-3-6 (A2D0663-11)			Matrix: Soil		Batch: 22D0773			
Trichlorofluoromethane	ND	92.6	185	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2,3-Trichloropropane	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,2,4-Trimethylbenzene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
1,3,5-Trimethylbenzene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
Vinyl chloride	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
m,p-Xylene	ND	46.3	92.6	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
o-Xylene	ND	23.2	46.3	ug/kg dry	50	04/20/22 20:27	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 112 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 20:27</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 20:27</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 20:27</i>	<i>5035A/8260D</i>	
SB08-0-3 (A2D0663-12)			Matrix: Soil		Batch: 22D0773			
Acetone	ND	1190	1190	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Acrylonitrile	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Benzene	ND	5.95	11.9	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Bromobenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Bromochloromethane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Bromodichloromethane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Bromoform	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Bromomethane	ND	595	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
2-Butanone (MEK)	ND	298	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
n-Butylbenzene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
sec-Butylbenzene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
tert-Butylbenzene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Carbon disulfide	ND	298	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Carbon tetrachloride	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Chlorobenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Chloroethane	ND	298	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Chloroform	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Chloromethane	ND	149	298	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
2-Chlorotoluene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
4-Chlorotoluene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Dibromochloromethane	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	149	298	ug/kg dry	50	04/20/22 20:54	5035A/8260D	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB08-0-3 (A2D0663-12)				Matrix: Soil		Batch: 22D0773		
1,2-Dibromoethane (EDB)	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Dibromomethane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2-Dichlorobenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,3-Dichlorobenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,4-Dichlorobenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Dichlorodifluoromethane	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1-Dichloroethane	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1-Dichloroethene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
cis-1,2-Dichloroethene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
trans-1,2-Dichloroethene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2-Dichloropropane	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,3-Dichloropropane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
2,2-Dichloropropane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1-Dichloropropene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
cis-1,3-Dichloropropene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
trans-1,3-Dichloropropene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Ethylbenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Hexachlorobutadiene	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
2-Hexanone	ND	298	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Isopropylbenzene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
4-Isopropyltoluene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Methylene chloride	ND	298	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	298	595	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Naphthalene	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
n-Propylbenzene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Styrene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Tetrachloroethene (PCE)	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Toluene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2,3-Trichlorobenzene	ND	149	298	ug/kg dry	50	04/20/22 20:54	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB08-0-3 (A2D0663-12)				Matrix: Soil		Batch: 22D0773		
1,2,4-Trichlorobenzene	ND	149	298	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1,1-Trichloroethane	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,1,2-Trichloroethane	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Trichloroethene (TCE)	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Trichlorofluoromethane	ND	59.5	119	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2,3-Trichloropropane	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,2,4-Trimethylbenzene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
1,3,5-Trimethylbenzene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
Vinyl chloride	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
m,p-Xylene	ND	29.8	59.5	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
o-Xylene	ND	14.9	29.8	ug/kg dry	50	04/20/22 20:54	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 20:54</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 20:54</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 20:54</i>	<i>5035A/8260D</i>	

SB-1 (A2D0663-13RE1)				Matrix: Water		Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 16:22	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 16:22	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 16:22	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 16:22	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 16:22	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 16:22	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-1 (A2D0663-13RE1)			Matrix: Water			Batch: 22D0770		
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 16:22	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 16:22	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 16:22	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 16:22	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 16:22	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-1 (A2D0663-13RE1)			Matrix: Water			Batch: 22D0770		
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 16:22	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 16:22	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 16:22	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 16:22</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 16:22</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 16:22</i>	<i>EPA 8260D</i>
SB-2 (A2D0663-14RE1)			Matrix: Water			Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 16:44	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 16:44	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 16:44	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 16:44	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 16:44	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-2 (A2D0663-14RE1)			Matrix: Water			Batch: 22D0770		
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 16:44	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 16:44	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 16:44	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 16:44	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 16:44	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-2 (A2D0663-14RE1)			Matrix: Water			Batch: 22D0770		
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 16:44	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 16:44	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 16:44	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 16:44	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 16:44</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 16:44</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 16:44</i>	<i>EPA 8260D</i>

SB-3 (A2D0663-15RE1)			Matrix: Water			Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 17:07	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 17:07	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 17:07	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 17:07	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-3 (A2D0663-15RE1)			Matrix: Water			Batch: 22D0770		
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 17:07	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 17:07	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 17:07	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 17:07	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-3 (A2D0663-15RE1)			Matrix: Water		Batch: 22D0770			
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 17:07	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 17:07	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 17:07	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 17:07	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 17:07	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 17:07	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 17:07</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 17:07</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 17:07</i>	<i>EPA 8260D</i>	

SB-4 (A2D0663-16RE1)			Matrix: Water		Batch: 22D0770			
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 17:29	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 17:29	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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 Tigard, OR 97223
 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-4 (A2D0663-16RE1)			Matrix: Water			Batch: 22D0770		
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 17:29	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 17:29	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 17:29	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 17:29	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-4 (A2D0663-16RE1)			Matrix: Water			Batch: 22D0770		
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 17:29	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 17:29	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 17:29	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 17:29	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 17:29	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 17:29	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 17:29	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 17:29	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 17:29</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 17:29</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 17:29</i>	<i>EPA 8260D</i>

SB-5 (A2D0663-17RE1)			Matrix: Water			Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 17:52	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 17:52	EPA 8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-5 (A2D0663-17RE1)			Matrix: Water			Batch: 22D0770		
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 17:52	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 17:52	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 17:52	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 17:52	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 17:52	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-5 (A2D0663-17RE1)			Matrix: Water			Batch: 22D0770		
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 17:52	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 17:52	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 17:52	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 17:52	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 17:52	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 17:52	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 17:52	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 17:52	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 17:52</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 17:52</i>	<i>EPA 8260D</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB-5 (A2D0663-17RE1)			Matrix: Water			Batch: 22D0770			
<i>Surrogate: 4-Bromofluorobenzene (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>		<i>04/20/22 17:52</i>	<i>EPA 8260D</i>
SB-6 (A2D0663-18RE1)			Matrix: Water			Batch: 22D0770			
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 18:14	EPA 8260D		
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 18:14	EPA 8260D		
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D		
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 18:14	EPA 8260D		
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 18:14	EPA 8260D		
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 18:14	EPA 8260D		
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D		
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 18:14	EPA 8260D		
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 18:14	EPA 8260D		
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D		
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D		
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D		
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D		
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D		
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D		
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D		
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-6 (A2D0663-18RE1)			Matrix: Water			Batch: 22D0770		
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 18:14	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 18:14	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 18:14	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 18:14	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 18:14	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 18:14	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-6 (A2D0663-18RE1)			Matrix: Water			Batch: 22D0770		
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 18:14	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 18:14	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 18:14</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 18:14</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 18:14</i>	<i>EPA 8260D</i>
SB-7 (A2D0663-19RE1)			Matrix: Water			Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 18:37	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 18:37	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 18:37	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 18:37	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 18:37	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 18:37	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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 503-718-2323
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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-7 (A2D0663-19RE1)			Matrix: Water			Batch: 22D0770		
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 18:37	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 18:37	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 18:37	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 18:37	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 18:37	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 18:37	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-7 (A2D0663-19RE1)			Matrix: Water			Batch: 22D0770		
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 18:37	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 18:37	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 18:37	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 18:37</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 18:37</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 18:37</i>	<i>EPA 8260D</i>	
SB-8 (A2D0663-20RE1)			Matrix: Water			Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 18:59	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 18:59	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 18:59	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 18:59	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 18:59	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 18:59	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-8 (A2D0663-20RE1)			Matrix: Water			Batch: 22D0770		
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 18:59	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 18:59	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 18:59	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 18:59	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 18:59	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 18:59	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-8 (A2D0663-20RE1)			Matrix: Water			Batch: 22D0770		
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 18:59	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 18:59	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 18:59	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 18:59</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 18:59</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 18:59</i>	<i>EPA 8260D</i>

DUP-01 (A2D0663-21)			Matrix: Soil			Batch: 22D0773		V-16
Acetone	ND	1780	1780	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Acrylonitrile	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Benzene	ND	8.92	17.8	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Bromobenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Bromochloromethane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Bromodichloromethane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Bromoform	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Bromomethane	ND	892	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
2-Butanone (MEK)	ND	446	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
n-Butylbenzene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
sec-Butylbenzene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
tert-Butylbenzene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Carbon disulfide	ND	446	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Carbon tetrachloride	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Chlorobenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Chloroethane	ND	446	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Chloroform	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Chloromethane	ND	223	446	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
2-Chlorotoluene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-01 (A2D0663-21)				Matrix: Soil		Batch: 22D0773		V-16
4-Chlorotoluene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Dibromochloromethane	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	223	446	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Dibromomethane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2-Dichlorobenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,3-Dichlorobenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,4-Dichlorobenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Dichlorodifluoromethane	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1-Dichloroethane	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1-Dichloroethene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
cis-1,2-Dichloroethene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
trans-1,2-Dichloroethene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2-Dichloropropane	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,3-Dichloropropane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
2,2-Dichloropropane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1-Dichloropropene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
cis-1,3-Dichloropropene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
trans-1,3-Dichloropropene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Ethylbenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Hexachlorobutadiene	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
2-Hexanone	ND	446	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Isopropylbenzene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
4-Isopropyltoluene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Methylene chloride	ND	446	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	446	892	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Naphthalene	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
n-Propylbenzene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Styrene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-01 (A2D0663-21)				Matrix: Soil		Batch: 22D0773		V-16
Tetrachloroethene (PCE)	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Toluene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2,3-Trichlorobenzene	ND	223	446	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2,4-Trichlorobenzene	ND	223	446	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1,1-Trichloroethane	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,1,2-Trichloroethane	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Trichloroethene (TCE)	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Trichlorofluoromethane	ND	89.2	178	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2,3-Trichloropropane	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,2,4-Trimethylbenzene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
1,3,5-Trimethylbenzene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
Vinyl chloride	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
m,p-Xylene	ND	44.6	89.2	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
o-Xylene	ND	22.3	44.6	ug/kg dry	50	04/20/22 21:21	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 21:21</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 21:21</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/20/22 21:21</i>	<i>5035A/8260D</i>	

DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 19:44	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 19:44	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 19:44	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 19:44	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 19:44	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-X (A2D0663-22RE1)			Matrix: Water			Batch: 22D0770		
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 19:44	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 19:44	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 19:44	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 19:44	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 19:44	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 19:44	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0770		
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 19:44	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 19:44	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 19:44	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 19:44</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 19:44</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 19:44</i>	<i>EPA 8260D</i>	

DU-01 (A2D0663-23)				Matrix: Soil		Batch: 22D0831		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Acetone	ND	1610	1610	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Acrylonitrile	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Benzene	ND	8.03	16.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Bromobenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Bromochloromethane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Bromodichloromethane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Bromoform	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Bromomethane	ND	803	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
2-Butanone (MEK)	ND	401	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
n-Butylbenzene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
sec-Butylbenzene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-01 (A2D0663-23)				Matrix: Soil		Batch: 22D0831		
tert-Butylbenzene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Carbon disulfide	ND	401	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Carbon tetrachloride	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Chlorobenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Chloroethane	ND	401	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Chloroform	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Chloromethane	ND	201	401	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
2-Chlorotoluene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
4-Chlorotoluene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Dibromochloromethane	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	201	401	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Dibromomethane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2-Dichlorobenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,3-Dichlorobenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,4-Dichlorobenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Dichlorodifluoromethane	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1-Dichloroethane	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1-Dichloroethene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
cis-1,2-Dichloroethene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
trans-1,2-Dichloroethene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2-Dichloropropane	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,3-Dichloropropane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
2,2-Dichloropropane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1-Dichloropropene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
cis-1,3-Dichloropropene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
trans-1,3-Dichloropropene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Ethylbenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Hexachlorobutadiene	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
2-Hexanone	ND	401	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Isopropylbenzene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
4-Isopropyltoluene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-01 (A2D0663-23)				Matrix: Soil		Batch: 22D0831		
Methylene chloride	ND	401	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	401	803	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Naphthalene	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
n-Propylbenzene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Styrene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Tetrachloroethene (PCE)	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Toluene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2,3-Trichlorobenzene	ND	201	401	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2,4-Trichlorobenzene	ND	201	401	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1,1-Trichloroethane	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,1,2-Trichloroethane	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Trichloroethene (TCE)	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Trichlorofluoromethane	ND	80.3	161	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2,3-Trichloropropane	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,2,4-Trimethylbenzene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
1,3,5-Trimethylbenzene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
Vinyl chloride	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
m,p-Xylene	ND	40.1	80.3	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
o-Xylene	ND	20.1	40.1	ug/kg dry	50	04/21/22 16:14	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/21/22 16:14</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/22 16:14</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/21/22 16:14</i>	<i>5035A/8260D</i>	

DU-02 (A2D0663-25)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1250	1250	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Acrylonitrile	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Benzene	ND	6.25	12.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Bromobenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Bromochloromethane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Bromodichloromethane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Bromoform	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-02 (A2D0663-25)				Matrix: Soil		Batch: 22D0831		
Bromomethane	ND	625	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
2-Butanone (MEK)	ND	312	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
n-Butylbenzene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
sec-Butylbenzene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
tert-Butylbenzene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Carbon disulfide	ND	312	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Carbon tetrachloride	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Chlorobenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Chloroethane	ND	312	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Chloroform	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Chloromethane	ND	156	312	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
2-Chlorotoluene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
4-Chlorotoluene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Dibromochloromethane	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	156	312	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Dibromomethane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2-Dichlorobenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,3-Dichlorobenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,4-Dichlorobenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Dichlorodifluoromethane	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1-Dichloroethane	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1-Dichloroethene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
cis-1,2-Dichloroethene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
trans-1,2-Dichloroethene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2-Dichloropropane	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,3-Dichloropropane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
2,2-Dichloropropane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1-Dichloropropene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
cis-1,3-Dichloropropene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
trans-1,3-Dichloropropene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Ethylbenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-02 (A2D0663-25)				Matrix: Soil		Batch: 22D0831		
Hexachlorobutadiene	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
2-Hexanone	ND	312	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Isopropylbenzene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
4-Isopropyltoluene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Methylene chloride	ND	312	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	312	625	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Naphthalene	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
n-Propylbenzene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Styrene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Tetrachloroethene (PCE)	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Toluene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2,3-Trichlorobenzene	ND	156	312	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2,4-Trichlorobenzene	ND	156	312	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1,1-Trichloroethane	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,1,2-Trichloroethane	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Trichloroethene (TCE)	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Trichlorofluoromethane	ND	62.5	125	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2,3-Trichloropropane	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,2,4-Trimethylbenzene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
1,3,5-Trimethylbenzene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
Vinyl chloride	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
m,p-Xylene	ND	31.2	62.5	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
o-Xylene	ND	15.6	31.2	ug/kg dry	50	04/21/22 17:08	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/21/22 17:08</i>	<i>5035A/8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/21/22 17:08</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>93 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/21/22 17:08</i>	<i>5035A/8260D</i>

DU-03 (A2D0663-27)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1230	1230	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Acrylonitrile	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Benzene	ND	6.13	12.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-03 (A2D0663-27)				Matrix: Soil		Batch: 22D0831		
Bromobenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Bromochloromethane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Bromodichloromethane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Bromoform	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Bromomethane	ND	61.3	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
2-Butanone (MEK)	ND	306	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
n-Butylbenzene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
sec-Butylbenzene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
tert-Butylbenzene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Carbon disulfide	ND	306	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Carbon tetrachloride	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Chlorobenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Chloroethane	ND	306	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Chloroform	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Chloromethane	ND	153	306	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
2-Chlorotoluene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
4-Chlorotoluene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Dibromochloromethane	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	153	306	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Dibromomethane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2-Dichlorobenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,3-Dichlorobenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,4-Dichlorobenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Dichlorodifluoromethane	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,1-Dichloroethane	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,1-Dichloroethene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
cis-1,2-Dichloroethene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
trans-1,2-Dichloroethene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2-Dichloropropane	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,3-Dichloropropane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
2,2-Dichloropropane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-03 (A2D0663-27)				Matrix: Soil		Batch: 22D0831		
1,1-Dichloropropene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
cis-1,3-Dichloropropene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
trans-1,3-Dichloropropene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Ethylbenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Hexachlorobutadiene	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
2-Hexanone	ND	306	613	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Isopropylbenzene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
4-Isopropyltoluene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Methylene chloride	ND	306	613	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	306	613	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Naphthalene	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
n-Propylbenzene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Styrene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Tetrachloroethene (PCE)	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Toluene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2,3-Trichlorobenzene	ND	153	306	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2,4-Trichlorobenzene	ND	153	306	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,1,1-Trichloroethane	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,1,2-Trichloroethane	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Trichloroethene (TCE)	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Trichlorofluoromethane	ND	61.3	123	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2,3-Trichloropropane	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,2,4-Trimethylbenzene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
1,3,5-Trimethylbenzene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
Vinyl chloride	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
m,p-Xylene	ND	30.6	61.3	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
o-Xylene	ND	15.3	30.6	ug/kg dry	50	04/21/22 17:35	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/21/22 17:35</i>	<i>5035A/8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/21/22 17:35</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/21/22 17:35</i>	<i>5035A/8260D</i>

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-29)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1320	1320	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Acrylonitrile	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Benzene	ND	6.60	13.2	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Bromobenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Bromochloromethane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Bromodichloromethane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Bromoform	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Bromomethane	ND	660	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
2-Butanone (MEK)	ND	330	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
n-Butylbenzene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
sec-Butylbenzene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
tert-Butylbenzene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Carbon disulfide	ND	330	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Carbon tetrachloride	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Chlorobenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Chloroethane	ND	330	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Chloroform	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Chloromethane	ND	165	330	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
2-Chlorotoluene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
4-Chlorotoluene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Dibromochloromethane	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	165	330	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Dibromomethane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2-Dichlorobenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,3-Dichlorobenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,4-Dichlorobenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Dichlorodifluoromethane	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1-Dichloroethane	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1-Dichloroethene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
cis-1,2-Dichloroethene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
trans-1,2-Dichloroethene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-29)				Matrix: Soil		Batch: 22D0831		
1,2-Dichloropropane	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,3-Dichloropropane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
2,2-Dichloropropane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1-Dichloropropene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
cis-1,3-Dichloropropene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
trans-1,3-Dichloropropene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Ethylbenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Hexachlorobutadiene	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
2-Hexanone	ND	330	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Isopropylbenzene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
4-Isopropyltoluene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Methylene chloride	ND	330	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
4-Methyl-2-pentanone (MIBK)	ND	330	660	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Naphthalene	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
n-Propylbenzene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Styrene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1,1,2,2-Tetrachloroethane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Tetrachloroethene (PCE)	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Toluene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2,3-Trichlorobenzene	ND	165	330	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2,4-Trichlorobenzene	ND	165	330	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1,1-Trichloroethane	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,1,2-Trichloroethane	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Trichloroethene (TCE)	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Trichlorofluoromethane	ND	66.0	132	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2,3-Trichloropropane	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,2,4-Trimethylbenzene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
1,3,5-Trimethylbenzene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
Vinyl chloride	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
m,p-Xylene	ND	33.0	66.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	
o-Xylene	ND	16.5	33.0	ug/kg dry	50	04/21/22 18:02	5035A/8260D	

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-29)				Matrix: Soil		Batch: 22D0831		
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/21/22 18:02</i>	<i>5035A/8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/21/22 18:02</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/21/22 18:02</i>	<i>5035A/8260D</i>
DU-05 (A2D0663-31)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1060	1060	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Acrylonitrile	ND	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Benzene	ND	5.30	10.6	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Bromobenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Bromochloromethane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Bromodichloromethane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Bromoform	ND	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Bromomethane	ND	530	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
2-Butanone (MEK)	ND	265	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
n-Butylbenzene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
sec-Butylbenzene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
tert-Butylbenzene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Carbon disulfide	ND	265	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Carbon tetrachloride	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Chlorobenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Chloroethane	ND	265	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Chloroform	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Chloromethane	ND	133	265	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
2-Chlorotoluene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
4-Chlorotoluene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Dibromochloromethane	ND	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	133	265	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Dibromomethane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2-Dichlorobenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,3-Dichlorobenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,4-Dichlorobenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Dichlorodifluoromethane	ND	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1-Dichloroethane	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-05 (A2D0663-31)				Matrix: Soil		Batch: 22D0831		
1,2-Dichloroethane (EDC)	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1-Dichloroethene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
cis-1,2-Dichloroethene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
trans-1,2-Dichloroethene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2-Dichloropropane	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,3-Dichloropropane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
2,2-Dichloropropane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1-Dichloropropene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
cis-1,3-Dichloropropene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
trans-1,3-Dichloropropene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Ethylbenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Hexachlorobutadiene	ND	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
2-Hexanone	ND	265	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Isopropylbenzene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
4-Isopropyltoluene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Methylene chloride	ND	265	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
4-Methyl-2-pentanone (MIBK)	ND	265	530	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Naphthalene	211	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
n-Propylbenzene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Styrene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Tetrachloroethene (PCE)	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Toluene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2,3-Trichlorobenzene	ND	133	265	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2,4-Trichlorobenzene	ND	133	265	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1,1-Trichloroethane	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,1,2-Trichloroethane	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Trichloroethene (TCE)	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Trichlorofluoromethane	ND	53.0	106	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2,3-Trichloropropane	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
1,2,4-Trimethylbenzene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	

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Philip Nerenberg, Lab Director



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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-05 (A2D0663-31)			Matrix: Soil			Batch: 22D0831		
1,3,5-Trimethylbenzene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
Vinyl chloride	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
m,p-Xylene	ND	26.5	53.0	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
o-Xylene	ND	13.3	26.5	ug/kg dry	50	04/21/22 18:28	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/21/22 18:28</i>	<i>5035A/8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/21/22 18:28</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/21/22 18:28</i>	<i>5035A/8260D</i>
DU-06 (A2D0663-33)			Matrix: Soil			Batch: 22D0831		
Acetone	ND	1300	1300	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Acrylonitrile	ND	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Benzene	ND	6.48	13.0	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Bromobenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Bromochloromethane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Bromodichloromethane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Bromoform	ND	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Bromomethane	ND	648	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
2-Butanone (MEK)	ND	324	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
n-Butylbenzene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
sec-Butylbenzene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
tert-Butylbenzene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Carbon disulfide	ND	324	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Carbon tetrachloride	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Chlorobenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Chloroethane	ND	324	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Chloroform	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Chloromethane	ND	162	324	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
2-Chlorotoluene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
4-Chlorotoluene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Dibromochloromethane	ND	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	162	324	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Dibromomethane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2-Dichlorobenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-06 (A2D0663-33)				Matrix: Soil		Batch: 22D0831		
1,3-Dichlorobenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,4-Dichlorobenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Dichlorodifluoromethane	ND	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1-Dichloroethane	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1-Dichloroethene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
cis-1,2-Dichloroethene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
trans-1,2-Dichloroethene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2-Dichloropropane	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,3-Dichloropropane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
2,2-Dichloropropane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1-Dichloropropene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
cis-1,3-Dichloropropene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
trans-1,3-Dichloropropene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Ethylbenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Hexachlorobutadiene	ND	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
2-Hexanone	ND	324	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Isopropylbenzene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
4-Isopropyltoluene	103	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Methylene chloride	ND	324	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	324	648	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Naphthalene	91.9	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	J
n-Propylbenzene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Styrene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Tetrachloroethene (PCE)	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Toluene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2,3-Trichlorobenzene	ND	162	324	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2,4-Trichlorobenzene	ND	162	324	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1,1-Trichloroethane	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,1,2-Trichloroethane	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-06 (A2D0663-33)				Matrix: Soil		Batch: 22D0831		
Trichloroethene (TCE)	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Trichlorofluoromethane	ND	64.8	130	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2,3-Trichloropropane	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,2,4-Trimethylbenzene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
1,3,5-Trimethylbenzene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
Vinyl chloride	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
m,p-Xylene	ND	32.4	64.8	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
o-Xylene	ND	16.2	32.4	ug/kg dry	50	04/21/22 18:55	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/21/22 18:55</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/22 18:55</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/21/22 18:55</i>	<i>5035A/8260D</i>	
DU-07 (A2D0663-35)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1780	1780	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Acrylonitrile	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Benzene	ND	8.90	17.8	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Bromobenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Bromochloromethane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Bromodichloromethane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Bromoform	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Bromomethane	ND	890	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
2-Butanone (MEK)	ND	445	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
n-Butylbenzene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
sec-Butylbenzene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
tert-Butylbenzene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Carbon disulfide	ND	445	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Carbon tetrachloride	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Chlorobenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Chloroethane	ND	445	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Chloroform	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Chloromethane	ND	222	445	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
2-Chlorotoluene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
4-Chlorotoluene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Dibromochloromethane	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-07 (A2D0663-35)				Matrix: Soil		Batch: 22D0831		
1,2-Dibromo-3-chloropropane	ND	222	445	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Dibromomethane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2-Dichlorobenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,3-Dichlorobenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,4-Dichlorobenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Dichlorodifluoromethane	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1-Dichloroethane	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1-Dichloroethene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
cis-1,2-Dichloroethene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
trans-1,2-Dichloroethene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2-Dichloropropane	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,3-Dichloropropane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
2,2-Dichloropropane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1-Dichloropropene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
cis-1,3-Dichloropropene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
trans-1,3-Dichloropropene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Ethylbenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Hexachlorobutadiene	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
2-Hexanone	ND	445	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Isopropylbenzene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
4-Isopropyltoluene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Methylene chloride	ND	445	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	445	890	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Naphthalene	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
n-Propylbenzene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Styrene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Tetrachloroethene (PCE)	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Toluene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-07 (A2D0663-35)				Matrix: Soil		Batch: 22D0831		
1,2,3-Trichlorobenzene	ND	222	445	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2,4-Trichlorobenzene	ND	222	445	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1,1-Trichloroethane	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,1,2-Trichloroethane	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Trichloroethene (TCE)	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Trichlorofluoromethane	ND	89.0	178	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2,3-Trichloropropane	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,2,4-Trimethylbenzene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
1,3,5-Trimethylbenzene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
Vinyl chloride	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
m,p-Xylene	ND	44.5	89.0	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
o-Xylene	ND	22.2	44.5	ug/kg dry	50	04/21/22 19:49	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/21/22 19:49</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/22 19:49</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/21/22 19:49</i>	<i>5035A/8260D</i>	

DU-08 (A2D0663-37)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1320	1320	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Acrylonitrile	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Benzene	ND	6.59	13.2	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Bromobenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Bromochloromethane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Bromodichloromethane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Bromoform	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Bromomethane	ND	659	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
2-Butanone (MEK)	ND	329	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
n-Butylbenzene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
sec-Butylbenzene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
tert-Butylbenzene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Carbon disulfide	ND	329	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Carbon tetrachloride	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Chlorobenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Chloroethane	ND	329	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Chloroform	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-08 (A2D0663-37)				Matrix: Soil		Batch: 22D0831		
Chloromethane	ND	165	329	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
2-Chlorotoluene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
4-Chlorotoluene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Dibromochloromethane	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	165	329	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Dibromomethane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2-Dichlorobenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,3-Dichlorobenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,4-Dichlorobenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Dichlorodifluoromethane	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,1-Dichloroethane	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,1-Dichloroethene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
cis-1,2-Dichloroethene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
trans-1,2-Dichloroethene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2-Dichloropropane	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,3-Dichloropropane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
2,2-Dichloropropane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,1-Dichloropropene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
cis-1,3-Dichloropropene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
trans-1,3-Dichloropropene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Ethylbenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Hexachlorobutadiene	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
2-Hexanone	ND	329	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Isopropylbenzene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
4-Isopropyltoluene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Methylene chloride	ND	329	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	329	659	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Naphthalene	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
n-Propylbenzene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Styrene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				Matrix: Soil				
				Batch: 22D0831				
1,1,1,2-Tetrachloroethane	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Tetrachloroethene (PCE)	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Toluene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2,3-Trichlorobenzene	ND	165	329	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2,4-Trichlorobenzene	ND	165	329	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,1,1-Trichloroethane	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,1,2-Trichloroethane	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Trichloroethene (TCE)	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Trichlorofluoromethane	ND	65.9	132	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2,3-Trichloropropane	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,2,4-Trimethylbenzene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
1,3,5-Trimethylbenzene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
Vinyl chloride	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
m,p-Xylene	ND	32.9	65.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
o-Xylene	ND	16.5	32.9	ug/kg dry	50	04/21/22 20:16	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/21/22 20:16</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/22 20:16</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/21/22 20:16</i>	<i>5035A/8260D</i>	

				Matrix: Soil				
				Batch: 22D0831				
Acetone	ND	1850	1850	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Acrylonitrile	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Benzene	18.1	9.24	18.5	ug/kg dry	50	04/21/22 20:43	5035A/8260D	J
Bromobenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Bromochloromethane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Bromodichloromethane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Bromoform	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Bromomethane	ND	924	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
2-Butanone (MEK)	ND	462	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
n-Butylbenzene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
sec-Butylbenzene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
tert-Butylbenzene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Carbon disulfide	ND	462	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-DUP (A2D0663-39)				Matrix: Soil		Batch: 22D0831		
Carbon tetrachloride	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Chlorobenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Chloroethane	ND	462	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Chloroform	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Chloromethane	ND	231	462	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
2-Chlorotoluene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
4-Chlorotoluene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Dibromochloromethane	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	231	462	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Dibromomethane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2-Dichlorobenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,3-Dichlorobenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,4-Dichlorobenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Dichlorodifluoromethane	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1-Dichloroethane	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1-Dichloroethene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
cis-1,2-Dichloroethene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
trans-1,2-Dichloroethene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2-Dichloropropane	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,3-Dichloropropane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
2,2-Dichloropropane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1-Dichloropropene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
cis-1,3-Dichloropropene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
trans-1,3-Dichloropropene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Ethylbenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Hexachlorobutadiene	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
2-Hexanone	ND	462	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Isopropylbenzene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
4-Isopropyltoluene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Methylene chloride	ND	462	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	462	924	ug/kg dry	50	04/21/22 20:43	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-DUP (A2D0663-39)				Matrix: Soil		Batch: 22D0831		
Methyl tert-butyl ether (MTBE)	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Naphthalene	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
n-Propylbenzene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Styrene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Tetrachloroethene (PCE)	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Toluene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2,3-Trichlorobenzene	ND	231	462	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2,4-Trichlorobenzene	ND	231	462	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1,1-Trichloroethane	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,1,2-Trichloroethane	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Trichloroethene (TCE)	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Trichlorofluoromethane	ND	92.4	185	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2,3-Trichloropropane	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,2,4-Trimethylbenzene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
1,3,5-Trimethylbenzene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
Vinyl chloride	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
m,p-Xylene	ND	46.2	92.4	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
o-Xylene	ND	23.1	46.2	ug/kg dry	50	04/21/22 20:43	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/21/22 20:43</i>	<i>5035A/8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/21/22 20:43</i>	<i>5035A/8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>	<i>1</i>	<i>04/21/22 20:43</i>	<i>5035A/8260D</i>	

DU-TRIP (A2D0663-41)				Matrix: Soil		Batch: 22D0831		
Acetone	ND	1740	1740	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Acrylonitrile	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Benzene	16.6	8.69	17.4	ug/kg dry	50	04/21/22 21:10	5035A/8260D	J
Bromobenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Bromochloromethane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Bromodichloromethane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Bromoform	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Bromomethane	ND	869	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
2-Butanone (MEK)	ND	435	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-TRIP (A2D0663-41)				Matrix: Soil		Batch: 22D0831		
n-Butylbenzene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
sec-Butylbenzene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
tert-Butylbenzene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Carbon disulfide	ND	435	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Carbon tetrachloride	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Chlorobenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Chloroethane	ND	435	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Chloroform	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Chloromethane	ND	217	435	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
2-Chlorotoluene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
4-Chlorotoluene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Dibromochloromethane	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2-Dibromo-3-chloropropane	ND	217	435	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2-Dibromoethane (EDB)	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Dibromomethane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2-Dichlorobenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,3-Dichlorobenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,4-Dichlorobenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Dichlorodifluoromethane	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1-Dichloroethane	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2-Dichloroethane (EDC)	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1-Dichloroethene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
cis-1,2-Dichloroethene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
trans-1,2-Dichloroethene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2-Dichloropropane	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,3-Dichloropropane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
2,2-Dichloropropane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1-Dichloropropene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
cis-1,3-Dichloropropene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
trans-1,3-Dichloropropene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Ethylbenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Hexachlorobutadiene	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
2-Hexanone	ND	435	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-TRIP (A2D0663-41)				Matrix: Soil		Batch: 22D0831		
Isopropylbenzene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
4-Isopropyltoluene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Methylene chloride	ND	435	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
4-Methyl-2-pentanone (MiBK)	ND	435	869	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Methyl tert-butyl ether (MTBE)	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Naphthalene	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
n-Propylbenzene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Styrene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1,1,2-Tetrachloroethane	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1,2,2-Tetrachloroethane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Tetrachloroethene (PCE)	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Toluene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2,3-Trichlorobenzene	ND	217	435	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2,4-Trichlorobenzene	ND	217	435	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1,1-Trichloroethane	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,1,2-Trichloroethane	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Trichloroethene (TCE)	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Trichlorofluoromethane	ND	86.9	174	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2,3-Trichloropropane	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,2,4-Trimethylbenzene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
1,3,5-Trimethylbenzene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
Vinyl chloride	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
m,p-Xylene	ND	43.5	86.9	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
o-Xylene	ND	21.7	43.5	ug/kg dry	50	04/21/22 21:10	5035A/8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/21/22 21:10</i>	<i>5035A/8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/21/22 21:10</i>	<i>5035A/8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>79-120 %</i>		<i>1</i>	<i>04/21/22 21:10</i>	<i>5035A/8260D</i>

EB-041322 (A2D0663-43RE1)				Matrix: Water		Batch: 22D0770		
Acetone	ND	10.0	20.0	ug/L	1	04/20/22 20:07	EPA 8260D	
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 20:07	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB-041322 (A2D0663-43RE1)			Matrix: Water			Batch: 22D0770		
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 20:07	EPA 8260D	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	04/20/22 20:07	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 20:07	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 20:07	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB-041322 (A2D0663-43RE1)				Matrix: Water		Batch: 22D0770		
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 20:07	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 20:07	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 20:07	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 20:07	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 20:07	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 20:07	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 20:07	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 20:07	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 20:07</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 20:07</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 20:07</i>	<i>EPA 8260D</i>	

TB-01 (A2D0663-44)				Matrix: Water		Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/19/22 23:49	EPA 8260D	ICV-02

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-01 (A2D0663-44)			Matrix: Water			Batch: 22D0741		
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/19/22 23:49	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/19/22 23:49	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/19/22 23:49	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/19/22 23:49	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/19/22 23:49	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 22D0741		
TB-01 (A2D0663-44)								
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/19/22 23:49	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/19/22 23:49	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/19/22 23:49	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/19/22 23:49	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/19/22 23:49	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/19/22 23:49	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/19/22 23:49	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/19/22 23:49	EPA 8260D	

Surrogate: 1,4-Difluorobenzene (Surr) Recovery: 106 % Limits: 80-120 % 1 04/19/22 23:49 EPA 8260D

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 22D0741		
<i>Surrogate: Toluene-d8 (Surr)</i>			<i>Recovery: 98 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/19/22 23:49</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>98 %</i>	<i>80-120 %</i>	<i>1</i>	<i>04/19/22 23:49</i>	<i>EPA 8260D</i>	
			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 00:11	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 00:11	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 00:11	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 00:11	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 00:11	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 00:11	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-02 (A2D0663-45)			Matrix: Water			Batch: 22D0741		
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 00:11	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 00:11	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 00:11	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 00:11	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 00:11	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-02 (A2D0663-45)			Matrix: Water			Batch: 22D0741		
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 00:11	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 00:11	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 00:11	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 00:11</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 00:11</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 00:11</i>	<i>EPA 8260D</i>
TB-03 (A2D0663-46)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 00:34	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 00:34	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 00:34	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 00:34	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 00:34	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 00:34	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-03 (A2D0663-46)			Matrix: Water			Batch: 22D0741		
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 00:34	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 00:34	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 00:34	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 00:34	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 00:34	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-03 (A2D0663-46)			Matrix: Water			Batch: 22D0741		
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 00:34	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 00:34	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 00:34	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 00:34</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 00:34</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 00:34</i>	<i>EPA 8260D</i>
TB-04 (A2D0663-47)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 00:56	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 00:56	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 00:56	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 00:56	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 00:56	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 00:56	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 00:56	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-04 (A2D0663-47)			Matrix: Water			Batch: 22D0741		
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 00:56	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 00:56	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 00:56	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 00:56	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 00:56	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 00:56	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-04 (A2D0663-47)			Matrix: Water			Batch: 22D0741		
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 00:56	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 00:56	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 00:56	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 00:56</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 00:56</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 00:56</i>	<i>EPA 8260D</i>

TB-05 (A2D0663-48)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 01:19	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 01:19	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 01:19	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 01:19	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 01:19	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 01:19	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-05 (A2D0663-48)			Matrix: Water			Batch: 22D0741		
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 01:19	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 01:19	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 01:19	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 01:19	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 01:19	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-05 (A2D0663-48)			Matrix: Water			Batch: 22D0741		
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 01:19	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 01:19	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 01:19	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 01:19</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 01:19</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>	<i>1</i>	<i>04/20/22 01:19</i>	<i>EPA 8260D</i>	

TB-06 (A2D0663-49)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 01:41	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 01:41	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 01:41	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 01:41	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 01:41	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-06 (A2D0663-49)			Matrix: Water			Batch: 22D0741		
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 01:41	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 01:41	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 01:41	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 01:41	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 01:41	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

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

Project: **Ko' Kuel Wharf**
Project Number: **185751418**
Project Manager: **Graeme Taylor**

Report ID:
A2D0663 - 05 17 22 1412

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-06 (A2D0663-49)			Matrix: Water			Batch: 22D0741		
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 01:41	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 01:41	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 01:41	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 01:41	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 01:41</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 01:41</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 01:41</i>	<i>EPA 8260D</i>

TB-07 (A2D0663-50)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 02:03	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 02:03	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 02:03	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 02:03	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-07 (A2D0663-50)			Matrix: Water			Batch: 22D0741		
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 02:03	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 02:03	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 02:03	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 02:03	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-07 (A2D0663-50)			Matrix: Water			Batch: 22D0741		
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 02:03	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 02:03	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 02:03	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 02:03	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 02:03	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 02:03	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 106 %</i>	<i>Limits: 80-120 %</i>	<i>1</i>	<i>04/20/22 02:03</i>	<i>EPA 8260D</i>	
<i>Toluene-d8 (Surr)</i>			<i>97 %</i>	<i>80-120 %</i>	<i>1</i>	<i>04/20/22 02:03</i>	<i>EPA 8260D</i>	
<i>4-Bromofluorobenzene (Surr)</i>			<i>99 %</i>	<i>80-120 %</i>	<i>1</i>	<i>04/20/22 02:03</i>	<i>EPA 8260D</i>	

TB-08 (A2D0663-51)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 02:25	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 02:25	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-08 (A2D0663-51)			Matrix: Water			Batch: 22D0741		
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 02:25	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 02:25	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 02:25	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 02:25	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-08 (A2D0663-51)			Matrix: Water			Batch: 22D0741		
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 02:25	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 02:25	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 02:25	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	04/20/22 02:25	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 02:25	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 02:25	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 02:25	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 02:25	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 02:25</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 02:25</i>	<i>EPA 8260D</i>
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 02:25</i>	<i>EPA 8260D</i>

TB-09 (A2D0663-52)			Matrix: Water			Batch: 22D0741		
Acetone	ND	20.0	20.0	ug/L	1	04/20/22 02:48	EPA 8260D	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	04/20/22 02:48	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-09 (A2D0663-52)			Matrix: Water			Batch: 22D0741		
Benzene	ND	0.100	0.200	ug/L	1	04/20/22 02:48	EPA 8260D	
Bromobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Bromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Bromoform	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Bromomethane	ND	5.00	5.00	ug/L	1	04/20/22 02:48	EPA 8260D	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	04/20/22 02:48	EPA 8260D	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Carbon disulfide	ND	5.00	10.0	ug/L	1	04/20/22 02:48	EPA 8260D	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Chlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Chloroethane	ND	5.00	5.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Chloroform	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Chloromethane	ND	2.50	5.00	ug/L	1	04/20/22 02:48	EPA 8260D	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Dibromomethane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 22D0741		
TB-09 (A2D0663-52)								
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Ethylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	04/20/22 02:48	EPA 8260D	
2-Hexanone	ND	10.0	10.0	ug/L	1	04/20/22 02:48	EPA 8260D	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Methylene chloride	ND	5.00	10.0	ug/L	1	04/20/22 02:48	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	5.00	10.0	ug/L	1	04/20/22 02:48	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Naphthalene	ND	1.00	2.00	ug/L	1	04/20/22 02:48	EPA 8260D	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Styrene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
Toluene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
Vinyl chloride	ND	0.200	0.400	ug/L	1	04/20/22 02:48	EPA 8260D	
m,p-Xylene	ND	0.500	1.00	ug/L	1	04/20/22 02:48	EPA 8260D	
o-Xylene	ND	0.250	0.500	ug/L	1	04/20/22 02:48	EPA 8260D	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 02:48</i>	<i>EPA 8260D</i>
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>1</i>	<i>04/20/22 02:48</i>	<i>EPA 8260D</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
TB-09 (A2D0663-52)				Matrix: Water		Batch: 22D0741		
<i>Surrogate: 4-Bromofluorobenzene (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 80-120 %</i>		<i>1</i>	<i>04/20/22 02:48</i>	<i>EPA 8260D</i>

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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1016	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1221	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1232	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1242	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1248	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1254	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1260	ND	5.79	11.6	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 08:22</i>	<i>EPA 8082A</i>
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1016	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1221	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1232	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1242	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1248	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1254	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1260	ND	6.41	12.8	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 08:57</i>	<i>EPA 8082A</i>
SB02-3-7 (A2D0663-03)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1016	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1221	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1232	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1242	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1248	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1254	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1260	ND	6.96	13.9	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 09:33</i>	<i>EPA 8082A</i>
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1016	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1221	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1232	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1242	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1248	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1254	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1260	ND	5.37	10.7	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 115 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 10:08</i>	<i>EPA 8082A</i>
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1016	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1221	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1232	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1242	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1248	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1254	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1260	ND	5.57	11.1	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 10:44</i>	<i>EPA 8082A</i>
SB04-0-3 (A2D0663-06)				Matrix: Soil		Batch: 22D1069		C-07
Aroclor 1016	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1221	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1232	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1242	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1248	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1254	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1260	ND	6.82	13.6	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 81 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 11:19</i>	<i>EPA 8082A</i>
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1221	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1232	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1242	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1248	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1254	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1260	ND	6.55	13.1	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 11:25</i>	<i>EPA 8082A</i>
SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1221	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1232	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1242	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1248	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1254	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1260	ND	6.21	12.4	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 86 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 12:01</i>	<i>EPA 8082A</i>
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
Aroclor 1221	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
Aroclor 1232	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
Aroclor 1242	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
Aroclor 1248	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
Aroclor 1254	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
Aroclor 1260	ND	5.53	11.1	ug/kg dry	1	04/28/22 12:36	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 12:36</i>	<i>EPA 8082A</i>
SB07-0.5-3 (A2D0663-10)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
Aroclor 1221	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
Aroclor 1232	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
Aroclor 1242	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
Aroclor 1248	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
Aroclor 1254	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
Aroclor 1260	ND	4.94	9.88	ug/kg dry	1	04/28/22 13:12	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 13:12</i>	<i>EPA 8082A</i>

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-3-6 (A2D0663-11)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
Aroclor 1221	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
Aroclor 1232	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
Aroclor 1242	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
Aroclor 1248	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
Aroclor 1254	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
Aroclor 1260	ND	7.72	15.4	ug/kg dry	1	04/28/22 13:48	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 13:48</i>	<i>EPA 8082A</i>
SB08-0-3 (A2D0663-12)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1221	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1232	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1242	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1248	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1254	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
Aroclor 1260	ND	5.86	11.7	ug/kg dry	1	04/28/22 11:25	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 11:25</i>	<i>EPA 8082A</i>
DUP-01 (A2D0663-21)				Matrix: Soil		Batch: 22D1025		C-07
Aroclor 1016	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1221	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1232	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1242	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1248	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1254	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
Aroclor 1260	ND	6.93	13.9	ug/kg dry	1	04/28/22 12:01	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 67 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>04/28/22 12:01</i>	<i>EPA 8082A</i>
DU-01 (A2D0663-24)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1221	ND	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1232	ND	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-01 (A2D0663-24)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1242	ND	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1248	ND	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1254	ND	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	
Aroclor 1260	6.43	4.70	9.40	ug/kg dry	1	05/02/22 08:22	EPA 8082A	J
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 08:22</i>	<i>EPA 8082A</i>
DU-02 (A2D0663-26)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1221	ND	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1232	ND	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1242	ND	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1248	ND	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	
Aroclor 1254	60.2	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	P-12
Aroclor 1260	11.9	5.04	10.1	ug/kg dry	1	05/02/22 08:57	EPA 8082A	P-12
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 08:57</i>	<i>EPA 8082A</i>
DU-03 (A2D0663-28)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1221	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1232	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1242	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1248	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1254	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
Aroclor 1260	ND	4.84	9.68	ug/kg dry	1	05/02/22 09:33	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 09:33</i>	<i>EPA 8082A</i>
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1221	ND	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1232	ND	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1242	ND	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1248	ND	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
Aroclor 1254	ND	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1260	27.2	4.62	9.25	ug/kg dry	1	05/02/22 10:08	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 60-125 %</i>	<i>1</i>	<i>05/02/22 10:08</i>	<i>EPA 8082A</i>	
DU-05 (A2D0663-32)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1221	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1232	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1242	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1248	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1254	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
Aroclor 1260	ND	4.68	9.36	ug/kg dry	1	05/02/22 10:44	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 60-125 %</i>	<i>1</i>	<i>05/02/22 10:44</i>	<i>EPA 8082A</i>	
DU-06 (A2D0663-34)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1221	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1232	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1242	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1248	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1254	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
Aroclor 1260	ND	4.92	9.85	ug/kg dry	1	05/02/22 11:19	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 60-125 %</i>	<i>1</i>	<i>05/02/22 11:19</i>	<i>EPA 8082A</i>	
DU-07 (A2D0663-36)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
Aroclor 1221	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
Aroclor 1232	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
Aroclor 1242	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
Aroclor 1248	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
Aroclor 1254	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
Aroclor 1260	ND	4.76	9.52	ug/kg dry	1	05/02/22 08:33	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 76 %</i>		<i>Limits: 60-125 %</i>	<i>1</i>	<i>05/02/22 08:33</i>	<i>EPA 8082A</i>	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-08 (A2D0663-38)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
Aroclor 1221	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
Aroclor 1232	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
Aroclor 1242	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
Aroclor 1248	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
Aroclor 1254	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
Aroclor 1260	ND	4.96	9.92	ug/kg dry	1	05/02/22 09:08	EPA 8082A	
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 09:08</i>	<i>EPA 8082A</i>
DU-DUP (A2D0663-40)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	
Aroclor 1221	ND	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	
Aroclor 1232	ND	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	
Aroclor 1242	ND	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	
Aroclor 1248	ND	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	
Aroclor 1254	ND	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	
Aroclor 1260	5.32	4.82	9.64	ug/kg dry	1	05/02/22 09:44	EPA 8082A	J
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 78 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 09:44</i>	<i>EPA 8082A</i>
DU-TRIP (A2D0663-42)				Matrix: Soil		Batch: 22D1069		C-07, PRO
Aroclor 1016	ND	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	
Aroclor 1221	ND	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	
Aroclor 1232	ND	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	
Aroclor 1242	ND	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	
Aroclor 1248	ND	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	
Aroclor 1254	ND	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	
Aroclor 1260	4.89	4.67	9.34	ug/kg dry	1	05/02/22 10:19	EPA 8082A	J
<i>Surrogate: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 76 %</i>		<i>Limits: 60-125 %</i>		<i>1</i>	<i>05/02/22 10:19</i>	<i>EPA 8082A</i>

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01RE1)				Matrix: Soil		Batch: 22D0861		
Acenaphthene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Acenaphthylene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Anthracene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Benz(a)anthracene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Benzo(a)pyrene	ND	2.36	4.73	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Benzo(b)fluoranthene	ND	2.36	4.73	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Benzo(k)fluoranthene	ND	2.36	4.73	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Benzo(g,h,i)perylene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Chrysene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Fluoranthene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Fluorene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
1-Methylnaphthalene	ND	3.15	6.30	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2-Methylnaphthalene	ND	3.15	6.30	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Naphthalene	ND	3.15	6.30	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Phenanthrene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Pyrene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Carbazole	ND	2.36	4.73	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Dibenzofuran	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2-Chlorophenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4-Chloro-3-methylphenol	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,4-Dichlorophenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,4-Dimethylphenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,4-Dinitrophenol	ND	39.3	78.8	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	39.3	78.8	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2-Methylphenol	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
3+4-Methylphenol(s)	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2-Nitrophenol	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4-Nitrophenol	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Pentachlorophenol (PCP)	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Phenol	ND	3.15	6.30	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01RE1)				Matrix: Soil		Batch: 22D0861		
2,3,5,6-Tetrachlorophenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,4,5-Trichlorophenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Nitrobenzene	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,4,6-Trichlorophenol	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	23.6	47.3	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Butyl benzyl phthalate	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Diethylphthalate	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Dimethylphthalate	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Di-n-butylphthalate	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Di-n-octyl phthalate	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
N-Nitrosodimethylamine	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
N-Nitrosodiphenylamine	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Hexachlorobenzene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Hexachlorobutadiene	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Hexachlorocyclopentadiene	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Hexachloroethane	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2-Chloronaphthalene	ND	1.57	3.15	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
1,2,4-Trichlorobenzene	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4-Bromophenyl phenyl ether	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Aniline	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4-Chloroaniline	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2-Nitroaniline	ND	31.5	63.0	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
3-Nitroaniline	ND	31.5	63.0	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
4-Nitroaniline	ND	31.5	63.0	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,4-Dinitrotoluene	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
2,6-Dinitrotoluene	ND	15.7	31.5	ug/kg dry	1	04/22/22 14:40	EPA 8270E	
Benzoic acid	ND	197	393	ug/kg dry	1	04/22/22 14:40	EPA 8270E	Q-42
Benzyl alcohol	ND	15.7	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB01-0.5-3 (A2D0663-01RE1)				Matrix: Soil		Batch: 22D0861			
Isophorone	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
Azobenzene (1,2-DPH)	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
Bis(2-Ethylhexyl) adipate	ND	39.3	78.8	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
3,3'-Dichlorobenzidine	ND	31.5	63.0	ug/kg dry	1	04/22/22 14:40	EPA 8270E	Q-52	
1,2-Dinitrobenzene	ND	39.3	78.8	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
1,3-Dinitrobenzene	ND	39.3	78.8	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
1,4-Dinitrobenzene	ND	39.3	78.8	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
Pyridine	ND	7.88	15.7	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
1,2-Dichlorobenzene	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
1,3-Dichlorobenzene	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
1,4-Dichlorobenzene	ND	3.93	7.88	ug/kg dry	1	04/22/22 14:40	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>		<i>82 %</i>	<i>Limits:</i>	<i>37-122 %</i>	<i>1</i>	<i>04/22/22 14:40</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>78 %</i>	<i>44-120 %</i>	<i>1</i>	<i>04/22/22 14:40</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>				<i>73 %</i>	<i>33-122 %</i>	<i>1</i>	<i>04/22/22 14:40</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>				<i>72 %</i>	<i>54-127 %</i>	<i>1</i>	<i>04/22/22 14:40</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>				<i>64 %</i>	<i>35-120 %</i>	<i>1</i>	<i>04/22/22 14:40</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>				<i>91 %</i>	<i>39-132 %</i>	<i>1</i>	<i>04/22/22 14:40</i>	<i>EPA 8270E</i>	
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0861			
Acenaphthene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Acenaphthylene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Anthracene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Benz(a)anthracene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Benzo(a)pyrene	11.5	10.4	20.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	J	
Benzo(b)fluoranthene	ND	10.4	20.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Benzo(k)fluoranthene	ND	10.4	20.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Benzo(g,h,i)perylene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Chrysene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Dibenz(a,h)anthracene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Fluoranthene	13.8	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	J	
Fluorene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
1-Methylnaphthalene	ND	13.9	27.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E		
2-Methylnaphthalene	ND	13.9	27.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0861		
Naphthalene	26.5	13.9	27.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	J
Phenanthrene	28.3	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Pyrene	13.3	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	J
Carbazole	ND	10.4	20.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Dibenzofuran	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2-Chlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4-Chloro-3-methylphenol	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,4-Dichlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,4-Dimethylphenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,4-Dinitrophenol	ND	174	348	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	174	348	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2-Methylphenol	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
3+4-Methylphenol(s)	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2-Nitrophenol	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4-Nitrophenol	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Pentachlorophenol (PCP)	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Phenol	ND	13.9	27.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,4,5-Trichlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Nitrobenzene	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,4,6-Trichlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	104	209	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Butyl benzyl phthalate	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Diethylphthalate	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Dimethylphthalate	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Di-n-butylphthalate	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Di-n-octyl phthalate	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
N-Nitrosodimethylamine	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
N-Nitrosodiphenylamine	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0861		
2,2'-Oxybis(1-Chloropropane)	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Hexachlorobenzene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Hexachlorobutadiene	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Hexachlorocyclopentadiene	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Hexachloroethane	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2-Chloronaphthalene	ND	6.94	13.9	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
1,2,4-Trichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4-Bromophenyl phenyl ether	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Aniline	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4-Chloroaniline	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2-Nitroaniline	ND	139	278	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
3-Nitroaniline	ND	139	278	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
4-Nitroaniline	ND	139	278	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,4-Dinitrotoluene	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
2,6-Dinitrotoluene	ND	69.4	139	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Benzoic acid	ND	871	1740	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Benzyl alcohol	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Isophorone	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Azobenzene (1,2-DPH)	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	174	348	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
3,3'-Dichlorobenzidine	ND	139	278	ug/kg dry	4	04/22/22 19:14	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	174	348	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
1,3-Dinitrobenzene	ND	174	348	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
1,4-Dinitrobenzene	ND	174	348	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
Pyridine	ND	34.8	69.4	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
1,2-Dichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
1,3-Dichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
1,4-Dichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 19:14	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>04/22/22 19:14</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>86 %</i>		<i>44-120 %</i>		<i>4</i>	<i>04/22/22 19:14</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>81 %</i>		<i>33-122 %</i>		<i>4</i>	<i>04/22/22 19:14</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>90 %</i>		<i>54-127 %</i>		<i>4</i>	<i>04/22/22 19:14</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>66 %</i>		<i>35-120 %</i>		<i>4</i>	<i>04/22/22 19:14</i>	<i>EPA 8270E</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB02-0-3 (A2D0663-02)			Matrix: Soil		Batch: 22D0861				
<i>Surrogate: 2,4,6-Tribromophenol (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 39-132 %</i>		<i>4</i>		<i>04/22/22 19:14</i>	<i>EPA 8270E</i>
SB02-3-7 (A2D0663-03RE1)			Matrix: Soil		Batch: 22D0861				R-04
Acenaphthene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Acenaphthylene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Anthracene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Benz(a)anthracene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Benzo(a)pyrene	ND	28.4	56.7	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Benzo(b)fluoranthene	ND	28.4	56.7	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Benzo(k)fluoranthene	ND	28.4	56.7	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Benzo(g,h,i)perylene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Chrysene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Dibenz(a,h)anthracene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Fluoranthene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Fluorene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
1-Methylnaphthalene	ND	37.9	75.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2-Methylnaphthalene	ND	37.9	75.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Naphthalene	ND	37.9	75.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Phenanthrene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Pyrene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Carbazole	ND	28.4	56.7	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Dibenzofuran	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2-Chlorophenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
4-Chloro-3-methylphenol	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2,4-Dichlorophenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2,4-Dimethylphenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2,4-Dinitrophenol	ND	472	946	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
4,6-Dinitro-2-methylphenol	ND	472	946	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2-Methylphenol	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
3+4-Methylphenol(s)	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
2-Nitrophenol	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
4-Nitrophenol	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E		
Pentachlorophenol (PCP)	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-3-7 (A2D0663-03RE1)				Matrix: Soil		Batch: 22D0861		R-04
Phenol	ND	37.9	75.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,4,5-Trichlorophenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Nitrobenzene	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,4,6-Trichlorophenol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	284	567	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Butyl benzyl phthalate	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Diethylphthalate	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Dimethylphthalate	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Di-n-butylphthalate	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Di-n-octyl phthalate	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
N-Nitrosodimethylamine	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
N-Nitrosodiphenylamine	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Hexachlorobenzene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Hexachlorobutadiene	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Hexachlorocyclopentadiene	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Hexachloroethane	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2-Chloronaphthalene	ND	18.9	37.9	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
1,2,4-Trichlorobenzene	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
4-Bromophenyl phenyl ether	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Aniline	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
4-Chloroaniline	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2-Nitroaniline	ND	379	756	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
3-Nitroaniline	ND	379	756	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
4-Nitroaniline	ND	379	756	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,4-Dinitrotoluene	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
2,6-Dinitrotoluene	ND	189	379	ug/kg dry	10	04/25/22 22:07	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB02-3-7 (A2D0663-03RE1)				Matrix: Soil		Batch: 22D0861		R-04
Benzoic acid	ND	2370	4720	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Benzyl alcohol	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Isophorone	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Azobenzene (1,2-DPH)	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	472	946	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
3,3'-Dichlorobenzidine	ND	379	756	ug/kg dry	10	04/25/22 22:07	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	472	946	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
1,3-Dinitrobenzene	ND	472	946	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
1,4-Dinitrobenzene	ND	472	946	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
Pyridine	ND	94.6	189	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
1,2-Dichlorobenzene	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
1,3-Dichlorobenzene	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
1,4-Dichlorobenzene	ND	47.2	94.6	ug/kg dry	10	04/25/22 22:07	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 82 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>04/25/22 22:07</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>76 %</i>		<i>44-120 %</i>	<i>10</i>	<i>04/25/22 22:07</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>68 %</i>		<i>33-122 %</i>	<i>10</i>	<i>04/25/22 22:07</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>86 %</i>		<i>54-127 %</i>	<i>10</i>	<i>04/25/22 22:07</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>68 %</i>		<i>35-120 %</i>	<i>10</i>	<i>04/25/22 22:07</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>92 %</i>		<i>39-132 %</i>	<i>10</i>	<i>04/25/22 22:07</i>	<i>EPA 8270E</i>	

SB03-0.5-3 (A2D0663-04RE1)				Matrix: Soil		Batch: 22D0861		
Acenaphthene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Acenaphthylene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Anthracene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Benz(a)anthracene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Benzo(a)pyrene	2.30	2.14	4.28	ug/kg dry	1	04/25/22 23:48	EPA 8270E	J
Benzo(b)fluoranthene	ND	2.14	4.28	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Benzo(k)fluoranthene	ND	2.14	4.28	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Benzo(g,h,i)perylene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Chrysene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Fluoranthene	2.79	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	J
Fluorene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04RE1)				Matrix: Soil		Batch: 22D0861		
1-Methylnaphthalene	ND	2.86	5.70	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2-Methylnaphthalene	ND	2.86	5.70	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Naphthalene	ND	2.86	5.70	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Phenanthrene	2.50	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	J
Pyrene	2.79	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	J
Carbazole	ND	2.14	4.28	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Dibenzofuran	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2-Chlorophenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4-Chloro-3-methylphenol	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,4-Dichlorophenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,4-Dimethylphenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,4-Dinitrophenol	ND	35.6	71.4	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	35.6	71.4	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2-Methylphenol	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
3+4-Methylphenol(s)	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2-Nitrophenol	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4-Nitrophenol	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Pentachlorophenol (PCP)	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Phenol	ND	2.86	5.70	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,4,5-Trichlorophenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Nitrobenzene	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,4,6-Trichlorophenol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	21.4	42.8	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Butyl benzyl phthalate	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Diethylphthalate	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Dimethylphthalate	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Di-n-butylphthalate	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Di-n-octyl phthalate	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
N-Nitrosodimethylamine	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
N-Nitrosodiphenylamine	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04RE1)				Matrix: Soil		Batch: 22D0861		
Bis(2-Chloroethoxy) methane	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Hexachlorobenzene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Hexachlorobutadiene	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Hexachlorocyclopentadiene	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Hexachloroethane	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2-Chloronaphthalene	ND	1.42	2.86	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
1,2,4-Trichlorobenzene	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4-Bromophenyl phenyl ether	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Aniline	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4-Chloroaniline	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2-Nitroaniline	ND	28.6	57.0	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
3-Nitroaniline	ND	28.6	57.0	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
4-Nitroaniline	ND	28.6	57.0	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,4-Dinitrotoluene	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
2,6-Dinitrotoluene	ND	14.2	28.6	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Benzoic acid	ND	179	356	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Benzyl alcohol	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Isophorone	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Azobenzene (1,2-DPH)	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	35.6	71.4	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
3,3'-Dichlorobenzidine	ND	28.6	57.0	ug/kg dry	1	04/25/22 23:48	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	35.6	71.4	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
1,3-Dinitrobenzene	ND	35.6	71.4	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
1,4-Dinitrobenzene	ND	35.6	71.4	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
Pyridine	ND	7.14	14.2	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
1,2-Dichlorobenzene	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
1,3-Dichlorobenzene	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
1,4-Dichlorobenzene	ND	3.56	7.14	ug/kg dry	1	04/25/22 23:48	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>04/25/22 23:48</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>87 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/25/22 23:48</i>	<i>EPA 8270E</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04RE1)				Matrix: Soil		Batch: 22D0861		
<i>Surrogate: Phenol-d6 (Surr)</i>			Recovery: 79 %	Limits: 33-122 %	1	04/25/22 23:48	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>			87 %	54-127 %	1	04/25/22 23:48	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>			76 %	35-120 %	1	04/25/22 23:48	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>			106 %	39-132 %	1	04/25/22 23:48	EPA 8270E	
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0861		R-04
Acenaphthene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Acenaphthylene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Anthracene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benz(a)anthracene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benzo(a)pyrene	ND	9.21	18.4	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benzo(b)fluoranthene	ND	9.21	18.4	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benzo(k)fluoranthene	ND	9.21	18.4	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benzo(g,h,i)perylene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Chrysene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Dibenz(a,h)anthracene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Fluoranthene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Fluorene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1-Methylnaphthalene	ND	12.3	24.5	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2-Methylnaphthalene	ND	12.3	24.5	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Naphthalene	ND	12.3	24.5	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Phenanthrene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Pyrene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Carbazole	ND	9.21	18.4	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Dibenzofuran	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2-Chlorophenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
4-Chloro-3-methylphenol	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,4-Dichlorophenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,4-Dimethylphenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,4-Dinitrophenol	ND	153	307	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	153	307	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2-Methylphenol	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
3+4-Methylphenol(s)	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0861		R-04
2-Nitrophenol	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
4-Nitrophenol	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Pentachlorophenol (PCP)	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Phenol	ND	12.3	24.5	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,4,5-Trichlorophenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Nitrobenzene	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,4,6-Trichlorophenol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	92.1	184	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Butyl benzyl phthalate	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Diethylphthalate	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Dimethylphthalate	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Di-n-butylphthalate	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Di-n-octyl phthalate	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
N-Nitrosodimethylamine	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
N-Nitrosodiphenylamine	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Hexachlorobenzene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Hexachlorobutadiene	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Hexachlorocyclopentadiene	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Hexachloroethane	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2-Chloronaphthalene	ND	6.13	12.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1,2,4-Trichlorobenzene	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
4-Bromophenyl phenyl ether	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Aniline	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
4-Chloroaniline	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2-Nitroaniline	ND	123	245	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
3-Nitroaniline	ND	123	245	ug/kg dry	4	04/22/22 20:22	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0861		R-04
4-Nitroaniline	ND	123	245	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,4-Dinitrotoluene	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
2,6-Dinitrotoluene	ND	61.3	123	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benzoic acid	ND	769	1530	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Benzyl alcohol	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Isophorone	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Azobenzene (1,2-DPH)	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	153	307	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
3,3'-Dichlorobenzidine	ND	123	245	ug/kg dry	4	04/22/22 20:22	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	153	307	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1,3-Dinitrobenzene	ND	153	307	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1,4-Dinitrobenzene	ND	153	307	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
Pyridine	ND	30.7	61.3	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1,2-Dichlorobenzene	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1,3-Dichlorobenzene	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
1,4-Dichlorobenzene	ND	15.3	30.7	ug/kg dry	4	04/22/22 20:22	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 37-122 %</i>		<i>4</i>	<i>04/22/22 20:22</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>88 %</i>		<i>44-120 %</i>		<i>4</i>	<i>04/22/22 20:22</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>85 %</i>		<i>33-122 %</i>		<i>4</i>	<i>04/22/22 20:22</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>88 %</i>		<i>54-127 %</i>		<i>4</i>	<i>04/22/22 20:22</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>73 %</i>		<i>35-120 %</i>		<i>4</i>	<i>04/22/22 20:22</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>88 %</i>		<i>39-132 %</i>		<i>4</i>	<i>04/22/22 20:22</i>	<i>EPA 8270E</i>

SB04-0-3 (A2D0663-06RE1)				Matrix: Soil		Batch: 22D0861		
Acenaphthene	ND	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Acenaphthylene	2.76	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	J
Anthracene	ND	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benz(a)anthracene	4.22	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benzo(a)pyrene	7.34	2.78	5.56	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benzo(b)fluoranthene	7.09	2.78	5.56	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benzo(k)fluoranthene	ND	2.78	5.56	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benzo(g,h,i)perylene	4.98	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Chrysene	4.31	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB04-0-3 (A2D0663-06RE1)				Matrix: Soil		Batch: 22D0861		
Fluoranthene	9.93	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Fluorene	ND	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Indeno(1,2,3-cd)pyrene	4.65	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
1-Methylnaphthalene	ND	3.71	7.41	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2-Methylnaphthalene	ND	3.71	7.41	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Naphthalene	17.3	3.71	7.41	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Phenanthrene	9.13	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Pyrene	7.93	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Carbazole	ND	2.78	5.56	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Dibenzofuran	2.76	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	J
2-Chlorophenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4-Chloro-3-methylphenol	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,4-Dichlorophenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,4-Dimethylphenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,4-Dinitrophenol	ND	46.3	92.8	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	46.3	92.8	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2-Methylphenol	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
3+4-Methylphenol(s)	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2-Nitrophenol	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4-Nitrophenol	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Pentachlorophenol (PCP)	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Phenol	5.19	3.71	7.41	ug/kg dry	1	04/26/22 00:21	EPA 8270E	J
2,3,4,6-Tetrachlorophenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,4,5-Trichlorophenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Nitrobenzene	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,4,6-Trichlorophenol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	27.8	55.6	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Butyl benzyl phthalate	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Diethylphthalate	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Dimethylphthalate	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Di-n-butylphthalate	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Di-n-octyl phthalate	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB04-0-3 (A2D0663-06RE1)				Matrix: Soil		Batch: 22D0861		
N-Nitrosodimethylamine	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
N-Nitrosodiphenylamine	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Hexachlorobenzene	ND	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Hexachlorobutadiene	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Hexachlorocyclopentadiene	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Hexachloroethane	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2-Chloronaphthalene	ND	1.85	3.71	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
1,2,4-Trichlorobenzene	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4-Bromophenyl phenyl ether	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Aniline	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4-Chloroaniline	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2-Nitroaniline	ND	37.1	74.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
3-Nitroaniline	ND	37.1	74.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
4-Nitroaniline	ND	37.1	74.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,4-Dinitrotoluene	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
2,6-Dinitrotoluene	ND	18.5	37.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benzoic acid	ND	232	463	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Benzyl alcohol	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Isophorone	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Azobenzene (1,2-DPH)	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	46.3	92.8	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
3,3'-Dichlorobenzidine	ND	37.1	74.1	ug/kg dry	1	04/26/22 00:21	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	46.3	92.8	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
1,3-Dinitrobenzene	ND	46.3	92.8	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
1,4-Dinitrobenzene	ND	46.3	92.8	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
Pyridine	ND	9.28	18.5	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
1,2-Dichlorobenzene	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
1,3-Dichlorobenzene	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB04-0-3 (A2D0663-06RE1)			Matrix: Soil			Batch: 22D0861		
1,4-Dichlorobenzene	ND	4.63	9.28	ug/kg dry	1	04/26/22 00:21	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>04/26/22 00:21</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>80 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/26/22 00:21</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>80 %</i>		<i>33-122 %</i>		<i>1</i>	<i>04/26/22 00:21</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>76 %</i>		<i>54-127 %</i>		<i>1</i>	<i>04/26/22 00:21</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>76 %</i>		<i>35-120 %</i>		<i>1</i>	<i>04/26/22 00:21</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>112 %</i>		<i>39-132 %</i>		<i>1</i>	<i>04/26/22 00:21</i>	<i>EPA 8270E</i>
SB05-0.5-3 (A2D0663-07)			Matrix: Soil			Batch: 22D0861		
Acenaphthene	1430	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Acenaphthylene	ND	26.1	26.1	ug/kg dry	4	04/22/22 21:29	EPA 8270E	R-02
Anthracene	39.5	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benz(a)anthracene	23.2	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benzo(a)pyrene	23.1	10.4	20.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benzo(b)fluoranthene	23.1	10.4	20.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benzo(k)fluoranthene	ND	10.4	20.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benzo(g,h,i)perylene	10.3	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	J
Chrysene	27.6	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Dibenz(a,h)anthracene	ND	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Fluoranthene	100	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Fluorene	454	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Indeno(1,2,3-cd)pyrene	10.3	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	J
1-Methylnaphthalene	776	13.9	27.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2-Methylnaphthalene	1260	13.9	27.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Naphthalene	4100	13.9	27.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Phenanthrene	92.4	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Pyrene	90.5	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Carbazole	69.6	10.4	20.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Dibenzofuran	497	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2-Chlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
4-Chloro-3-methylphenol	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,4-Dichlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,4-Dimethylphenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,4-Dinitrophenol	ND	174	348	ug/kg dry	4	04/22/22 21:29	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0861		
4,6-Dinitro-2-methylphenol	ND	174	348	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2-Methylphenol	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
3+4-Methylphenol(s)	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2-Nitrophenol	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
4-Nitrophenol	ND	139	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Pentachlorophenol (PCP)	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Phenol	ND	13.9	27.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,4,5-Trichlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Nitrobenzene	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,4,6-Trichlorophenol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	104	209	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Butyl benzyl phthalate	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Diethylphthalate	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Dimethylphthalate	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Di-n-butylphthalate	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Di-n-octyl phthalate	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
N-Nitrosodimethylamine	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
N-Nitrosodiphenylamine	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Hexachlorobenzene	ND	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Hexachlorobutadiene	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Hexachlorocyclopentadiene	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Hexachloroethane	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2-Chloronaphthalene	ND	6.94	13.9	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
1,2,4-Trichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
4-Bromophenyl phenyl ether	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Aniline	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0861		
4-Chloroaniline	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2-Nitroaniline	ND	139	278	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
3-Nitroaniline	ND	139	278	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
4-Nitroaniline	ND	139	278	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,4-Dinitrotoluene	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
2,6-Dinitrotoluene	ND	69.4	139	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benzoic acid	ND	871	1740	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Benzyl alcohol	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Isophorone	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Azobenzene (1,2-DPH)	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	174	348	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
3,3'-Dichlorobenzidine	ND	139	278	ug/kg dry	4	04/22/22 21:29	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	174	348	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
1,3-Dinitrobenzene	ND	174	348	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
1,4-Dinitrobenzene	ND	174	348	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
Pyridine	ND	34.8	69.4	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
1,2-Dichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
1,3-Dichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
1,4-Dichlorobenzene	ND	17.4	34.8	ug/kg dry	4	04/22/22 21:29	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 37-122 %</i>	<i>4</i>	<i>04/22/22 21:29</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>96 %</i>		<i>44-120 %</i>	<i>4</i>	<i>04/22/22 21:29</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>90 %</i>		<i>33-122 %</i>	<i>4</i>	<i>04/22/22 21:29</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>94 %</i>		<i>54-127 %</i>	<i>4</i>	<i>04/22/22 21:29</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>70 %</i>		<i>35-120 %</i>	<i>4</i>	<i>04/22/22 21:29</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>98 %</i>		<i>39-132 %</i>	<i>4</i>	<i>04/22/22 21:29</i>	<i>EPA 8270E</i>	

SB05-3-10 (A2D0663-08RE1)				Matrix: Soil		Batch: 22D0861		
Acenaphthene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Acenaphthylene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Anthracene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Benz(a)anthracene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Benzo(a)pyrene	3.21	2.41	4.82	ug/kg dry	1	04/26/22 00:54	EPA 8270E	J
Benzo(b)fluoranthene	ND	2.41	4.82	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Benzo(k)fluoranthene	ND	2.41	4.82	ug/kg dry	1	04/26/22 00:54	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-3-10 (A2D0663-08RE1)				Matrix: Soil		Batch: 22D0861		
Benzo(g,h,i)perylene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Chrysene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Fluoranthene	2.27	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	J
Fluorene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1-Methylnaphthalene	ND	3.22	6.43	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2-Methylnaphthalene	ND	3.22	6.43	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Naphthalene	ND	3.22	6.43	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Phenanthrene	1.92	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	J
Pyrene	3.46	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Carbazole	ND	2.41	4.82	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Dibenzofuran	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2-Chlorophenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4-Chloro-3-methylphenol	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,4-Dichlorophenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,4-Dimethylphenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,4-Dinitrophenol	ND	40.1	80.4	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	40.1	80.4	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2-Methylphenol	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
3+4-Methylphenol(s)	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2-Nitrophenol	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4-Nitrophenol	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Pentachlorophenol (PCP)	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Phenol	ND	3.22	6.43	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,4,5-Trichlorophenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Nitrobenzene	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,4,6-Trichlorophenol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	24.1	48.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Butyl benzyl phthalate	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Diethylphthalate	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-3-10 (A2D0663-08RE1)				Matrix: Soil		Batch: 22D0861		
Dimethylphthalate	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Di-n-butylphthalate	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Di-n-octyl phthalate	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
N-Nitrosodimethylamine	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
N-Nitrosodiphenylamine	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Hexachlorobenzene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Hexachlorobutadiene	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Hexachlorocyclopentadiene	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Hexachloroethane	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2-Chloronaphthalene	ND	1.60	3.22	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1,2,4-Trichlorobenzene	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4-Bromophenyl phenyl ether	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Aniline	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4-Chloroaniline	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2-Nitroaniline	ND	32.2	64.3	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
3-Nitroaniline	ND	32.2	64.3	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
4-Nitroaniline	ND	32.2	64.3	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,4-Dinitrotoluene	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
2,6-Dinitrotoluene	ND	16.0	32.2	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Benzoic acid	ND	201	401	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Benzyl alcohol	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Isophorone	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Azobenzene (1,2-DPH)	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	40.1	80.4	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
3,3'-Dichlorobenzidine	ND	32.2	64.3	ug/kg dry	1	04/26/22 00:54	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	40.1	80.4	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1,3-Dinitrobenzene	ND	40.1	80.4	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1,4-Dinitrobenzene	ND	40.1	80.4	ug/kg dry	1	04/26/22 00:54	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-3-10 (A2D0663-08RE1)				Matrix: Soil		Batch: 22D0861		
Pyridine	ND	8.04	16.0	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1,2-Dichlorobenzene	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1,3-Dichlorobenzene	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
1,4-Dichlorobenzene	ND	4.01	8.04	ug/kg dry	1	04/26/22 00:54	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>04/26/22 00:54</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>87 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/26/22 00:54</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>74 %</i>		<i>33-122 %</i>		<i>1</i>	<i>04/26/22 00:54</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>80 %</i>		<i>54-127 %</i>		<i>1</i>	<i>04/26/22 00:54</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>73 %</i>		<i>35-120 %</i>		<i>1</i>	<i>04/26/22 00:54</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>104 %</i>		<i>39-132 %</i>		<i>1</i>	<i>04/26/22 00:54</i>	<i>EPA 8270E</i>
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0861		R-04
Acenaphthene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Acenaphthylene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Anthracene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benz(a)anthracene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benzo(a)pyrene	ND	214	428	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benzo(b)fluoranthene	ND	214	428	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benzo(k)fluoranthene	ND	214	428	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benzo(g,h,i)perylene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Chrysene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Dibenz(a,h)anthracene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Fluoranthene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Fluorene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1-Methylnaphthalene	ND	286	570	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2-Methylnaphthalene	ND	286	570	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Naphthalene	ND	286	570	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Phenanthrene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Pyrene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Carbazole	ND	214	428	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Dibenzofuran	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2-Chlorophenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
4-Chloro-3-methylphenol	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0861		R-04
2,4-Dichlorophenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,4-Dimethylphenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,4-Dinitrophenol	ND	3560	7140	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	3560	7140	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2-Methylphenol	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
3+4-Methylphenol(s)	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2-Nitrophenol	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
4-Nitrophenol	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Pentachlorophenol (PCP)	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Phenol	ND	286	570	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,4,5-Trichlorophenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Nitrobenzene	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,4,6-Trichlorophenol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	2140	4280	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Butyl benzyl phthalate	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Diethylphthalate	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Dimethylphthalate	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Di-n-butylphthalate	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Di-n-octyl phthalate	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
N-Nitrosodimethylamine	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
N-Nitrosodiphenylamine	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Hexachlorobenzene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Hexachlorobutadiene	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Hexachlorocyclopentadiene	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Hexachloroethane	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2-Chloronaphthalene	ND	142	286	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1,2,4-Trichlorobenzene	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0861		R-04
4-Bromophenyl phenyl ether	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Aniline	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
4-Chloroaniline	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2-Nitroaniline	ND	2860	5700	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
3-Nitroaniline	ND	2860	5700	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
4-Nitroaniline	ND	2860	5700	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,4-Dinitrotoluene	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
2,6-Dinitrotoluene	ND	1420	2860	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benzoic acid	ND	17900	35600	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Benzyl alcohol	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Isophorone	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Azobenzene (1,2-DPH)	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	3560	7140	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
3,3'-Dichlorobenzidine	ND	2860	5700	ug/kg dry	100	04/22/22 16:22	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	3560	7140	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1,3-Dinitrobenzene	ND	3560	7140	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1,4-Dinitrobenzene	ND	3560	7140	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
Pyridine	ND	714	1420	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1,2-Dichlorobenzene	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1,3-Dichlorobenzene	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
1,4-Dichlorobenzene	ND	356	714	ug/kg dry	100	04/22/22 16:22	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 37-122 %</i>	100	04/22/22 16:22	EPA 8270E	S-05
<i>2-Fluorobiphenyl (Surr)</i>		<i>70 %</i>		<i>44-120 %</i>	100	04/22/22 16:22	EPA 8270E	S-05
<i>Phenol-d6 (Surr)</i>		<i>82 %</i>		<i>33-122 %</i>	100	04/22/22 16:22	EPA 8270E	S-05
<i>p-Terphenyl-d14 (Surr)</i>		<i>95 %</i>		<i>54-127 %</i>	100	04/22/22 16:22	EPA 8270E	S-05
<i>2-Fluorophenol (Surr)</i>		<i>51 %</i>		<i>35-120 %</i>	100	04/22/22 16:22	EPA 8270E	S-05
<i>2,4,6-Tribromophenol (Surr)</i>		<i>173 %</i>		<i>39-132 %</i>	100	04/22/22 16:22	EPA 8270E	S-05

SB07-0.5-3 (A2D0663-10RE1)				Matrix: Soil		Batch: 22D0861		
Acenaphthene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Acenaphthylene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Anthracene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Benz(a)anthracene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-0.5-3 (A2D0663-10RE1)				Matrix: Soil		Batch: 22D0861		
Benzo(a)pyrene	2.35	2.04	4.09	ug/kg dry	1	04/26/22 01:28	EPA 8270E	J
Benzo(b)fluoranthene	ND	2.04	4.09	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Benzo(k)fluoranthene	ND	2.04	4.09	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Benzo(g,h,i)perylene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Chrysene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Fluoranthene	3.20	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Fluorene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1-Methylnaphthalene	ND	2.73	5.45	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2-Methylnaphthalene	ND	2.73	5.45	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Naphthalene	3.52	2.73	5.45	ug/kg dry	1	04/26/22 01:28	EPA 8270E	J
Phenanthrene	3.90	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Pyrene	3.87	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Carbazole	ND	2.04	4.09	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Dibenzofuran	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2-Chlorophenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4-Chloro-3-methylphenol	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,4-Dichlorophenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,4-Dimethylphenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,4-Dinitrophenol	ND	34.0	68.2	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	34.0	68.2	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2-Methylphenol	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
3+4-Methylphenol(s)	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2-Nitrophenol	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4-Nitrophenol	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Pentachlorophenol (PCP)	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Phenol	ND	2.73	5.45	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,4,5-Trichlorophenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Nitrobenzene	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,4,6-Trichlorophenol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-0.5-3 (A2D0663-10RE1)				Matrix: Soil		Batch: 22D0861		
Bis(2-ethylhexyl)phthalate	ND	20.4	40.9	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Butyl benzyl phthalate	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Diethylphthalate	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Dimethylphthalate	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Di-n-butylphthalate	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Di-n-octyl phthalate	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
N-Nitrosodimethylamine	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
N-Nitrosodiphenylamine	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Hexachlorobenzene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Hexachlorobutadiene	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Hexachlorocyclopentadiene	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Hexachloroethane	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2-Chloronaphthalene	ND	1.36	2.73	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1,2,4-Trichlorobenzene	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4-Bromophenyl phenyl ether	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Aniline	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4-Chloroaniline	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2-Nitroaniline	ND	27.3	54.5	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
3-Nitroaniline	ND	27.3	54.5	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
4-Nitroaniline	ND	27.3	54.5	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,4-Dinitrotoluene	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
2,6-Dinitrotoluene	ND	13.6	27.3	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Benzoic acid	ND	171	340	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Benzyl alcohol	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Isophorone	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Azobenzene (1,2-DPH)	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	34.0	68.2	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
3,3'-Dichlorobenzidine	ND	27.3	54.5	ug/kg dry	1	04/26/22 01:28	EPA 8270E	Q-52

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-0.5-3 (A2D0663-10RE1)			Matrix: Soil			Batch: 22D0861		
1,2-Dinitrobenzene	ND	34.0	68.2	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1,3-Dinitrobenzene	ND	34.0	68.2	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1,4-Dinitrobenzene	ND	34.0	68.2	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
Pyridine	ND	6.82	13.6	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1,2-Dichlorobenzene	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1,3-Dichlorobenzene	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
1,4-Dichlorobenzene	ND	3.40	6.82	ug/kg dry	1	04/26/22 01:28	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>04/26/22 01:28</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/26/22 01:28</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>75 %</i>		<i>33-122 %</i>		<i>1</i>	<i>04/26/22 01:28</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>84 %</i>		<i>54-127 %</i>		<i>1</i>	<i>04/26/22 01:28</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>71 %</i>		<i>35-120 %</i>		<i>1</i>	<i>04/26/22 01:28</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>98 %</i>		<i>39-132 %</i>		<i>1</i>	<i>04/26/22 01:28</i>	<i>EPA 8270E</i>
SB07-3-6 (A2D0663-11RE1)			Matrix: Soil			Batch: 22D0861		
Acenaphthene	28.9	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	J
Acenaphthylene	53.5	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Anthracene	22.9	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	J
Benz(a)anthracene	33.3	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	J
Benzo(a)pyrene	69.5	30.0	60.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Benzo(b)fluoranthene	43.7	30.0	60.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	J
Benzo(k)fluoranthene	ND	30.0	60.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Benzo(g,h,i)perylene	53.8	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Chrysene	28.5	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	J
Dibenz(a,h)anthracene	ND	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Fluoranthene	213	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Fluorene	27.0	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	J
Indeno(1,2,3-cd)pyrene	40.3	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
1-Methylnaphthalene	ND	40.1	80.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2-Methylnaphthalene	ND	40.1	80.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Naphthalene	236	40.1	80.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Phenanthrene	160	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Pyrene	204	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Carbazole	ND	30.0	60.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB07-3-6 (A2D0663-11RE1)				Matrix: Soil		Batch: 22D0861		
Dibenzofuran	ND	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2-Chlorophenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
4-Chloro-3-methylphenol	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,4-Dichlorophenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,4-Dimethylphenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,4-Dinitrophenol	ND	500	1000	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	500	1000	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2-Methylphenol	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
3+4-Methylphenol(s)	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2-Nitrophenol	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
4-Nitrophenol	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Pentachlorophenol (PCP)	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Phenol	ND	40.1	80.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,4,5-Trichlorophenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Nitrobenzene	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,4,6-Trichlorophenol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	300	601	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Butyl benzyl phthalate	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Diethylphthalate	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Dimethylphthalate	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Di-n-butylphthalate	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Di-n-octyl phthalate	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
N-Nitrosodimethylamine	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
N-Nitrosodiphenylamine	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Hexachlorobenzene	ND	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Hexachlorobutadiene	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E	
Hexachlorocyclopentadiene	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB07-3-6 (A2D0663-11RE1)				Matrix: Soil		Batch: 22D0861			
Hexachloroethane	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
2-Chloronaphthalene	ND	20.0	40.1	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
1,2,4-Trichlorobenzene	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
4-Bromophenyl phenyl ether	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
4-Chlorophenyl phenyl ether	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Aniline	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
4-Chloroaniline	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
2-Nitroaniline	ND	401	801	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
3-Nitroaniline	ND	401	801	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
4-Nitroaniline	ND	401	801	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
2,4-Dinitrotoluene	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
2,6-Dinitrotoluene	ND	200	401	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Benzoic acid	ND	2510	5000	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Benzyl alcohol	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Isophorone	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Azobenzene (1,2-DPH)	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Bis(2-Ethylhexyl) adipate	ND	500	1000	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
3,3'-Dichlorobenzidine	ND	401	801	ug/kg dry	10	04/25/22 23:15	EPA 8270E	Q-52	
1,2-Dinitrobenzene	ND	500	1000	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
1,3-Dinitrobenzene	ND	500	1000	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
1,4-Dinitrobenzene	ND	500	1000	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
Pyridine	ND	100	200	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
1,2-Dichlorobenzene	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
1,3-Dichlorobenzene	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
1,4-Dichlorobenzene	ND	50.0	100	ug/kg dry	10	04/25/22 23:15	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>		<i>85 %</i>	<i>Limits:</i>	<i>37-122 %</i>	<i>10</i>	<i>04/25/22 23:15</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>75 %</i>	<i>44-120 %</i>	<i>10</i>	<i>04/25/22 23:15</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>				<i>55 %</i>	<i>33-122 %</i>	<i>10</i>	<i>04/25/22 23:15</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>				<i>87 %</i>	<i>54-127 %</i>	<i>10</i>	<i>04/25/22 23:15</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>				<i>61 %</i>	<i>35-120 %</i>	<i>10</i>	<i>04/25/22 23:15</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>				<i>102 %</i>	<i>39-132 %</i>	<i>10</i>	<i>04/25/22 23:15</i>	<i>EPA 8270E</i>	

SB08-0-3 (A2D0663-12RE2)				Matrix: Soil		Batch: 22D0861		
Acenaphthene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB08-0-3 (A2D0663-12RE2)				Matrix: Soil		Batch: 22D0861		
Acenaphthylene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Anthracene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Benz(a)anthracene	6.23	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
Benzo(a)pyrene	13.7	9.23	18.5	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
Benzo(b)fluoranthene	13.1	9.23	18.5	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
Benzo(k)fluoranthene	ND	9.23	18.5	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Benzo(g,h,i)perylene	9.41	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
Chrysene	9.43	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
Dibenz(a,h)anthracene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Fluoranthene	12.5	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Fluorene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Indeno(1,2,3-cd)pyrene	7.27	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
1-Methylnaphthalene	ND	12.3	24.6	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2-Methylnaphthalene	ND	12.3	24.6	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Naphthalene	ND	12.3	24.6	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Phenanthrene	8.95	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	J
Pyrene	13.2	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Carbazole	ND	9.23	18.5	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Dibenzofuran	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2-Chlorophenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4-Chloro-3-methylphenol	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,4-Dichlorophenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,4-Dimethylphenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,4-Dinitrophenol	ND	154	308	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	154	308	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2-Methylphenol	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
3+4-Methylphenol(s)	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2-Nitrophenol	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4-Nitrophenol	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Pentachlorophenol (PCP)	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Phenol	ND	12.3	24.6	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB08-0-3 (A2D0663-12RE2)				Matrix: Soil		Batch: 22D0861		
2,4,5-Trichlorophenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Nitrobenzene	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,4,6-Trichlorophenol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	92.3	185	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Butyl benzyl phthalate	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Diethylphthalate	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Dimethylphthalate	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Di-n-butylphthalate	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Di-n-octyl phthalate	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
N-Nitrosodimethylamine	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
N-Nitrosodiphenylamine	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Hexachlorobenzene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Hexachlorobutadiene	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Hexachlorocyclopentadiene	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Hexachloroethane	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2-Chloronaphthalene	ND	6.14	12.3	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
1,2,4-Trichlorobenzene	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4-Bromophenyl phenyl ether	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Aniline	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4-Chloroaniline	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2-Nitroaniline	ND	123	246	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
3-Nitroaniline	ND	123	246	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
4-Nitroaniline	ND	123	246	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,4-Dinitrotoluene	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
2,6-Dinitrotoluene	ND	61.4	123	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Benzoic acid	ND	771	1540	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Benzyl alcohol	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Isophorone	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	

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ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB08-0-3 (A2D0663-12RE2)				Matrix: Soil		Batch: 22D0861		
Azobenzene (1,2-DPH)	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	154	308	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
3,3'-Dichlorobenzidine	ND	123	246	ug/kg dry	4	04/30/22 02:46	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	154	308	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
1,3-Dinitrobenzene	ND	154	308	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
1,4-Dinitrobenzene	ND	154	308	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
Pyridine	ND	30.8	61.4	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
1,2-Dichlorobenzene	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
1,3-Dichlorobenzene	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
1,4-Dichlorobenzene	ND	15.4	30.8	ug/kg dry	4	04/30/22 02:46	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 80 %</i>		<i>Limits: 37-122 %</i>	4	04/30/22 02:46	EPA 8270E	
<i>2-Fluorobiphenyl (Surr)</i>		<i>82 %</i>		<i>44-120 %</i>	4	04/30/22 02:46	EPA 8270E	
<i>Phenol-d6 (Surr)</i>		<i>71 %</i>		<i>33-122 %</i>	4	04/30/22 02:46	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>		<i>82 %</i>		<i>54-127 %</i>	4	04/30/22 02:46	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>		<i>65 %</i>		<i>35-120 %</i>	4	04/30/22 02:46	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>92 %</i>		<i>39-132 %</i>	4	04/30/22 02:46	EPA 8270E	
SB-1 (A2D0663-13)				Matrix: Water		Batch: 22D0716		
Acenaphthene	1.98	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Acenaphthylene	ND	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Anthracene	ND	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Benz(a)anthracene	0.182	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Benzo(a)pyrene	0.884	0.0632	0.126	ug/L	4	04/20/22 14:16	EPA 8270E	
Benzo(b)fluoranthene	0.603	0.0632	0.126	ug/L	4	04/20/22 14:16	EPA 8270E	
Benzo(k)fluoranthene	0.207	0.0632	0.126	ug/L	4	04/20/22 14:16	EPA 8270E	M-05
Benzo(g,h,i)perylene	1.28	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Chrysene	0.278	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Fluoranthene	0.738	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Fluorene	0.0448	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	J
Indeno(1,2,3-cd)pyrene	0.836	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
1-Methylnaphthalene	ND	0.0842	0.168	ug/L	4	04/20/22 14:16	EPA 8270E	
2-Methylnaphthalene	ND	0.0842	0.168	ug/L	4	04/20/22 14:16	EPA 8270E	
Naphthalene	0.136	0.0842	0.168	ug/L	4	04/20/22 14:16	EPA 8270E	J

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-1 (A2D0663-13)			Matrix: Water			Batch: 22D0716		
Phenanthrene	0.183	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Pyrene	0.938	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
Carbazole	ND	0.0632	0.126	ug/L	4	04/20/22 14:16	EPA 8270E	
Dibenzofuran	ND	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
2-Chlorophenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
2,4-Dichlorophenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
2,4-Dimethylphenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
2,4-Dinitrophenol	ND	1.05	2.11	ug/L	4	04/20/22 14:16	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	1.05	2.11	ug/L	4	04/20/22 14:16	EPA 8270E	
2-Methylphenol	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
3+4-Methylphenol(s)	0.234	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
2-Nitrophenol	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
4-Nitrophenol	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
Phenol	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
Butyl benzyl phthalate	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
Diethylphthalate	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
Dimethylphthalate	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
Di-n-butylphthalate	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
Di-n-octyl phthalate	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
N-Nitrosodimethylamine	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Hexachlorobenzene	ND	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-1 (A2D0663-13)				Matrix: Water		Batch: 22D0716		
Hexachlorobutadiene	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
Hexachloroethane	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
2-Chloronaphthalene	ND	0.0421	0.0842	ug/L	4	04/20/22 14:16	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Aniline	ND	0.211	0.421	ug/L	4	04/20/22 14:16	EPA 8270E	
4-Chloroaniline	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
2-Nitroaniline	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
3-Nitroaniline	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
4-Nitroaniline	ND	0.842	1.68	ug/L	4	04/20/22 14:16	EPA 8270E	
Nitrobenzene	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
2,4-Dinitrotoluene	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
2,6-Dinitrotoluene	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
Benzoic acid	ND	10.5	10.5	ug/L	4	04/20/22 14:16	EPA 8270E	
Benzyl alcohol	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
Isophorone	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	1.05	2.11	ug/L	4	04/20/22 14:16	EPA 8270E	
3,3'-Dichlorobenzidine	ND	2.11	4.21	ug/L	4	04/20/22 14:16	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	1.05	2.11	ug/L	4	04/20/22 14:16	EPA 8270E	
1,3-Dinitrobenzene	ND	1.05	2.11	ug/L	4	04/20/22 14:16	EPA 8270E	
1,4-Dinitrobenzene	ND	1.05	2.11	ug/L	4	04/20/22 14:16	EPA 8270E	
Pyridine	ND	0.421	0.842	ug/L	4	04/20/22 14:16	EPA 8270E	
1,2-Dichlorobenzene	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
1,3-Dichlorobenzene	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
1,4-Dichlorobenzene	ND	0.105	0.211	ug/L	4	04/20/22 14:16	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 74 %</i>		<i>Limits: 44-120 %</i>		<i>4</i>	<i>04/20/22 14:16</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>69 %</i>		<i>44-120 %</i>		<i>4</i>	<i>04/20/22 14:16</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>23 %</i>		<i>10-133 %</i>		<i>4</i>	<i>04/20/22 14:16</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>78 %</i>		<i>50-134 %</i>		<i>4</i>	<i>04/20/22 14:16</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>36 %</i>		<i>19-120 %</i>		<i>4</i>	<i>04/20/22 14:16</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>88 %</i>		<i>43-140 %</i>		<i>4</i>	<i>04/20/22 14:16</i>	<i>EPA 8270E</i>

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ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-2 (A2D0663-14)		Matrix: Water			Batch: 22D0716			
Acenaphthene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Acenaphthylene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Anthracene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Benz(a)anthracene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Benzo(a)pyrene	ND	0.0150	0.0300	ug/L	1	04/20/22 20:40	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0150	0.0300	ug/L	1	04/20/22 20:40	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0150	0.0300	ug/L	1	04/20/22 20:40	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Chrysene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Fluoranthene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Fluorene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
1-Methylnaphthalene	ND	0.0200	0.0400	ug/L	1	04/20/22 20:40	EPA 8270E	
2-Methylnaphthalene	ND	0.0200	0.0400	ug/L	1	04/20/22 20:40	EPA 8270E	
Naphthalene	ND	0.0200	0.0400	ug/L	1	04/20/22 20:40	EPA 8270E	
Phenanthrene	0.0120	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	J
Pyrene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Carbazole	ND	0.0150	0.0300	ug/L	1	04/20/22 20:40	EPA 8270E	
Dibenzofuran	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
2-Chlorophenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
2,4-Dichlorophenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
2,4-Dimethylphenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
2,4-Dinitrophenol	ND	0.250	0.500	ug/L	1	04/20/22 20:40	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.250	0.500	ug/L	1	04/20/22 20:40	EPA 8270E	
2-Methylphenol	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
3+4-Methylphenol(s)	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
2-Nitrophenol	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
4-Nitrophenol	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
Phenol	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 22D0716		
SB-2 (A2D0663-14)								
2,3,5,6-Tetrachlorophenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
Butyl benzyl phthalate	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
Diethylphthalate	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
Dimethylphthalate	2.54	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
Di-n-butylphthalate	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
Di-n-octyl phthalate	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
Hexachlorobenzene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
Hexachlorobutadiene	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
Hexachloroethane	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
2-Chloronaphthalene	ND	0.0100	0.0200	ug/L	1	04/20/22 20:40	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
Aniline	ND	0.0500	0.100	ug/L	1	04/20/22 20:40	EPA 8270E	
4-Chloroaniline	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
2-Nitroaniline	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
3-Nitroaniline	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
4-Nitroaniline	ND	0.200	0.400	ug/L	1	04/20/22 20:40	EPA 8270E	
Nitrobenzene	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
2,4-Dinitrotoluene	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
2,6-Dinitrotoluene	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
Benzoic acid	ND	2.50	2.50	ug/L	1	04/20/22 20:40	EPA 8270E	
Isophorone	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-2 (A2D0663-14)				Matrix: Water		Batch: 22D0716		
Azobenzene (1,2-DPH)	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.250	0.500	ug/L	1	04/20/22 20:40	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.500	1.00	ug/L	1	04/20/22 20:40	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:40	EPA 8270E	
1,3-Dinitrobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:40	EPA 8270E	
1,4-Dinitrobenzene	ND	0.250	0.500	ug/L	1	04/20/22 20:40	EPA 8270E	
Pyridine	ND	0.100	0.200	ug/L	1	04/20/22 20:40	EPA 8270E	
1,2-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0250	0.0500	ug/L	1	04/20/22 20:40	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 67 %</i>		<i>Limits: 44-120 %</i>	<i>1</i>	<i>04/20/22 20:40</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>64 %</i>		<i>44-120 %</i>	<i>1</i>	<i>04/20/22 20:40</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>21 %</i>		<i>10-133 %</i>	<i>1</i>	<i>04/20/22 20:40</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>77 %</i>		<i>50-134 %</i>	<i>1</i>	<i>04/20/22 20:40</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>32 %</i>		<i>19-120 %</i>	<i>1</i>	<i>04/20/22 20:40</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>82 %</i>		<i>43-140 %</i>	<i>1</i>	<i>04/20/22 20:40</i>	<i>EPA 8270E</i>	
SB-2 (A2D0663-14RE1)				Matrix: Water		Batch: 22D0716		
Benzyl alcohol	ND	0.100	0.200	ug/L	1	04/21/22 14:58	EPA 8270E	
SB-3 (A2D0663-15)				Matrix: Water		Batch: 22D0716		
Acenaphthene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Acenaphthylene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Anthracene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Benz(a)anthracene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Benzo(a)pyrene	0.0176	0.0176	0.0353	ug/L	1	04/20/22 18:55	EPA 8270E	J
Benzo(b)fluoranthene	ND	0.0176	0.0353	ug/L	1	04/20/22 18:55	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0176	0.0353	ug/L	1	04/20/22 18:55	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Chrysene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Fluoranthene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Fluorene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				Matrix: Water		Batch: 22D0716		
SB-3 (A2D0663-15)								
1-Methylnaphthalene	ND	0.0235	0.0471	ug/L	1	04/20/22 18:55	EPA 8270E	
2-Methylnaphthalene	ND	0.0235	0.0471	ug/L	1	04/20/22 18:55	EPA 8270E	
Naphthalene	ND	0.0235	0.0471	ug/L	1	04/20/22 18:55	EPA 8270E	
Phenanthrene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Pyrene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
Carbazole	ND	0.0176	0.0353	ug/L	1	04/20/22 18:55	EPA 8270E	
Dibenzofuran	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
2-Chlorophenol	ND	0.0588	0.118	ug/L	1	04/20/22 18:55	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
2,4-Dimethylphenol	ND	0.0588	0.118	ug/L	1	04/20/22 18:55	EPA 8270E	
2,4-Dinitrophenol	ND	0.294	0.588	ug/L	1	04/20/22 18:55	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.294	0.588	ug/L	1	04/20/22 18:55	EPA 8270E	
2-Methylphenol	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
3+4-Methylphenol(s)	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
2-Nitrophenol	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
4-Nitrophenol	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
Phenol	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0588	0.118	ug/L	1	04/20/22 18:55	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0588	0.118	ug/L	1	04/20/22 18:55	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
Butyl benzyl phthalate	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
Diethylphthalate	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
Dimethylphthalate	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
Di-n-butylphthalate	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
Di-n-octyl phthalate	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Hexachlorobenzene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 22D0716		
SB-3 (A2D0663-15)								
Hexachlorobutadiene	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0588	0.118	ug/L	1	04/20/22 18:55	EPA 8270E	
Hexachloroethane	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
2-Chloronaphthalene	ND	0.0118	0.0235	ug/L	1	04/20/22 18:55	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Aniline	ND	0.0588	0.118	ug/L	1	04/20/22 18:55	EPA 8270E	
4-Chloroaniline	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
2-Nitroaniline	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
3-Nitroaniline	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
4-Nitroaniline	ND	0.235	0.471	ug/L	1	04/20/22 18:55	EPA 8270E	
Nitrobenzene	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
2,4-Dinitrotoluene	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
2,6-Dinitrotoluene	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
Benzoic acid	ND	2.94	2.94	ug/L	1	04/20/22 18:55	EPA 8270E	
Isophorone	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.294	0.588	ug/L	1	04/20/22 18:55	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.588	1.18	ug/L	1	04/20/22 18:55	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.294	0.588	ug/L	1	04/20/22 18:55	EPA 8270E	
1,3-Dinitrobenzene	ND	0.294	0.588	ug/L	1	04/20/22 18:55	EPA 8270E	
1,4-Dinitrobenzene	ND	0.294	0.588	ug/L	1	04/20/22 18:55	EPA 8270E	
Pyridine	ND	0.118	0.235	ug/L	1	04/20/22 18:55	EPA 8270E	
1,2-Dichlorobenzene	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0294	0.0588	ug/L	1	04/20/22 18:55	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 77 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>04/20/22 18:55</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>66 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/20/22 18:55</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>22 %</i>		<i>10-133 %</i>		<i>1</i>	<i>04/20/22 18:55</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>79 %</i>		<i>50-134 %</i>		<i>1</i>	<i>04/20/22 18:55</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>35 %</i>		<i>19-120 %</i>		<i>1</i>	<i>04/20/22 18:55</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>80 %</i>		<i>43-140 %</i>		<i>1</i>	<i>04/20/22 18:55</i>	<i>EPA 8270E</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-3 (A2D0663-15RE1)			Matrix: Water			Batch: 22D0716		
2,4-Dichlorophenol	ND	0.0588	0.118	ug/L	1	04/21/22 12:39	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	0.0588	0.118	ug/L	1	04/21/22 12:39	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0588	0.118	ug/L	1	04/21/22 12:39	EPA 8270E	
Benzyl alcohol	ND	0.118	0.235	ug/L	1	04/21/22 12:39	EPA 8270E	
SB-4 (A2D0663-16)			Matrix: Water			Batch: 22D0716		
Acenaphthene	0.226	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Acenaphthylene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Anthracene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Benz(a)anthracene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Benzo(a)pyrene	0.0176	0.0160	0.0319	ug/L	1	04/20/22 19:30	EPA 8270E	J
Benzo(b)fluoranthene	ND	0.0160	0.0319	ug/L	1	04/20/22 19:30	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0160	0.0319	ug/L	1	04/20/22 19:30	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Chrysene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Fluoranthene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Fluorene	0.0173	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	J
Indeno(1,2,3-cd)pyrene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
1-Methylnaphthalene	ND	0.0213	0.0426	ug/L	1	04/20/22 19:30	EPA 8270E	
2-Methylnaphthalene	ND	0.0213	0.0426	ug/L	1	04/20/22 19:30	EPA 8270E	
Naphthalene	ND	0.0213	0.0426	ug/L	1	04/20/22 19:30	EPA 8270E	
Phenanthrene	0.0181	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	J
Pyrene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Carbazole	ND	0.0160	0.0319	ug/L	1	04/20/22 19:30	EPA 8270E	
Dibenzofuran	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
2-Chlorophenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
2,4-Dichlorophenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
2,4-Dimethylphenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
2,4-Dinitrophenol	ND	0.266	0.532	ug/L	1	04/20/22 19:30	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.266	0.532	ug/L	1	04/20/22 19:30	EPA 8270E	
2-Methylphenol	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-4 (A2D0663-16)			Matrix: Water			Batch: 22D0716		
3+4-Methylphenol(s)	0.0515	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	J
2-Nitrophenol	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
4-Nitrophenol	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
Pentachlorophenol (PCP)	0.177	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	J
Phenol	0.672	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
Butyl benzyl phthalate	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
Diethylphthalate	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
Dimethylphthalate	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
Di-n-butylphthalate	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
Di-n-octyl phthalate	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0957	0.0957	ug/L	1	04/20/22 19:30	EPA 8270E	R-02
N-Nitrosodiphenylamine	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Hexachlorobenzene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
Hexachlorobutadiene	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
Hexachloroethane	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
2-Chloronaphthalene	ND	0.0106	0.0213	ug/L	1	04/20/22 19:30	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Aniline	ND	0.0532	0.106	ug/L	1	04/20/22 19:30	EPA 8270E	
4-Chloroaniline	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
2-Nitroaniline	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
3-Nitroaniline	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
			Matrix: Water			Batch: 22D0716		
SB-4 (A2D0663-16)								
4-Nitroaniline	ND	0.213	0.426	ug/L	1	04/20/22 19:30	EPA 8270E	
Nitrobenzene	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
2,4-Dinitrotoluene	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
2,6-Dinitrotoluene	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
Isophorone	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.266	0.532	ug/L	1	04/20/22 19:30	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.532	1.06	ug/L	1	04/20/22 19:30	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.266	0.532	ug/L	1	04/20/22 19:30	EPA 8270E	
1,3-Dinitrobenzene	ND	0.266	0.532	ug/L	1	04/20/22 19:30	EPA 8270E	
1,4-Dinitrobenzene	ND	0.266	0.532	ug/L	1	04/20/22 19:30	EPA 8270E	
Pyridine	ND	0.106	0.213	ug/L	1	04/20/22 19:30	EPA 8270E	
1,2-Dichlorobenzene	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0266	0.0532	ug/L	1	04/20/22 19:30	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 73 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>04/20/22 19:30</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>65 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/20/22 19:30</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>24 %</i>		<i>10-133 %</i>		<i>1</i>	<i>04/20/22 19:30</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>66 %</i>		<i>50-134 %</i>		<i>1</i>	<i>04/20/22 19:30</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>37 %</i>		<i>19-120 %</i>		<i>1</i>	<i>04/20/22 19:30</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>83 %</i>		<i>43-140 %</i>		<i>1</i>	<i>04/20/22 19:30</i>	<i>EPA 8270E</i>

			Matrix: Water			Batch: 22D0716		
SB-4 (A2D0663-16RE1)								
Benzoic acid	5.64	1.33	2.66	ug/L	1	04/21/22 15:42	EPA 8270E	
Benzyl alcohol	ND	0.106	0.213	ug/L	1	04/21/22 15:42	EPA 8270E	

			Matrix: Water			Batch: 22D0716		
SB-5 (A2D0663-17)								
Acenaphthene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Acenaphthylene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Anthracene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Benz(a)anthracene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Benzo(a)pyrene	ND	0.0161	0.0323	ug/L	1	04/20/22 20:05	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0161	0.0323	ug/L	1	04/20/22 20:05	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0161	0.0323	ug/L	1	04/20/22 20:05	EPA 8270E	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				Matrix: Water				
				Batch: 22D0716				
SB-5 (A2D0663-17)								
Benzo(g,h,i)perylene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Chrysene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Fluoranthene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Fluorene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
1-Methylnaphthalene	ND	0.0215	0.0430	ug/L	1	04/20/22 20:05	EPA 8270E	
2-Methylnaphthalene	ND	0.0215	0.0430	ug/L	1	04/20/22 20:05	EPA 8270E	
Naphthalene	0.0331	0.0215	0.0430	ug/L	1	04/20/22 20:05	EPA 8270E	J
Phenanthrene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Pyrene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Carbazole	ND	0.0161	0.0323	ug/L	1	04/20/22 20:05	EPA 8270E	
Dibenzofuran	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
2-Chlorophenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
2,4-Dichlorophenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
2,4-Dimethylphenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
2,4-Dinitrophenol	ND	0.269	0.538	ug/L	1	04/20/22 20:05	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.269	0.538	ug/L	1	04/20/22 20:05	EPA 8270E	
2-Methylphenol	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
3+4-Methylphenol(s)	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
2-Nitrophenol	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
4-Nitrophenol	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
Phenol	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
Butyl benzyl phthalate	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
Diethylphthalate	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
Dimethylphthalate	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				Matrix: Water				
				Batch: 22D0716				
SB-5 (A2D0663-17)								
Di-n-butylphthalate	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
Di-n-octyl phthalate	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0538	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Hexachlorobenzene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
Hexachlorobutadiene	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
Hexachloroethane	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
2-Chloronaphthalene	ND	0.0108	0.0215	ug/L	1	04/20/22 20:05	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Aniline	ND	0.0538	0.108	ug/L	1	04/20/22 20:05	EPA 8270E	
4-Chloroaniline	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
2-Nitroaniline	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
3-Nitroaniline	ND	0.430	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
4-Nitroaniline	ND	0.215	0.430	ug/L	1	04/20/22 20:05	EPA 8270E	
Nitrobenzene	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
2,4-Dinitrotoluene	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
2,6-Dinitrotoluene	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	
Benzoic acid	ND	2.69	2.69	ug/L	1	04/20/22 20:05	EPA 8270E	
Isophorone	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.269	0.538	ug/L	1	04/20/22 20:05	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.538	1.08	ug/L	1	04/20/22 20:05	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.269	0.538	ug/L	1	04/20/22 20:05	EPA 8270E	
1,3-Dinitrobenzene	ND	0.269	0.538	ug/L	1	04/20/22 20:05	EPA 8270E	
1,4-Dinitrobenzene	ND	0.269	0.538	ug/L	1	04/20/22 20:05	EPA 8270E	
Pyridine	ND	0.108	0.215	ug/L	1	04/20/22 20:05	EPA 8270E	

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ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-5 (A2D0663-17)				Matrix: Water		Batch: 22D0716		
1,2-Dichlorobenzene	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0269	0.0538	ug/L	1	04/20/22 20:05	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 44-120 %</i>	<i>1</i>	<i>04/20/22 20:05</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>71 %</i>		<i>44-120 %</i>	<i>1</i>	<i>04/20/22 20:05</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>26 %</i>		<i>10-133 %</i>	<i>1</i>	<i>04/20/22 20:05</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>82 %</i>		<i>50-134 %</i>	<i>1</i>	<i>04/20/22 20:05</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>40 %</i>		<i>19-120 %</i>	<i>1</i>	<i>04/20/22 20:05</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>83 %</i>		<i>43-140 %</i>	<i>1</i>	<i>04/20/22 20:05</i>	<i>EPA 8270E</i>	
SB-5 (A2D0663-17RE1)				Matrix: Water		Batch: 22D0716		
Benzyl alcohol	ND	0.108	0.215	ug/L	1	04/21/22 15:33	EPA 8270E	
SB-6 (A2D0663-18RE1)				Matrix: Water		Batch: 22D0716		
Acenaphthene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Acenaphthylene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Anthracene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Benz(a)anthracene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Benzo(a)pyrene	ND	0.0153	0.0306	ug/L	1	04/20/22 22:57	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0153	0.0306	ug/L	1	04/20/22 22:57	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0153	0.0306	ug/L	1	04/20/22 22:57	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Chrysene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Fluoranthene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Fluorene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
1-Methylnaphthalene	ND	0.0204	0.0408	ug/L	1	04/20/22 22:57	EPA 8270E	
2-Methylnaphthalene	ND	0.0204	0.0408	ug/L	1	04/20/22 22:57	EPA 8270E	
Naphthalene	ND	0.0204	0.0408	ug/L	1	04/20/22 22:57	EPA 8270E	
Phenanthrene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Pyrene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Carbazole	ND	0.0153	0.0306	ug/L	1	04/20/22 22:57	EPA 8270E	
Dibenzofuran	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-6 (A2D0663-18RE1)			Matrix: Water			Batch: 22D0716		
2-Chlorophenol	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E	
2,4-Dichlorophenol	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E	
2,4-Dimethylphenol	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E	
2,4-Dinitrophenol	ND	0.255	0.510	ug/L	1	04/20/22 22:57	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.255	0.510	ug/L	1	04/20/22 22:57	EPA 8270E	
2-Methylphenol	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
3+4-Methylphenol(s)	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
2-Nitrophenol	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E	
4-Nitrophenol	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E	
Phenol	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
Butyl benzyl phthalate	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
Diethylphthalate	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
Dimethylphthalate	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
Di-n-butylphthalate	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
Di-n-octyl phthalate	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
Hexachlorobenzene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
Hexachlorobutadiene	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E	
Hexachloroethane	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
2-Chloronaphthalene	ND	0.0102	0.0204	ug/L	1	04/20/22 22:57	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB-6 (A2D0663-18RE1)			Matrix: Water			Batch: 22D0716			
4-Chlorophenyl phenyl ether	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
Aniline	ND	0.0510	0.102	ug/L	1	04/20/22 22:57	EPA 8270E		
4-Chloroaniline	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
2-Nitroaniline	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E		
3-Nitroaniline	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E		
4-Nitroaniline	ND	0.204	0.408	ug/L	1	04/20/22 22:57	EPA 8270E		
Nitrobenzene	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E		
2,4-Dinitrotoluene	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E		
2,6-Dinitrotoluene	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E		
Benzoic acid	ND	2.55	2.55	ug/L	1	04/20/22 22:57	EPA 8270E		
Isophorone	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
Azobenzene (1,2-DPH)	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
Bis(2-Ethylhexyl) adipate	ND	0.255	0.510	ug/L	1	04/20/22 22:57	EPA 8270E		
3,3'-Dichlorobenzidine	ND	0.510	1.02	ug/L	1	04/20/22 22:57	EPA 8270E	Q-52	
1,2-Dinitrobenzene	ND	0.255	0.510	ug/L	1	04/20/22 22:57	EPA 8270E		
1,3-Dinitrobenzene	ND	0.255	0.510	ug/L	1	04/20/22 22:57	EPA 8270E		
1,4-Dinitrobenzene	ND	0.255	0.510	ug/L	1	04/20/22 22:57	EPA 8270E		
Pyridine	ND	0.102	0.204	ug/L	1	04/20/22 22:57	EPA 8270E		
1,2-Dichlorobenzene	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
1,3-Dichlorobenzene	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
1,4-Dichlorobenzene	ND	0.0255	0.0510	ug/L	1	04/20/22 22:57	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>		<i>72 %</i>	<i>Limits:</i>	<i>44-120 %</i>	<i>1</i>	<i>04/20/22 22:57</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>65 %</i>	<i>44-120 %</i>	<i>1</i>	<i>04/20/22 22:57</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>				<i>23 %</i>	<i>10-133 %</i>	<i>1</i>	<i>04/20/22 22:57</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>				<i>70 %</i>	<i>50-134 %</i>	<i>1</i>	<i>04/20/22 22:57</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>				<i>35 %</i>	<i>19-120 %</i>	<i>1</i>	<i>04/20/22 22:57</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>				<i>83 %</i>	<i>43-140 %</i>	<i>1</i>	<i>04/20/22 22:57</i>	<i>EPA 8270E</i>	

SB-6 (A2D0663-18RE2)			Matrix: Water			Batch: 22D0716		
2,3,5,6-Tetrachlorophenol	ND	0.0510	0.102	ug/L	1	04/21/22 13:48	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0510	0.102	ug/L	1	04/21/22 13:48	EPA 8270E	
Benzyl alcohol	ND	0.102	0.204	ug/L	1	04/21/22 13:48	EPA 8270E	

SB-7 (A2D0663-19RE1)			Matrix: Water			Batch: 22D0716		R-04
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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-7 (A2D0663-19RE1)				Matrix: Water		Batch: 22D0716		R-04
Acenaphthene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Acenaphthylene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Anthracene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Benz(a)anthracene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Benzo(a)pyrene	ND	0.0882	0.176	ug/L	4	04/20/22 14:51	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0882	0.176	ug/L	4	04/20/22 14:51	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0882	0.176	ug/L	4	04/20/22 14:51	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Chrysene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Fluoranthene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Fluorene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
1-Methylnaphthalene	ND	0.118	0.235	ug/L	4	04/20/22 14:51	EPA 8270E	
2-Methylnaphthalene	ND	0.118	0.235	ug/L	4	04/20/22 14:51	EPA 8270E	
Naphthalene	ND	0.118	0.235	ug/L	4	04/20/22 14:51	EPA 8270E	
Phenanthrene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Pyrene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Carbazole	ND	0.0882	0.176	ug/L	4	04/20/22 14:51	EPA 8270E	
Dibenzofuran	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
2-Chlorophenol	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
2,4-Dimethylphenol	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
2,4-Dinitrophenol	ND	1.47	2.94	ug/L	4	04/20/22 14:51	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	1.47	2.94	ug/L	4	04/20/22 14:51	EPA 8270E	
2-Methylphenol	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
3+4-Methylphenol(s)	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
2-Nitrophenol	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
4-Nitrophenol	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
Phenol	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-7 (A2D0663-19RE1)				Matrix: Water		Batch: 22D0716		R-04
2,4,5-Trichlorophenol	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
Butyl benzyl phthalate	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
Diethylphthalate	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
Dimethylphthalate	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
Di-n-butylphthalate	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
Di-n-octyl phthalate	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
N-Nitrosodimethylamine	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
Hexachlorobenzene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
Hexachlorobutadiene	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
Hexachloroethane	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
2-Chloronaphthalene	ND	0.0588	0.118	ug/L	4	04/20/22 14:51	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
Aniline	ND	0.294	0.588	ug/L	4	04/20/22 14:51	EPA 8270E	
4-Chloroaniline	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
2-Nitroaniline	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
3-Nitroaniline	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
4-Nitroaniline	ND	1.18	2.35	ug/L	4	04/20/22 14:51	EPA 8270E	
Nitrobenzene	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
2,4-Dinitrotoluene	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
2,6-Dinitrotoluene	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
Benzoic acid	ND	14.7	14.7	ug/L	4	04/20/22 14:51	EPA 8270E	
Benzyl alcohol	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
Isophorone	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-7 (A2D0663-19RE1)				Matrix: Water		Batch: 22D0716		R-04
Azobenzene (1,2-DPH)	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	1.47	2.94	ug/L	4	04/20/22 14:51	EPA 8270E	
3,3'-Dichlorobenzidine	ND	2.94	5.88	ug/L	4	04/20/22 14:51	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	1.47	2.94	ug/L	4	04/20/22 14:51	EPA 8270E	
1,3-Dinitrobenzene	ND	1.47	2.94	ug/L	4	04/20/22 14:51	EPA 8270E	
1,4-Dinitrobenzene	ND	1.47	2.94	ug/L	4	04/20/22 14:51	EPA 8270E	
Pyridine	ND	0.588	1.18	ug/L	4	04/20/22 14:51	EPA 8270E	
1,2-Dichlorobenzene	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
1,3-Dichlorobenzene	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
1,4-Dichlorobenzene	ND	0.147	0.294	ug/L	4	04/20/22 14:51	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 74 %</i>		<i>Limits: 44-120 %</i>	4	04/20/22 14:51	EPA 8270E	
<i>2-Fluorobiphenyl (Surr)</i>		<i>69 %</i>		<i>44-120 %</i>	4	04/20/22 14:51	EPA 8270E	
<i>Phenol-d6 (Surr)</i>		<i>22 %</i>		<i>10-133 %</i>	4	04/20/22 14:51	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>		<i>63 %</i>		<i>50-134 %</i>	4	04/20/22 14:51	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>		<i>34 %</i>		<i>19-120 %</i>	4	04/20/22 14:51	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>89 %</i>		<i>43-140 %</i>	4	04/20/22 14:51	EPA 8270E	
SB-7 (A2D0663-19RE2)				Matrix: Water		Batch: 22D0716		R-04
2,4-Dichlorophenol	ND	0.294	0.588	ug/L	4	04/20/22 15:27	EPA 8270E	
SB-8 (A2D0663-20RE1)				Matrix: Water		Batch: 22D0716		
Acenaphthene	0.0546	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Acenaphthylene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Anthracene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Benz(a)anthracene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Benzo(a)pyrene	0.0167	0.0149	0.0297	ug/L	1	04/20/22 21:49	EPA 8270E	J
Benzo(b)fluoranthene	ND	0.0149	0.0297	ug/L	1	04/20/22 21:49	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0149	0.0297	ug/L	1	04/20/22 21:49	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Chrysene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Fluoranthene	0.0121	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	J
Fluorene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-8 (A2D0663-20RE1)				Matrix: Water		Batch: 22D0716		
1-Methylnaphthalene	ND	0.0198	0.0396	ug/L	1	04/20/22 21:49	EPA 8270E	
2-Methylnaphthalene	ND	0.0198	0.0396	ug/L	1	04/20/22 21:49	EPA 8270E	
Naphthalene	0.0543	0.0198	0.0396	ug/L	1	04/20/22 21:49	EPA 8270E	
Phenanthrene	0.0206	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Pyrene	0.0156	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	J
Carbazole	ND	0.0149	0.0297	ug/L	1	04/20/22 21:49	EPA 8270E	
Dibenzofuran	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
2-Chlorophenol	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
2,4-Dichlorophenol	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
2,4-Dimethylphenol	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
2,4-Dinitrophenol	ND	0.248	0.495	ug/L	1	04/20/22 21:49	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.248	0.495	ug/L	1	04/20/22 21:49	EPA 8270E	
2-Methylphenol	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
3+4-Methylphenol(s)	0.0391	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	J
2-Nitrophenol	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
4-Nitrophenol	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
Phenol	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
Butyl benzyl phthalate	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
Diethylphthalate	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
Dimethylphthalate	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
Di-n-butylphthalate	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
Di-n-octyl phthalate	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-8 (A2D0663-20RE1)			Matrix: Water			Batch: 22D0716		
2,2'-Oxybis(1-Chloropropane)	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Hexachlorobenzene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
Hexachlorobutadiene	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
Hexachloroethane	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
2-Chloronaphthalene	ND	0.00990	0.0198	ug/L	1	04/20/22 21:49	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Aniline	ND	0.0495	0.0990	ug/L	1	04/20/22 21:49	EPA 8270E	
4-Chloroaniline	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
2-Nitroaniline	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
3-Nitroaniline	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
4-Nitroaniline	ND	0.198	0.396	ug/L	1	04/20/22 21:49	EPA 8270E	
Nitrobenzene	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
2,4-Dinitrotoluene	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
2,6-Dinitrotoluene	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
Benzoic acid	ND	2.48	2.48	ug/L	1	04/20/22 21:49	EPA 8270E	
Isophorone	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.248	0.495	ug/L	1	04/20/22 21:49	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.495	0.990	ug/L	1	04/20/22 21:49	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.248	0.495	ug/L	1	04/20/22 21:49	EPA 8270E	
1,3-Dinitrobenzene	ND	0.248	0.495	ug/L	1	04/20/22 21:49	EPA 8270E	
1,4-Dinitrobenzene	ND	0.248	0.495	ug/L	1	04/20/22 21:49	EPA 8270E	
Pyridine	ND	0.0990	0.198	ug/L	1	04/20/22 21:49	EPA 8270E	
1,2-Dichlorobenzene	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0248	0.0495	ug/L	1	04/20/22 21:49	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 75 %</i>		<i>Limits: 44-120 %</i>		<i>1</i>	<i>04/20/22 21:49</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>68 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/20/22 21:49</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>23 %</i>		<i>10-133 %</i>		<i>1</i>	<i>04/20/22 21:49</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>72 %</i>		<i>50-134 %</i>		<i>1</i>	<i>04/20/22 21:49</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>35 %</i>		<i>19-120 %</i>		<i>1</i>	<i>04/20/22 21:49</i>	<i>EPA 8270E</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB-8 (A2D0663-20RE1)			Matrix: Water			Batch: 22D0716			
<i>Surrogate: 2,4,6-Tribromophenol (Surr)</i>		<i>Recovery: 83 %</i>		<i>Limits: 43-140 %</i>		<i>1</i>		<i>04/20/22 21:49</i>	<i>EPA 8270E</i>
SB-8 (A2D0663-20RE2)			Matrix: Water			Batch: 22D0716			
2,3,5,6-Tetrachlorophenol	ND	0.0495	0.0990	ug/L	1	04/21/22 14:23	EPA 8270E		
Benzyl alcohol	ND	0.0990	0.198	ug/L	1	04/21/22 14:23	EPA 8270E		
DUP-01 (A2D0663-21RE1)			Matrix: Soil			Batch: 22D0861			
Acenaphthene	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Acenaphthylene	2.06	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E	J	
Anthracene	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Benz(a)anthracene	2.55	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E	J	
Benzo(a)pyrene	4.53	2.85	5.70	ug/kg dry	1	04/27/22 04:17	EPA 8270E	J	
Benzo(b)fluoranthene	3.33	2.85	5.70	ug/kg dry	1	04/27/22 04:17	EPA 8270E	J	
Benzo(k)fluoranthene	ND	2.85	5.70	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Benzo(g,h,i)perylene	3.96	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Chrysene	2.36	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E	J	
Dibenz(a,h)anthracene	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Fluoranthene	4.62	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Fluorene	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Indeno(1,2,3-cd)pyrene	2.95	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E	J	
1-Methylnaphthalene	ND	3.80	7.59	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
2-Methylnaphthalene	ND	3.80	7.59	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Naphthalene	15.9	3.80	7.59	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Phenanthrene	4.87	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Pyrene	4.40	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Carbazole	ND	2.85	5.70	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
Dibenzofuran	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
2-Chlorophenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
4-Chloro-3-methylphenol	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
2,4-Dichlorophenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
2,4-Dimethylphenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
2,4-Dinitrophenol	ND	47.4	95.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
4,6-Dinitro-2-methylphenol	ND	47.4	95.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E		
2-Methylphenol	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-01 (A2D0663-21RE1)				Matrix: Soil		Batch: 22D0861		
3+4-Methylphenol(s)	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2-Nitrophenol	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
4-Nitrophenol	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Pentachlorophenol (PCP)	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Phenol	ND	3.80	7.59	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,4,5-Trichlorophenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Nitrobenzene	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,4,6-Trichlorophenol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	28.5	57.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Butyl benzyl phthalate	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Diethylphthalate	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Dimethylphthalate	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Di-n-butylphthalate	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Di-n-octyl phthalate	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
N-Nitrosodimethylamine	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
N-Nitrosodiphenylamine	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Hexachlorobenzene	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Hexachlorobutadiene	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Hexachlorocyclopentadiene	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Hexachloroethane	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2-Chloronaphthalene	ND	1.89	3.80	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
1,2,4-Trichlorobenzene	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
4-Bromophenyl phenyl ether	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Aniline	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
4-Chloroaniline	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2-Nitroaniline	ND	38.0	75.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-01 (A2D0663-21RE1)				Matrix: Soil		Batch: 22D0861		
3-Nitroaniline	ND	38.0	75.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
4-Nitroaniline	ND	38.0	75.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,4-Dinitrotoluene	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
2,6-Dinitrotoluene	ND	18.9	38.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Benzoic acid	ND	238	474	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Benzyl alcohol	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Isophorone	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Azobenzene (1,2-DPH)	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	47.4	95.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
3,3'-Dichlorobenzidine	ND	38.0	75.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	47.4	95.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
1,3-Dinitrobenzene	ND	47.4	95.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
1,4-Dinitrobenzene	ND	47.4	95.0	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
Pyridine	ND	9.50	18.9	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
1,2-Dichlorobenzene	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
1,3-Dichlorobenzene	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
1,4-Dichlorobenzene	ND	4.74	9.50	ug/kg dry	1	04/27/22 04:17	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 80 %</i>		<i>Limits: 37-122 %</i>		<i>1</i>	<i>04/27/22 04:17</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>74 %</i>		<i>44-120 %</i>		<i>1</i>	<i>04/27/22 04:17</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>70 %</i>		<i>33-122 %</i>		<i>1</i>	<i>04/27/22 04:17</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>71 %</i>		<i>54-127 %</i>		<i>1</i>	<i>04/27/22 04:17</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>65 %</i>		<i>35-120 %</i>		<i>1</i>	<i>04/27/22 04:17</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>95 %</i>		<i>39-132 %</i>		<i>1</i>	<i>04/27/22 04:17</i>	<i>EPA 8270E</i>

DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0716		
Acenaphthene	0.0533	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Acenaphthylene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Anthracene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Benz(a)anthracene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Benzo(a)pyrene	ND	0.0165	0.0330	ug/L	1	04/20/22 22:23	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0165	0.0330	ug/L	1	04/20/22 22:23	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0165	0.0330	ug/L	1	04/20/22 22:23	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Chrysene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0716		
Dibenz(a,h)anthracene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Fluoranthene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Fluorene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
1-Methylnaphthalene	ND	0.0220	0.0440	ug/L	1	04/20/22 22:23	EPA 8270E	
2-Methylnaphthalene	ND	0.0220	0.0440	ug/L	1	04/20/22 22:23	EPA 8270E	
Naphthalene	0.0499	0.0220	0.0440	ug/L	1	04/20/22 22:23	EPA 8270E	
Phenanthrene	0.0199	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	J
Pyrene	0.0113	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	J
Carbazole	ND	0.0165	0.0330	ug/L	1	04/20/22 22:23	EPA 8270E	
Dibenzofuran	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
2-Chlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
2,4-Dichlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
2,4-Dimethylphenol	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
2,4-Dinitrophenol	ND	0.275	0.549	ug/L	1	04/20/22 22:23	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.275	0.549	ug/L	1	04/20/22 22:23	EPA 8270E	
2-Methylphenol	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
3+4-Methylphenol(s)	0.0357	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	J
2-Nitrophenol	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
4-Nitrophenol	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
Phenol	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
Butyl benzyl phthalate	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
Diethylphthalate	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
Dimethylphthalate	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
Di-n-butylphthalate	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
Di-n-octyl phthalate	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0716		
N-Nitrosodiphenylamine	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Hexachlorobenzene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
Hexachlorobutadiene	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
Hexachloroethane	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
2-Chloronaphthalene	ND	0.0110	0.0220	ug/L	1	04/20/22 22:23	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Aniline	ND	0.0549	0.110	ug/L	1	04/20/22 22:23	EPA 8270E	
4-Chloroaniline	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
2-Nitroaniline	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
3-Nitroaniline	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
4-Nitroaniline	ND	0.220	0.440	ug/L	1	04/20/22 22:23	EPA 8270E	
Nitrobenzene	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
2,4-Dinitrotoluene	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
2,6-Dinitrotoluene	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
Benzoic acid	ND	2.75	2.75	ug/L	1	04/20/22 22:23	EPA 8270E	
Isophorone	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.275	0.549	ug/L	1	04/20/22 22:23	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.549	1.10	ug/L	1	04/20/22 22:23	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.275	0.549	ug/L	1	04/20/22 22:23	EPA 8270E	
1,3-Dinitrobenzene	ND	0.275	0.549	ug/L	1	04/20/22 22:23	EPA 8270E	
1,4-Dinitrobenzene	ND	0.275	0.549	ug/L	1	04/20/22 22:23	EPA 8270E	
Pyridine	ND	0.110	0.220	ug/L	1	04/20/22 22:23	EPA 8270E	
1,2-Dichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 22:23	EPA 8270E	

Surrogate: Nitrobenzene-d5 (Surr) Recovery: 66 % Limits: 44-120 % 1 04/20/22 22:23 EPA 8270E

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-X (A2D0663-22RE1)				Matrix: Water		Batch: 22D0716		
<i>Surrogate: 2-Fluorobiphenyl (Surr)</i>		<i>Recovery: 62 %</i>		<i>Limits: 44-120 %</i>	1	04/20/22 22:23	EPA 8270E	
<i>Phenol-d6 (Surr)</i>				23 %	1	04/20/22 22:23	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>				73 %	1	04/20/22 22:23	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>				33 %	1	04/20/22 22:23	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>				79 %	1	04/20/22 22:23	EPA 8270E	
DUP-X (A2D0663-22RE2)				Matrix: Water		Batch: 22D0716		
2,3,5,6-Tetrachlorophenol	ND	0.0549	0.110	ug/L	1	04/21/22 13:14	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0549	0.110	ug/L	1	04/21/22 13:14	EPA 8270E	
Benzyl alcohol	ND	0.110	0.220	ug/L	1	04/21/22 13:14	EPA 8270E	
DU-01 (A2D0663-24RE1)				Matrix: Soil		Batch: 22D1068		PRO
Acenaphthene	22.7	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Acenaphthylene	12.0	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Anthracene	8.28	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	J, Q-37
Benz(a)anthracene	15.8	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Benzo(a)pyrene	34.0	7.67	15.3	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Benzo(b)fluoranthene	37.6	7.67	15.3	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Benzo(k)fluoranthene	13.8	7.67	15.3	ug/kg dry	4	04/28/22 17:03	EPA 8270E	J, Q-37
Benzo(g,h,i)perylene	29.7	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Chrysene	32.3	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Dibenz(a,h)anthracene	ND	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Fluoranthene	77.0	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Fluorene	21.9	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Indeno(1,2,3-cd)pyrene	21.1	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
1-Methylnaphthalene	ND	10.2	20.4	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2-Methylnaphthalene	14.8	10.2	20.4	ug/kg dry	4	04/28/22 17:03	EPA 8270E	J, Q-37
Naphthalene	58.5	10.2	20.4	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
Phenanthrene	106	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Pyrene	70.5	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Carbazole	ND	7.67	15.3	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Dibenzofuran	20.9	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2-Chlorophenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
4-Chloro-3-methylphenol	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-01 (A2D0663-24RE1)				Matrix: Soil		Batch: 22D1068		PRO
2,4-Dichlorophenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2,4-Dimethylphenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2,4-Dinitrophenol	ND	128	256	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
4,6-Dinitro-2-methylphenol	ND	128	256	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
2-Methylphenol	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
3+4-Methylphenol(s)	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2-Nitrophenol	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
4-Nitrophenol	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
Pentachlorophenol (PCP)	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
Phenol	ND	10.2	20.4	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
2,3,5,6-Tetrachlorophenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
2,4,5-Trichlorophenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
Nitrobenzene	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2,4,6-Trichlorophenol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
Bis(2-ethylhexyl)phthalate	335	76.7	153	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Butyl benzyl phthalate	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Diethylphthalate	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Dimethylphthalate	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Di-n-butylphthalate	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Di-n-octyl phthalate	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
N-Nitrosodimethylamine	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
N-Nitrosodiphenylamine	ND	25.6	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Hexachlorobenzene	ND	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Hexachlorobutadiene	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Hexachlorocyclopentadiene	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Hexachloroethane	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2-Chloronaphthalene	ND	5.10	10.2	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
1,2,4-Trichlorobenzene	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-01 (A2D0663-24RE1)				Matrix: Soil		Batch: 22D1068		PRO
4-Bromophenyl phenyl ether	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Aniline	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
4-Chloroaniline	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2-Nitroaniline	ND	102	204	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
3-Nitroaniline	ND	102	204	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
4-Nitroaniline	ND	102	204	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
2,4-Dinitrotoluene	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
2,6-Dinitrotoluene	ND	51.0	102	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Benzoic acid	ND	640	1280	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
Benzyl alcohol	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Isophorone	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Azobenzene (1,2-DPH)	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	128	256	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
3,3'-Dichlorobenzidine	ND	102	204	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	128	256	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
1,3-Dinitrobenzene	ND	128	256	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
1,4-Dinitrobenzene	ND	128	256	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
Pyridine	ND	25.6	51.0	ug/kg dry	4	04/28/22 17:03	EPA 8270E	Q-42
1,2-Dichlorobenzene	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
1,3-Dichlorobenzene	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
1,4-Dichlorobenzene	ND	12.8	25.6	ug/kg dry	4	04/28/22 17:03	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 60 %</i>		<i>Limits: 37-122 %</i>	4	04/28/22 17:03	EPA 8270E	
<i>2-Fluorobiphenyl (Surr)</i>		<i>61 %</i>		<i>44-120 %</i>	4	04/28/22 17:03	EPA 8270E	
<i>Phenol-d6 (Surr)</i>		<i>43 %</i>		<i>33-122 %</i>	4	04/28/22 17:03	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>		<i>74 %</i>		<i>54-127 %</i>	4	04/28/22 17:03	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>		<i>34 %</i>		<i>35-120 %</i>	4	04/28/22 17:03	EPA 8270E	S-03
<i>2,4,6-Tribromophenol (Surr)</i>		<i>32 %</i>		<i>39-132 %</i>	4	04/28/22 17:03	EPA 8270E	S-03

DU-02 (A2D0663-26RE1)				Matrix: Soil		Batch: 22D0935		PRO
Acenaphthene	ND	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Acenaphthylene	15.3	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J
Anthracene	ND	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Benz(a)anthracene	19.4	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-02 (A2D0663-26RE1)				Matrix: Soil		Batch: 22D0935		PRO
Benzo(a)pyrene	39.0	20.0	39.9	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J
Benzo(b)fluoranthene	30.5	20.0	39.9	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J
Benzo(k)fluoranthene	ND	20.0	39.9	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Benzo(g,h,i)perylene	28.2	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Chrysene	41.2	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Dibenz(a,h)anthracene	ND	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Fluoranthene	78.1	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Fluorene	21.1	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J
Indeno(1,2,3-cd)pyrene	19.9	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J
1-Methylnaphthalene	ND	26.6	53.2	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2-Methylnaphthalene	ND	26.6	53.2	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Naphthalene	90.0	26.6	53.2	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Phenanthrene	87.7	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Pyrene	82.8	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Carbazole	ND	20.0	39.9	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Dibenzofuran	14.4	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	J
2-Chlorophenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4-Chloro-3-methylphenol	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,4-Dichlorophenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,4-Dimethylphenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,4-Dinitrophenol	ND	332	665	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	332	665	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2-Methylphenol	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
3+4-Methylphenol(s)	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2-Nitrophenol	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4-Nitrophenol	ND	266	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Pentachlorophenol (PCP)	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Phenol	ND	26.6	53.2	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,4,5-Trichlorophenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Nitrobenzene	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,4,6-Trichlorophenol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-02 (A2D0663-26RE1)				Matrix: Soil		Batch: 22D0935		PRO
Bis(2-ethylhexyl)phthalate	ND	200	399	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Butyl benzyl phthalate	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Diethylphthalate	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Dimethylphthalate	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Di-n-butylphthalate	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Di-n-octyl phthalate	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
N-Nitrosodimethylamine	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
N-Nitrosodiphenylamine	ND	99.8	99.8	ug/kg dry	10	04/25/22 19:17	EPA 8270E	R-02
Bis(2-Chloroethoxy) methane	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Hexachlorobenzene	ND	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Hexachlorobutadiene	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Hexachlorocyclopentadiene	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Hexachloroethane	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2-Chloronaphthalene	ND	13.3	26.6	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
1,2,4-Trichlorobenzene	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4-Bromophenyl phenyl ether	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Aniline	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4-Chloroaniline	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2-Nitroaniline	ND	266	532	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
3-Nitroaniline	ND	266	532	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
4-Nitroaniline	ND	266	532	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,4-Dinitrotoluene	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
2,6-Dinitrotoluene	ND	133	266	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Benzoic acid	ND	1670	3320	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Benzyl alcohol	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Isophorone	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Azobenzene (1,2-DPH)	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	332	665	ug/kg dry	10	04/25/22 19:17	EPA 8270E	
3,3'-Dichlorobenzidine	ND	266	532	ug/kg dry	10	04/25/22 19:17	EPA 8270E	Q-52

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
DU-02 (A2D0663-26RE1)				Matrix: Soil		Batch: 22D0935		PRO	
1,2-Dinitrobenzene	ND	332	665	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
1,3-Dinitrobenzene	ND	332	665	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
1,4-Dinitrobenzene	ND	332	665	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
Pyridine	ND	66.5	133	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
1,2-Dichlorobenzene	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
1,3-Dichlorobenzene	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
1,4-Dichlorobenzene	ND	33.2	66.5	ug/kg dry	10	04/25/22 19:17	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 55 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>04/25/22 19:17</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>66 %</i>		<i>44-120 %</i>		<i>10</i>	<i>04/25/22 19:17</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>29 %</i>		<i>33-122 %</i>		<i>10</i>	<i>04/25/22 19:17</i>	<i>EPA 8270E</i>	<i>S-03</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>72 %</i>		<i>54-127 %</i>		<i>10</i>	<i>04/25/22 19:17</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>29 %</i>		<i>35-120 %</i>		<i>10</i>	<i>04/25/22 19:17</i>	<i>EPA 8270E</i>	<i>S-03</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>44 %</i>		<i>39-132 %</i>		<i>10</i>	<i>04/25/22 19:17</i>	<i>EPA 8270E</i>	
DU-03 (A2D0663-28RE1)				Matrix: Soil		Batch: 22D0935		PRO	
Acenaphthene	281	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Acenaphthylene	ND	26.9	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Anthracene	69.9	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Benz(a)anthracene	48.4	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Benzo(a)pyrene	48.3	20.2	40.3	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Benzo(b)fluoranthene	58.1	20.2	40.3	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Benzo(k)fluoranthene	ND	20.2	40.3	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Benzo(g,h,i)perylene	28.7	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Chrysene	75.4	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Dibenz(a,h)anthracene	ND	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Fluoranthene	311	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Fluorene	255	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Indeno(1,2,3-cd)pyrene	19.2	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E	J	
1-Methylnaphthalene	115	26.9	53.7	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
2-Methylnaphthalene	192	26.9	53.7	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Naphthalene	328	26.9	53.7	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Phenanthrene	531	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Pyrene	256	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E		
Carbazole	64.3	20.2	40.3	ug/kg dry	10	04/27/22 04:50	EPA 8270E		

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ANALYTICAL REPORT

Apex Laboratories, LLC

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-03 (A2D0663-28RE1)				Matrix: Soil		Batch: 22D0935		PRO
Dibenzofuran	242	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2-Chlorophenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4-Chloro-3-methylphenol	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,4-Dichlorophenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,4-Dimethylphenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,4-Dinitrophenol	ND	336	672	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	336	672	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2-Methylphenol	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
3+4-Methylphenol(s)	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2-Nitrophenol	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4-Nitrophenol	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Pentachlorophenol (PCP)	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Phenol	ND	26.9	53.7	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,4,5-Trichlorophenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Nitrobenzene	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,4,6-Trichlorophenol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	202	403	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Butyl benzyl phthalate	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Diethylphthalate	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Dimethylphthalate	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Di-n-butylphthalate	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Di-n-octyl phthalate	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
N-Nitrosodimethylamine	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
N-Nitrosodiphenylamine	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Hexachlorobenzene	ND	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Hexachlorobutadiene	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Hexachlorocyclopentadiene	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-03 (A2D0663-28RE1)				Matrix: Soil		Batch: 22D0935		PRO
Hexachloroethane	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2-Chloronaphthalene	ND	13.4	26.9	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
1,2,4-Trichlorobenzene	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4-Bromophenyl phenyl ether	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Aniline	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4-Chloroaniline	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2-Nitroaniline	ND	269	537	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
3-Nitroaniline	ND	269	537	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
4-Nitroaniline	ND	269	537	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,4-Dinitrotoluene	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
2,6-Dinitrotoluene	ND	134	269	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Benzoic acid	ND	1680	3360	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Benzyl alcohol	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Isophorone	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Azobenzene (1,2-DPH)	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	336	672	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
3,3'-Dichlorobenzidine	ND	269	537	ug/kg dry	10	04/27/22 04:50	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	336	672	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
1,3-Dinitrobenzene	ND	336	672	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
1,4-Dinitrobenzene	ND	336	672	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
Pyridine	ND	67.2	134	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
1,2-Dichlorobenzene	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
1,3-Dichlorobenzene	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
1,4-Dichlorobenzene	ND	33.6	67.2	ug/kg dry	10	04/27/22 04:50	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>04/27/22 04:50</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>10</i>	<i>04/27/22 04:50</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>53 %</i>		<i>33-122 %</i>		<i>10</i>	<i>04/27/22 04:50</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>79 %</i>		<i>54-127 %</i>		<i>10</i>	<i>04/27/22 04:50</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>40 %</i>		<i>35-120 %</i>		<i>10</i>	<i>04/27/22 04:50</i>	<i>EPA 8270E</i>
<i>2,4,6-Tribromophenol (Surr)</i>		<i>52 %</i>		<i>39-132 %</i>		<i>10</i>	<i>04/27/22 04:50</i>	<i>EPA 8270E</i>

DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1068		PRO
Acenaphthene	99.1	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1068		PRO
Acenaphthylene	61.7	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Anthracene	99.4	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Benz(a)anthracene	109	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Benzo(a)pyrene	114	19.5	39.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Benzo(b)fluoranthene	131	19.5	39.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Benzo(k)fluoranthene	48.9	19.5	39.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	M-05
Benzo(g,h,i)perylene	77.0	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Chrysene	146	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Dibenz(a,h)anthracene	ND	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Fluoranthene	520	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Fluorene	89.4	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Indeno(1,2,3-cd)pyrene	57.2	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1-Methylnaphthalene	78.7	26.0	52.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2-Methylnaphthalene	123	26.0	52.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Naphthalene	295	26.0	52.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Phenanthrene	650	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Pyrene	595	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Carbazole	ND	19.5	39.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Dibenzofuran	38.0	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2-Chlorophenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4-Chloro-3-methylphenol	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,4-Dichlorophenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,4-Dimethylphenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,4-Dinitrophenol	ND	325	650	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	325	650	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2-Methylphenol	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
3+4-Methylphenol(s)	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2-Nitrophenol	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4-Nitrophenol	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Pentachlorophenol (PCP)	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Phenol	ND	26.0	52.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1068		PRO
2,4,5-Trichlorophenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Nitrobenzene	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,4,6-Trichlorophenol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	195	390	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Butyl benzyl phthalate	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Diethylphthalate	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Dimethylphthalate	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Di-n-butylphthalate	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Di-n-octyl phthalate	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
N-Nitrosodimethylamine	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
N-Nitrosodiphenylamine	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Hexachlorobenzene	ND	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Hexachlorobutadiene	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Hexachlorocyclopentadiene	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Hexachloroethane	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2-Chloronaphthalene	ND	13.0	26.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1,2,4-Trichlorobenzene	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4-Bromophenyl phenyl ether	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Aniline	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4-Chloroaniline	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2-Nitroaniline	ND	260	520	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
3-Nitroaniline	ND	260	520	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
4-Nitroaniline	ND	260	520	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,4-Dinitrotoluene	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
2,6-Dinitrotoluene	ND	130	260	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Benzoic acid	ND	1630	3250	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Benzyl alcohol	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Isophorone	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D1068		PRO
Azobenzene (1,2-DPH)	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	325	650	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
3,3'-Dichlorobenzidine	ND	260	520	ug/kg dry	10	04/28/22 20:35	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	325	650	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1,3-Dinitrobenzene	ND	325	650	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1,4-Dinitrobenzene	ND	325	650	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
Pyridine	ND	65.0	130	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1,2-Dichlorobenzene	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1,3-Dichlorobenzene	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
1,4-Dichlorobenzene	ND	32.5	65.0	ug/kg dry	10	04/28/22 20:35	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>04/28/22 20:35</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>74 %</i>		<i>44-120 %</i>	<i>10</i>	<i>04/28/22 20:35</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>51 %</i>		<i>33-122 %</i>	<i>10</i>	<i>04/28/22 20:35</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>76 %</i>		<i>54-127 %</i>	<i>10</i>	<i>04/28/22 20:35</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>45 %</i>		<i>35-120 %</i>	<i>10</i>	<i>04/28/22 20:35</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>40 %</i>		<i>39-132 %</i>	<i>10</i>	<i>04/28/22 20:35</i>	<i>EPA 8270E</i>	
DU-05 (A2D0663-32)				Matrix: Soil		Batch: 22D1068		PRO
Acenaphthene	191	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Acenaphthylene	33.9	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Anthracene	158	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Benz(a)anthracene	165	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Benzo(a)pyrene	93.5	19.4	38.8	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Benzo(b)fluoranthene	171	19.4	38.8	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Benzo(k)fluoranthene	53.6	19.4	38.8	ug/kg dry	10	04/28/22 18:49	EPA 8270E	M-05
Benzo(g,h,i)perylene	42.8	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Chrysene	214	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Dibenz(a,h)anthracene	ND	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Fluoranthene	893	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Fluorene	178	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Indeno(1,2,3-cd)pyrene	34.7	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1-Methylnaphthalene	65.4	25.9	51.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2-Methylnaphthalene	138	25.9	51.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Naphthalene	401	25.9	51.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-05 (A2D0663-32)				Matrix: Soil		Batch: 22D1068		PRO
Phenanthrene	977	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Pyrene	766	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Carbazole	20.2	19.4	38.8	ug/kg dry	10	04/28/22 18:49	EPA 8270E	J
Dibenzofuran	140	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2-Chlorophenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4-Chloro-3-methylphenol	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,4-Dichlorophenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,4-Dimethylphenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,4-Dinitrophenol	ND	323	647	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	323	647	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2-Methylphenol	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
3+4-Methylphenol(s)	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2-Nitrophenol	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4-Nitrophenol	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Pentachlorophenol (PCP)	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Phenol	ND	25.9	51.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,4,5-Trichlorophenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Nitrobenzene	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,4,6-Trichlorophenol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	194	388	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Butyl benzyl phthalate	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Diethylphthalate	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Dimethylphthalate	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Di-n-butylphthalate	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Di-n-octyl phthalate	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
N-Nitrosodimethylamine	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
N-Nitrosodiphenylamine	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-05 (A2D0663-32)				Matrix: Soil		Batch: 22D1068		PRO
Hexachlorobenzene	ND	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Hexachlorobutadiene	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Hexachlorocyclopentadiene	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Hexachloroethane	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2-Chloronaphthalene	ND	12.9	25.9	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1,2,4-Trichlorobenzene	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4-Bromophenyl phenyl ether	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Aniline	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4-Chloroaniline	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2-Nitroaniline	ND	259	517	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
3-Nitroaniline	ND	259	517	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
4-Nitroaniline	ND	259	517	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,4-Dinitrotoluene	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
2,6-Dinitrotoluene	ND	129	259	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Benzoic acid	ND	1620	3230	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Benzyl alcohol	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Isophorone	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Azobenzene (1,2-DPH)	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	323	647	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
3,3'-Dichlorobenzidine	ND	259	517	ug/kg dry	10	04/28/22 18:49	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	323	647	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1,3-Dinitrobenzene	ND	323	647	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1,4-Dinitrobenzene	ND	323	647	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
Pyridine	ND	64.7	129	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1,2-Dichlorobenzene	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1,3-Dichlorobenzene	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
1,4-Dichlorobenzene	ND	32.3	64.7	ug/kg dry	10	04/28/22 18:49	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>04/28/22 18:49</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>68 %</i>		<i>44-120 %</i>	<i>10</i>	<i>04/28/22 18:49</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>45 %</i>		<i>33-122 %</i>	<i>10</i>	<i>04/28/22 18:49</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>68 %</i>		<i>54-127 %</i>	<i>10</i>	<i>04/28/22 18:49</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>40 %</i>		<i>35-120 %</i>	<i>10</i>	<i>04/28/22 18:49</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>40 %</i>		<i>39-132 %</i>	<i>10</i>	<i>04/28/22 18:49</i>	<i>EPA 8270E</i>	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-06 (A2D0663-34RE1)		Matrix: Soil			Batch: 22D0935			PRO
Acenaphthene	152	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Acenaphthylene	ND	26.3	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Anthracene	98.6	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Benz(a)anthracene	81.2	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Benzo(a)pyrene	63.2	19.7	39.4	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Benzo(b)fluoranthene	95.8	19.7	39.4	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Benzo(k)fluoranthene	32.7	19.7	39.4	ug/kg dry	10	04/27/22 03:11	EPA 8270E	J
Benzo(g,h,i)perylene	34.6	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Chrysene	133	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Dibenz(a,h)anthracene	ND	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Fluoranthene	446	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Fluorene	146	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Indeno(1,2,3-cd)pyrene	24.3	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	J, Q-42
1-Methylnaphthalene	71.9	26.3	52.5	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2-Methylnaphthalene	155	26.3	52.5	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Naphthalene	501	26.3	52.5	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Phenanthrene	512	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Pyrene	354	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Carbazole	28.2	19.7	39.4	ug/kg dry	10	04/27/22 03:11	EPA 8270E	J
Dibenzofuran	138	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2-Chlorophenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
4-Chloro-3-methylphenol	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,4-Dichlorophenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,4-Dimethylphenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,4-Dinitrophenol	ND	328	657	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	328	657	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2-Methylphenol	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
3+4-Methylphenol(s)	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2-Nitrophenol	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
4-Nitrophenol	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42
Pentachlorophenol (PCP)	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42
Phenol	ND	26.3	52.5	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-06 (A2D0663-34RE1)				Matrix: Soil		Batch: 22D0935		PRO
2,3,5,6-Tetrachlorophenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42
2,4,5-Trichlorophenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42
Nitrobenzene	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,4,6-Trichlorophenol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	197	394	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Butyl benzyl phthalate	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Diethylphthalate	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Dimethylphthalate	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Di-n-butylphthalate	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Di-n-octyl phthalate	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
N-Nitrosodimethylamine	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
N-Nitrosodiphenylamine	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Hexachlorobenzene	ND	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Hexachlorobutadiene	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Hexachlorocyclopentadiene	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Hexachloroethane	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2-Chloronaphthalene	ND	13.1	26.3	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
1,2,4-Trichlorobenzene	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
4-Bromophenyl phenyl ether	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Aniline	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42
4-Chloroaniline	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2-Nitroaniline	ND	263	525	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
3-Nitroaniline	ND	263	525	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
4-Nitroaniline	ND	263	525	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,4-Dinitrotoluene	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
2,6-Dinitrotoluene	ND	131	263	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Benzoic acid	ND	1650	3280	ug/kg dry	10	04/27/22 03:11	EPA 8270E	
Benzyl alcohol	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
DU-06 (A2D0663-34RE1)				Matrix: Soil		Batch: 22D0935		PRO	
Isophorone	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
Azobenzene (1,2-DPH)	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
Bis(2-Ethylhexyl) adipate	ND	328	657	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
3,3'-Dichlorobenzidine	ND	263	525	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-52	
1,2-Dinitrobenzene	ND	328	657	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
1,3-Dinitrobenzene	ND	328	657	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
1,4-Dinitrobenzene	ND	328	657	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
Pyridine	ND	65.7	131	ug/kg dry	10	04/27/22 03:11	EPA 8270E	Q-42	
1,2-Dichlorobenzene	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
1,3-Dichlorobenzene	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
1,4-Dichlorobenzene	ND	32.8	65.7	ug/kg dry	10	04/27/22 03:11	EPA 8270E		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>		<i>88 %</i>	<i>Limits:</i>	<i>37-122 %</i>	<i>10</i>	<i>04/27/22 03:11</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>				<i>93 %</i>	<i>44-120 %</i>	<i>10</i>	<i>04/27/22 03:11</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>				<i>73 %</i>	<i>33-122 %</i>	<i>10</i>	<i>04/27/22 03:11</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>				<i>97 %</i>	<i>54-127 %</i>	<i>10</i>	<i>04/27/22 03:11</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>				<i>56 %</i>	<i>35-120 %</i>	<i>10</i>	<i>04/27/22 03:11</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>				<i>72 %</i>	<i>39-132 %</i>	<i>10</i>	<i>04/27/22 03:11</i>	<i>EPA 8270E</i>	
DU-07 (A2D0663-36)				Matrix: Soil		Batch: 22D1068		PRO	
Acenaphthene	ND	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Acenaphthylene	56.8	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Anthracene	48.2	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Benz(a)anthracene	209	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Benzo(a)pyrene	409	19.8	39.7	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Benzo(b)fluoranthene	389	19.8	39.7	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Benzo(k)fluoranthene	142	19.8	39.7	ug/kg dry	10	04/28/22 21:09	EPA 8270E	M-05	
Benzo(g,h,i)perylene	465	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Chrysene	338	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Dibenz(a,h)anthracene	32.5	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Fluoranthene	675	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
Fluorene	24.9	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E	J	
Indeno(1,2,3-cd)pyrene	365	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
1-Methylnaphthalene	ND	26.5	52.9	ug/kg dry	10	04/28/22 21:09	EPA 8270E		
2-Methylnaphthalene	ND	26.5	52.9	ug/kg dry	10	04/28/22 21:09	EPA 8270E		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-07 (A2D0663-36)				Matrix: Soil		Batch: 22D1068		PRO
Naphthalene	130	26.5	52.9	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Phenanthrene	384	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Pyrene	926	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Carbazole	ND	19.8	39.7	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Dibenzofuran	ND	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2-Chlorophenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4-Chloro-3-methylphenol	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,4-Dichlorophenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,4-Dimethylphenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,4-Dinitrophenol	ND	330	662	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	330	662	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2-Methylphenol	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
3+4-Methylphenol(s)	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2-Nitrophenol	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4-Nitrophenol	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Pentachlorophenol (PCP)	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Phenol	ND	26.5	52.9	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,4,5-Trichlorophenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Nitrobenzene	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,4,6-Trichlorophenol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	198	397	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Butyl benzyl phthalate	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Diethylphthalate	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Dimethylphthalate	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Di-n-butylphthalate	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Di-n-octyl phthalate	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
N-Nitrosodimethylamine	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
N-Nitrosodiphenylamine	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-07 (A2D0663-36)				Matrix: Soil		Batch: 22D1068		PRO
2,2'-Oxybis(1-Chloropropane)	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Hexachlorobenzene	ND	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Hexachlorobutadiene	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Hexachlorocyclopentadiene	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Hexachloroethane	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2-Chloronaphthalene	ND	13.2	26.5	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
1,2,4-Trichlorobenzene	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4-Bromophenyl phenyl ether	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Aniline	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4-Chloroaniline	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2-Nitroaniline	ND	265	529	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
3-Nitroaniline	ND	265	529	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
4-Nitroaniline	ND	265	529	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,4-Dinitrotoluene	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
2,6-Dinitrotoluene	ND	132	265	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Benzoic acid	ND	1660	3300	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Benzyl alcohol	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Isophorone	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Azobenzene (1,2-DPH)	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	330	662	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
3,3'-Dichlorobenzidine	ND	265	529	ug/kg dry	10	04/28/22 21:09	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	330	662	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
1,3-Dinitrobenzene	ND	330	662	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
1,4-Dinitrobenzene	ND	330	662	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
Pyridine	ND	66.2	132	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
1,2-Dichlorobenzene	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
1,3-Dichlorobenzene	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
1,4-Dichlorobenzene	ND	33.0	66.2	ug/kg dry	10	04/28/22 21:09	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>04/28/22 21:09</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>69 %</i>		<i>44-120 %</i>		<i>10</i>	<i>04/28/22 21:09</i>	<i>EPA 8270E</i>
<i>Phenol-d6 (Surr)</i>		<i>50 %</i>		<i>33-122 %</i>		<i>10</i>	<i>04/28/22 21:09</i>	<i>EPA 8270E</i>
<i>p-Terphenyl-d14 (Surr)</i>		<i>72 %</i>		<i>54-127 %</i>		<i>10</i>	<i>04/28/22 21:09</i>	<i>EPA 8270E</i>
<i>2-Fluorophenol (Surr)</i>		<i>42 %</i>		<i>35-120 %</i>		<i>10</i>	<i>04/28/22 21:09</i>	<i>EPA 8270E</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
DU-07 (A2D0663-36)				Matrix: Soil		Batch: 22D1068		PRO	
<i>Surrogate: 2,4,6-Tribromophenol (Surr)</i>		<i>Recovery: 32 %</i>		<i>Limits: 39-132 %</i>		<i>10</i>	<i>04/28/22 21:09</i>	<i>EPA 8270E</i>	<i>S-06</i>
DU-08 (A2D0663-38)				Matrix: Soil		Batch: 22D1068		PRO	
Acenaphthene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Acenaphthylene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Anthracene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Benz(a)anthracene	60.2	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Benzo(a)pyrene	47.2	19.2	38.4	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Benzo(b)fluoranthene	41.9	19.2	38.4	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Benzo(k)fluoranthene	ND	19.2	38.4	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Benzo(g,h,i)perylene	19.9	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E	J	
Chrysene	130	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Dibenz(a,h)anthracene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Fluoranthene	34.9	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Fluorene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Indeno(1,2,3-cd)pyrene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
1-Methylnaphthalene	ND	25.7	51.2	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2-Methylnaphthalene	ND	25.7	51.2	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Naphthalene	94.1	25.7	51.2	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Phenanthrene	63.2	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Pyrene	86.4	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Carbazole	ND	19.2	38.4	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Dibenzofuran	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2-Chlorophenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
4-Chloro-3-methylphenol	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2,4-Dichlorophenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2,4-Dimethylphenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2,4-Dinitrophenol	ND	320	641	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
4,6-Dinitro-2-methylphenol	ND	320	641	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2-Methylphenol	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
3+4-Methylphenol(s)	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
2-Nitrophenol	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
4-Nitrophenol	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E		
Pentachlorophenol (PCP)	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E		

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-08 (A2D0663-38)				Matrix: Soil		Batch: 22D1068		PRO
Phenol	ND	25.7	51.2	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,4,5-Trichlorophenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Nitrobenzene	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,4,6-Trichlorophenol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	192	384	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Butyl benzyl phthalate	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Diethylphthalate	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Dimethylphthalate	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Di-n-butylphthalate	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Di-n-octyl phthalate	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
N-Nitrosodimethylamine	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
N-Nitrosodiphenylamine	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Hexachlorobenzene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Hexachlorobutadiene	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Hexachlorocyclopentadiene	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Hexachloroethane	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2-Chloronaphthalene	ND	12.8	25.7	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
1,2,4-Trichlorobenzene	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
4-Bromophenyl phenyl ether	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Aniline	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
4-Chloroaniline	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2-Nitroaniline	ND	257	512	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
3-Nitroaniline	ND	257	512	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
4-Nitroaniline	ND	257	512	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,4-Dinitrotoluene	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
2,6-Dinitrotoluene	ND	128	257	ug/kg dry	10	04/28/22 21:42	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-08 (A2D0663-38)				Matrix: Soil		Batch: 22D1068		PRO
Benzoic acid	ND	1600	3200	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Benzyl alcohol	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Isophorone	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Azobenzene (1,2-DPH)	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	320	641	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
3,3'-Dichlorobenzidine	ND	257	512	ug/kg dry	10	04/28/22 21:42	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	320	641	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
1,3-Dinitrobenzene	ND	320	641	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
1,4-Dinitrobenzene	ND	320	641	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
Pyridine	ND	64.1	128	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
1,2-Dichlorobenzene	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
1,3-Dichlorobenzene	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
1,4-Dichlorobenzene	ND	32.0	64.1	ug/kg dry	10	04/28/22 21:42	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>04/28/22 21:42</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>71 %</i>		<i>44-120 %</i>	<i>10</i>	<i>04/28/22 21:42</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>46 %</i>		<i>33-122 %</i>	<i>10</i>	<i>04/28/22 21:42</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>71 %</i>		<i>54-127 %</i>	<i>10</i>	<i>04/28/22 21:42</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>39 %</i>		<i>35-120 %</i>	<i>10</i>	<i>04/28/22 21:42</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>25 %</i>		<i>39-132 %</i>	<i>10</i>	<i>04/28/22 21:42</i>	<i>EPA 8270E</i>	<i>S-06</i>
DU-DUP (A2D0663-40)				Matrix: Soil		Batch: 22D1068		PRO
Acenaphthene	19.0	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	J
Acenaphthylene	19.2	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	J
Anthracene	20.7	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	J
Benz(a)anthracene	32.9	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Benzo(a)pyrene	50.8	19.8	39.6	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Benzo(b)fluoranthene	59.3	19.8	39.6	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Benzo(k)fluoranthene	22.7	19.8	39.6	ug/kg dry	10	04/28/22 19:24	EPA 8270E	J
Benzo(g,h,i)perylene	33.0	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Chrysene	43.5	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Dibenz(a,h)anthracene	ND	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Fluoranthene	109	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Fluorene	ND	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Indeno(1,2,3-cd)pyrene	24.0	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	J

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-DUP (A2D0663-40)				Matrix: Soil		Batch: 22D1068		PRO
1-Methylnaphthalene	ND	26.4	52.8	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2-Methylnaphthalene	ND	26.4	52.8	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Naphthalene	111	26.4	52.8	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Phenanthrene	95.7	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Pyrene	108	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Carbazole	ND	19.8	39.6	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Dibenzofuran	ND	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2-Chlorophenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4-Chloro-3-methylphenol	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,4-Dichlorophenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,4-Dimethylphenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,4-Dinitrophenol	ND	330	660	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	330	660	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2-Methylphenol	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
3+4-Methylphenol(s)	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2-Nitrophenol	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4-Nitrophenol	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Pentachlorophenol (PCP)	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Phenol	ND	26.4	52.8	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,4,5-Trichlorophenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Nitrobenzene	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,4,6-Trichlorophenol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	198	396	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Butyl benzyl phthalate	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Diethylphthalate	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Dimethylphthalate	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Di-n-butylphthalate	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Di-n-octyl phthalate	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
N-Nitrosodimethylamine	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
N-Nitrosodiphenylamine	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-DUP (A2D0663-40)				Matrix: Soil		Batch: 22D1068		PRO
Bis(2-Chloroethoxy) methane	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Hexachlorobenzene	ND	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Hexachlorobutadiene	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Hexachlorocyclopentadiene	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Hexachloroethane	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2-Chloronaphthalene	ND	13.2	26.4	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
1,2,4-Trichlorobenzene	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4-Bromophenyl phenyl ether	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Aniline	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4-Chloroaniline	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2-Nitroaniline	ND	264	528	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
3-Nitroaniline	ND	264	528	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
4-Nitroaniline	ND	264	528	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,4-Dinitrotoluene	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
2,6-Dinitrotoluene	ND	132	264	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Benzoic acid	ND	1650	3300	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Benzyl alcohol	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Isophorone	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Azobenzene (1,2-DPH)	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	330	660	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
3,3'-Dichlorobenzidine	ND	264	528	ug/kg dry	10	04/28/22 19:24	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	330	660	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
1,3-Dinitrobenzene	ND	330	660	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
1,4-Dinitrobenzene	ND	330	660	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
Pyridine	ND	66.0	132	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
1,2-Dichlorobenzene	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
1,3-Dichlorobenzene	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
1,4-Dichlorobenzene	ND	33.0	66.0	ug/kg dry	10	04/28/22 19:24	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 82 %</i>		<i>Limits: 37-122 %</i>		<i>10</i>	<i>04/28/22 19:24</i>	<i>EPA 8270E</i>
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>		<i>10</i>	<i>04/28/22 19:24</i>	<i>EPA 8270E</i>

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-DUP (A2D0663-40)				Matrix: Soil		Batch: 22D1068		PRO
<i>Surrogate: Phenol-d6 (Surr)</i>		<i>Recovery: 58 %</i>		<i>Limits: 33-122 %</i>	10	04/28/22 19:24	EPA 8270E	
<i>p-Terphenyl-d14 (Surr)</i>		<i>86 %</i>		<i>54-127 %</i>	10	04/28/22 19:24	EPA 8270E	
<i>2-Fluorophenol (Surr)</i>		<i>46 %</i>		<i>35-120 %</i>	10	04/28/22 19:24	EPA 8270E	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>34 %</i>		<i>39-132 %</i>	10	04/28/22 19:24	EPA 8270E	S-06
DU-TRIP (A2D0663-42)				Matrix: Soil		Batch: 22D1068		PRO
Acenaphthene	24.0	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	J
Acenaphthylene	19.7	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	J
Anthracene	17.5	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	J
Benz(a)anthracene	41.7	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Benzo(a)pyrene	57.9	20.1	40.3	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Benzo(b)fluoranthene	74.1	20.1	40.3	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Benzo(k)fluoranthene	26.9	20.1	40.3	ug/kg dry	10	04/28/22 20:00	EPA 8270E	J
Benzo(g,h,i)perylene	44.4	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Chrysene	54.4	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Dibenz(a,h)anthracene	ND	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Fluoranthene	124	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Fluorene	15.4	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	J
Indeno(1,2,3-cd)pyrene	30.0	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1-Methylnaphthalene	ND	26.9	53.7	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2-Methylnaphthalene	ND	26.9	53.7	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Naphthalene	96.0	26.9	53.7	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Phenanthrene	82.8	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Pyrene	112	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Carbazole	ND	20.1	40.3	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Dibenzofuran	ND	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2-Chlorophenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
4-Chloro-3-methylphenol	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,4-Dichlorophenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,4-Dimethylphenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,4-Dinitrophenol	ND	335	672	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	335	672	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2-Methylphenol	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
3+4-Methylphenol(s)	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-TRIP (A2D0663-42)				Matrix: Soil		Batch: 22D1068		PRO
2-Nitrophenol	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
4-Nitrophenol	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Pentachlorophenol (PCP)	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Phenol	ND	26.9	53.7	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,4,5-Trichlorophenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Nitrobenzene	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,4,6-Trichlorophenol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	201	403	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Butyl benzyl phthalate	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Diethylphthalate	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Dimethylphthalate	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Di-n-butylphthalate	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Di-n-octyl phthalate	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
N-Nitrosodimethylamine	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
N-Nitrosodiphenylamine	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Hexachlorobenzene	ND	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Hexachlorobutadiene	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Hexachlorocyclopentadiene	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Hexachloroethane	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2-Chloronaphthalene	ND	13.4	26.9	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1,2,4-Trichlorobenzene	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
4-Bromophenyl phenyl ether	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Aniline	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
4-Chloroaniline	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2-Nitroaniline	ND	269	537	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
3-Nitroaniline	ND	269	537	ug/kg dry	10	04/28/22 20:00	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-TRIP (A2D0663-42)				Matrix: Soil		Batch: 22D1068		PRO
4-Nitroaniline	ND	269	537	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,4-Dinitrotoluene	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
2,6-Dinitrotoluene	ND	134	269	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Benzoic acid	ND	1680	3350	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Benzyl alcohol	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Isophorone	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Azobenzene (1,2-DPH)	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	335	672	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
3,3'-Dichlorobenzidine	ND	269	537	ug/kg dry	10	04/28/22 20:00	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	335	672	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1,3-Dinitrobenzene	ND	335	672	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1,4-Dinitrobenzene	ND	335	672	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
Pyridine	ND	67.2	134	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1,2-Dichlorobenzene	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1,3-Dichlorobenzene	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
1,4-Dichlorobenzene	ND	33.5	67.2	ug/kg dry	10	04/28/22 20:00	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 65 %</i>		<i>Limits: 37-122 %</i>	<i>10</i>	<i>04/28/22 20:00</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>		<i>67 %</i>		<i>44-120 %</i>	<i>10</i>	<i>04/28/22 20:00</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>		<i>46 %</i>		<i>33-122 %</i>	<i>10</i>	<i>04/28/22 20:00</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>		<i>72 %</i>		<i>54-127 %</i>	<i>10</i>	<i>04/28/22 20:00</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>		<i>35 %</i>		<i>35-120 %</i>	<i>10</i>	<i>04/28/22 20:00</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>		<i>31 %</i>		<i>39-132 %</i>	<i>10</i>	<i>04/28/22 20:00</i>	<i>EPA 8270E</i>	S-06

EB-041322 (A2D0663-43)				Matrix: Water		Batch: 22D0716		
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Acenaphthene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Acenaphthylene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Anthracene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Benz(a)anthracene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Benzo(a)pyrene	ND	0.0165	0.0330	ug/L	1	04/20/22 21:14	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0165	0.0330	ug/L	1	04/20/22 21:14	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0165	0.0330	ug/L	1	04/20/22 21:14	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Chrysene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB-041322 (A2D0663-43)			Matrix: Water			Batch: 22D0716		
Fluoranthene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Fluorene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
1-Methylnaphthalene	ND	0.0220	0.0440	ug/L	1	04/20/22 21:14	EPA 8270E	
2-Methylnaphthalene	ND	0.0220	0.0440	ug/L	1	04/20/22 21:14	EPA 8270E	
Naphthalene	ND	0.0220	0.0440	ug/L	1	04/20/22 21:14	EPA 8270E	
Phenanthrene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Pyrene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Carbazole	ND	0.0165	0.0330	ug/L	1	04/20/22 21:14	EPA 8270E	
Dibenzofuran	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
2-Chlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
4-Chloro-3-methylphenol	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
2,4-Dichlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
2,4-Dimethylphenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
2,4-Dinitrophenol	ND	0.275	0.549	ug/L	1	04/20/22 21:14	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	0.275	0.549	ug/L	1	04/20/22 21:14	EPA 8270E	
2-Methylphenol	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
3+4-Methylphenol(s)	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
2-Nitrophenol	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
4-Nitrophenol	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
Pentachlorophenol (PCP)	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
Phenol	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
2,4,5-Trichlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
2,4,6-Trichlorophenol	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
Butyl benzyl phthalate	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
Diethylphthalate	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
Dimethylphthalate	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
Di-n-butylphthalate	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
Di-n-octyl phthalate	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
N-Nitrosodimethylamine	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB-041322 (A2D0663-43)			Matrix: Water			Batch: 22D0716		
N-Nitroso-di-n-propylamine	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
N-Nitrosodiphenylamine	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	0.0549	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Hexachlorobenzene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
Hexachlorobutadiene	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Hexachlorocyclopentadiene	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
Hexachloroethane	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
2-Chloronaphthalene	ND	0.0110	0.0220	ug/L	1	04/20/22 21:14	EPA 8270E	
1,2,4-Trichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
4-Bromophenyl phenyl ether	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Aniline	ND	0.0549	0.110	ug/L	1	04/20/22 21:14	EPA 8270E	
4-Chloroaniline	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
2-Nitroaniline	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
3-Nitroaniline	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
4-Nitroaniline	ND	0.220	0.440	ug/L	1	04/20/22 21:14	EPA 8270E	
Nitrobenzene	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
2,4-Dinitrotoluene	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
2,6-Dinitrotoluene	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
Benzoic acid	ND	2.75	2.75	ug/L	1	04/20/22 21:14	EPA 8270E	
Isophorone	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Azobenzene (1,2-DPH)	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	0.275	0.549	ug/L	1	04/20/22 21:14	EPA 8270E	
3,3'-Dichlorobenzidine	ND	0.549	1.10	ug/L	1	04/20/22 21:14	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	0.275	0.549	ug/L	1	04/20/22 21:14	EPA 8270E	
1,3-Dinitrobenzene	ND	0.275	0.549	ug/L	1	04/20/22 21:14	EPA 8270E	
1,4-Dinitrobenzene	ND	0.275	0.549	ug/L	1	04/20/22 21:14	EPA 8270E	
Pyridine	ND	0.110	0.220	ug/L	1	04/20/22 21:14	EPA 8270E	
1,2-Dichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
1,3-Dichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	
1,4-Dichlorobenzene	ND	0.0275	0.0549	ug/L	1	04/20/22 21:14	EPA 8270E	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB-041322 (A2D0663-43)				Matrix: Water		Batch: 22D0716		
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>			<i>Recovery: 76 %</i>	<i>Limits: 44-120 %</i>	<i>1</i>	<i>04/20/22 21:14</i>	<i>EPA 8270E</i>	
<i>2-Fluorobiphenyl (Surr)</i>			<i>67 %</i>	<i>44-120 %</i>	<i>1</i>	<i>04/20/22 21:14</i>	<i>EPA 8270E</i>	
<i>Phenol-d6 (Surr)</i>			<i>22 %</i>	<i>10-133 %</i>	<i>1</i>	<i>04/20/22 21:14</i>	<i>EPA 8270E</i>	
<i>p-Terphenyl-d14 (Surr)</i>			<i>78 %</i>	<i>50-134 %</i>	<i>1</i>	<i>04/20/22 21:14</i>	<i>EPA 8270E</i>	
<i>2-Fluorophenol (Surr)</i>			<i>35 %</i>	<i>19-120 %</i>	<i>1</i>	<i>04/20/22 21:14</i>	<i>EPA 8270E</i>	
<i>2,4,6-Tribromophenol (Surr)</i>			<i>73 %</i>	<i>43-140 %</i>	<i>1</i>	<i>04/20/22 21:14</i>	<i>EPA 8270E</i>	
EB-041322 (A2D0663-43RE1)				Matrix: Water		Batch: 22D0716		
Benzyl alcohol	ND	0.110	0.220	ug/L	1	04/21/22 16:08	EPA 8270E	

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB01-0.5-3 (A2D0663-01) Matrix: Soil								
Batch: 22D1163								
Arsenic	2.62	0.683	1.37	mg/kg dry	10	05/02/22 16:50	EPA 6020B	
Barium	13.6	0.683	1.37	mg/kg dry	10	05/02/22 16:50	EPA 6020B	
Cadmium	0.137	0.137	0.273	mg/kg dry	10	05/02/22 16:50	EPA 6020B	J
Chromium	10.9	0.683	1.37	mg/kg dry	10	05/02/22 16:50	EPA 6020B	Q-42
Lead	1.72	0.137	0.273	mg/kg dry	10	05/02/22 16:50	EPA 6020B	Q-42
Mercury	ND	0.0547	0.109	mg/kg dry	10	05/02/22 16:50	EPA 6020B	
Selenium	ND	0.683	1.37	mg/kg dry	10	05/02/22 16:50	EPA 6020B	
Silver	ND	0.137	0.273	mg/kg dry	10	05/02/22 16:50	EPA 6020B	
SB02-0-3 (A2D0663-02) Matrix: Soil								
Batch: 22D1163								
Arsenic	7.08	0.675	1.35	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Barium	31.4	0.675	1.35	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Cadmium	ND	0.135	0.270	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Chromium	10.7	0.675	1.35	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Lead	4.84	0.135	0.270	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Mercury	ND	0.0540	0.108	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Selenium	ND	0.675	1.35	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
Silver	ND	0.135	0.270	mg/kg dry	10	05/02/22 17:05	EPA 6020B	
SB02-3-7 (A2D0663-03) Matrix: Soil								
Batch: 22D1163								
Arsenic	5.46	0.747	1.49	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Barium	123	0.747	1.49	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Cadmium	ND	0.149	0.299	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Chromium	12.1	0.747	1.49	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Lead	6.30	0.149	0.299	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Mercury	ND	0.0598	0.120	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Selenium	ND	0.747	1.49	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
Silver	ND	0.149	0.299	mg/kg dry	10	05/02/22 17:11	EPA 6020B	
SB03-0.5-3 (A2D0663-04) Matrix: Soil								
Batch: 22D1163								

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB03-0.5-3 (A2D0663-04) Matrix: Soil								
Arsenic	3.60	0.538	1.08	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Barium	9.70	0.538	1.08	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Cadmium	ND	0.108	0.215	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Chromium	8.76	0.538	1.08	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Lead	2.18	0.108	0.215	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Mercury	ND	0.0430	0.0860	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Selenium	ND	0.538	1.08	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
Silver	ND	0.108	0.215	mg/kg dry	10	05/02/22 17:16	EPA 6020B	
SB03-3-5 (A2D0663-05) Matrix: Soil								
Batch: 22D1163								
Arsenic	3.50	0.602	1.20	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Barium	11.1	0.602	1.20	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Cadmium	ND	0.120	0.241	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Chromium	8.98	0.602	1.20	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Lead	3.45	0.120	0.241	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Mercury	ND	0.0482	0.0963	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Selenium	ND	0.602	1.20	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
Silver	ND	0.120	0.241	mg/kg dry	10	05/02/22 17:21	EPA 6020B	
SB04-0-3 (A2D0663-06) Matrix: Soil								
Batch: 22D1163								
Arsenic	4.91	0.699	1.40	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Barium	34.6	0.699	1.40	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Cadmium	ND	0.140	0.279	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Chromium	14.2	0.699	1.40	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Lead	81.8	0.140	0.279	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Mercury	ND	0.0559	0.112	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Selenium	ND	0.699	1.40	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
Silver	ND	0.140	0.279	mg/kg dry	10	05/02/22 17:36	EPA 6020B	
SB05-0.5-3 (A2D0663-07) Matrix: Soil								
Batch: 22D1163								
Arsenic	3.85	0.667	1.33	mg/kg dry	10	05/02/22 17:41	EPA 6020B	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB05-0.5-3 (A2D0663-07)				Matrix: Soil				
Barium	23.0	0.667	1.33	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
Cadmium	ND	0.133	0.267	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
Chromium	16.7	0.667	1.33	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
Lead	6.82	0.133	0.267	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
Mercury	ND	0.0534	0.107	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
Selenium	ND	0.667	1.33	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
Silver	ND	0.133	0.267	mg/kg dry	10	05/02/22 17:41	EPA 6020B	
SB05-3-10 (A2D0663-08)				Matrix: Soil				
Batch: 22D1163								
Arsenic	3.16	0.635	1.27	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Barium	17.8	0.635	1.27	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Cadmium	ND	0.127	0.254	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Chromium	12.4	0.635	1.27	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Lead	3.19	0.127	0.254	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Mercury	ND	0.0508	0.102	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Selenium	ND	0.635	1.27	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
Silver	ND	0.127	0.254	mg/kg dry	10	05/02/22 17:46	EPA 6020B	
SB06-0-3 (A2D0663-09)				Matrix: Soil				
Batch: 22D1163								
Arsenic	3.64	0.567	1.13	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
Barium	21.4	0.567	1.13	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
Cadmium	0.189	0.113	0.227	mg/kg dry	10	05/02/22 17:51	EPA 6020B	J
Chromium	21.7	0.567	1.13	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
Lead	2.79	0.113	0.227	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
Mercury	ND	0.0453	0.0907	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
Selenium	ND	0.567	1.13	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
Silver	ND	0.113	0.227	mg/kg dry	10	05/02/22 17:51	EPA 6020B	
SB07-0.5-3 (A2D0663-10)				Matrix: Soil				
Batch: 22D1163								
Arsenic	1.22	0.551	1.10	mg/kg dry	10	05/02/22 17:56	EPA 6020B	
Barium	68.6	0.551	1.10	mg/kg dry	10	05/02/22 17:56	EPA 6020B	

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB07-0.5-3 (A2D0663-10)				Matrix: Soil					
Cadmium	ND	0.110	0.220	mg/kg dry	10	05/02/22 17:56	EPA 6020B		
Chromium	37.4	0.551	1.10	mg/kg dry	10	05/02/22 17:56	EPA 6020B		
Lead	1.16	0.110	0.220	mg/kg dry	10	05/02/22 17:56	EPA 6020B		
Mercury	ND	0.0440	0.0881	mg/kg dry	10	05/02/22 17:56	EPA 6020B		
Selenium	ND	0.551	1.10	mg/kg dry	10	05/02/22 17:56	EPA 6020B		
Silver	ND	0.110	0.220	mg/kg dry	10	05/02/22 17:56	EPA 6020B		
SB07-3-6 (A2D0663-11)				Matrix: Soil					
Batch: 22D1163									
Arsenic	5.18	0.826	1.65	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
Barium	25.2	0.826	1.65	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
Cadmium	0.211	0.165	0.330	mg/kg dry	10	05/02/22 18:01	EPA 6020B	J	
Chromium	23.6	0.826	1.65	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
Lead	9.00	0.165	0.330	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
Mercury	ND	0.0660	0.132	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
Selenium	ND	0.826	1.65	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
Silver	ND	0.165	0.330	mg/kg dry	10	05/02/22 18:01	EPA 6020B		
SB08-0-3 (A2D0663-12)				Matrix: Soil					
Batch: 22D1163									
Arsenic	2.16	0.644	1.29	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
Barium	36.7	0.644	1.29	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
Cadmium	0.132	0.129	0.258	mg/kg dry	10	05/02/22 18:06	EPA 6020B	J	
Chromium	50.1	0.644	1.29	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
Lead	7.40	0.129	0.258	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
Mercury	ND	0.0515	0.103	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
Selenium	ND	0.644	1.29	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
Silver	ND	0.129	0.258	mg/kg dry	10	05/02/22 18:06	EPA 6020B		
SB-1 (A2D0663-13)				Matrix: Water					
Batch: 22E0126									
Arsenic	8.62	0.500	1.00	ug/L	1	05/06/22 01:19	EPA 6020B		
Barium	12.3	1.00	2.00	ug/L	1	05/06/22 01:19	EPA 6020B		
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 01:19	EPA 6020B		

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB-1 (A2D0663-13)					Matrix: Water				
Chromium	3.00	1.00	2.00	ug/L	1	05/06/22 01:19	EPA 6020B		
Lead	0.597	0.110	0.200	ug/L	1	05/06/22 01:19	EPA 6020B		
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 01:19	EPA 6020B		
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 01:19	EPA 6020B		
Silver	ND	0.100	0.200	ug/L	1	05/06/22 01:19	EPA 6020B		
SB-2 (A2D0663-14)					Matrix: Water				
Batch: 22E0126									
Arsenic	ND	0.500	1.00	ug/L	1	05/06/22 01:34	EPA 6020B		
Barium	3.59	1.00	2.00	ug/L	1	05/06/22 01:34	EPA 6020B		
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 01:34	EPA 6020B		
Chromium	ND	1.00	2.00	ug/L	1	05/06/22 01:34	EPA 6020B		
Lead	0.845	0.110	0.200	ug/L	1	05/06/22 01:34	EPA 6020B		
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 01:34	EPA 6020B		
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 01:34	EPA 6020B		
Silver	ND	0.100	0.200	ug/L	1	05/06/22 01:34	EPA 6020B		
SB-3 (A2D0663-15)					Matrix: Water				
Batch: 22E0126									
Arsenic	1.55	0.500	1.00	ug/L	1	05/06/22 01:48	EPA 6020B		
Barium	12.6	1.00	2.00	ug/L	1	05/06/22 01:48	EPA 6020B		
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 01:48	EPA 6020B		
Chromium	ND	1.00	2.00	ug/L	1	05/06/22 01:48	EPA 6020B		
Lead	0.114	0.110	0.200	ug/L	1	05/06/22 01:48	EPA 6020B	J	
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 01:48	EPA 6020B		
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 01:48	EPA 6020B		
Silver	ND	0.100	0.200	ug/L	1	05/06/22 01:48	EPA 6020B		
SB-4 (A2D0663-16)					Matrix: Water				
Batch: 22E0126									
Arsenic	1.74	0.500	1.00	ug/L	1	05/06/22 01:53	EPA 6020B		
Barium	67.5	1.00	2.00	ug/L	1	05/06/22 01:53	EPA 6020B		
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 01:53	EPA 6020B		
Chromium	1.59	1.00	2.00	ug/L	1	05/06/22 01:53	EPA 6020B	J	

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 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-4 (A2D0663-16) Matrix: Water								
Lead	0.482	0.110	0.200	ug/L	1	05/06/22 01:53	EPA 6020B	
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 01:53	EPA 6020B	
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 01:53	EPA 6020B	
Silver	ND	0.100	0.200	ug/L	1	05/06/22 01:53	EPA 6020B	
SB-5 (A2D0663-17) Matrix: Water								
Batch: 22E0126								
Arsenic	1.90	0.500	1.00	ug/L	1	05/06/22 01:58	EPA 6020B	
Barium	34.5	1.00	2.00	ug/L	1	05/06/22 01:58	EPA 6020B	
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 01:58	EPA 6020B	
Chromium	14.4	1.00	2.00	ug/L	1	05/06/22 01:58	EPA 6020B	
Lead	10.1	0.110	0.200	ug/L	1	05/06/22 01:58	EPA 6020B	
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 01:58	EPA 6020B	
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 01:58	EPA 6020B	
Silver	ND	0.100	0.200	ug/L	1	05/06/22 01:58	EPA 6020B	
SB-6 (A2D0663-18) Matrix: Water								
Batch: 22E0126								
Arsenic	0.843	0.500	1.00	ug/L	1	05/06/22 02:03	EPA 6020B	J
Barium	12.9	1.00	2.00	ug/L	1	05/06/22 02:03	EPA 6020B	
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 02:03	EPA 6020B	
Chromium	1.15	1.00	2.00	ug/L	1	05/06/22 02:03	EPA 6020B	J
Lead	0.676	0.110	0.200	ug/L	1	05/06/22 02:03	EPA 6020B	
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 02:03	EPA 6020B	
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 02:03	EPA 6020B	
Silver	ND	0.100	0.200	ug/L	1	05/06/22 02:03	EPA 6020B	
SB-7 (A2D0663-19) Matrix: Water								
Batch: 22E0126								
Arsenic	39.9	0.500	1.00	ug/L	1	05/06/22 02:08	EPA 6020B	
Barium	1160	1.00	2.00	ug/L	1	05/06/22 02:08	EPA 6020B	
Cadmium	1.09	0.100	0.200	ug/L	1	05/06/22 02:08	EPA 6020B	
Chromium	279	1.00	2.00	ug/L	1	05/06/22 02:08	EPA 6020B	
Lead	152	0.110	0.200	ug/L	1	05/06/22 02:08	EPA 6020B	

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-7 (A2D0663-19) Matrix: Water								
Mercury	0.517	0.0400	0.0800	ug/L	1	05/06/22 02:08	EPA 6020B	
Selenium	4.85	0.500	1.00	ug/L	1	05/06/22 02:08	EPA 6020B	
Silver	0.367	0.100	0.200	ug/L	1	05/06/22 02:08	EPA 6020B	
SB-8 (A2D0663-20) Matrix: Water								
Batch: 22E0222								
Arsenic	1.21	0.500	1.00	ug/L	1	05/06/22 22:12	EPA 6020B	
Barium	82.5	1.00	2.00	ug/L	1	05/06/22 22:12	EPA 6020B	
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 22:12	EPA 6020B	
Chromium	2.25	1.00	2.00	ug/L	1	05/06/22 22:12	EPA 6020B	
Lead	1.82	0.110	0.200	ug/L	1	05/06/22 22:12	EPA 6020B	
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 22:12	EPA 6020B	
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 22:12	EPA 6020B	
Silver	ND	0.100	0.200	ug/L	1	05/06/22 22:12	EPA 6020B	
DUP-01 (A2D0663-21) Matrix: Soil								
Batch: 22D1163								
Arsenic	5.49	0.735	1.47	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
Barium	38.6	0.735	1.47	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
Cadmium	ND	0.147	0.294	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
Chromium	17.6	0.735	1.47	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
Lead	203	0.147	0.294	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
Mercury	0.0685	0.0588	0.118	mg/kg dry	10	05/02/22 18:11	EPA 6020B	J
Selenium	ND	0.735	1.47	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
Silver	ND	0.147	0.294	mg/kg dry	10	05/02/22 18:11	EPA 6020B	
DUP-X (A2D0663-22) Matrix: Water								
Batch: 22E0222								
Arsenic	1.23	0.500	1.00	ug/L	1	05/06/22 22:17	EPA 6020B	
Barium	85.1	1.00	2.00	ug/L	1	05/06/22 22:17	EPA 6020B	
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 22:17	EPA 6020B	
Chromium	2.46	1.00	2.00	ug/L	1	05/06/22 22:17	EPA 6020B	
Lead	1.14	0.110	0.200	ug/L	1	05/06/22 22:17	EPA 6020B	
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 22:17	EPA 6020B	

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
DUP-X (A2D0663-22)					Matrix: Water				
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 22:17	EPA 6020B		
Silver	ND	0.100	0.200	ug/L	1	05/06/22 22:17	EPA 6020B		
DU-01 (A2D0663-24)					Matrix: Soil				
Batch: 22D1163									
Arsenic	6.61	0.507	1.01	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO	
Barium	44.9	0.507	1.01	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO	
Cadmium	0.142	0.101	0.203	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO,J	
Chromium	27.3	0.507	1.01	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO	
Lead	13.7	0.101	0.203	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO	
Mercury	0.0755	0.0406	0.0811	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO,J	
Selenium	ND	0.507	1.01	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO	
Silver	ND	0.101	0.203	mg/kg dry	10	05/02/22 18:16	EPA 6020B	PRO	
DU-02 (A2D0663-26)					Matrix: Soil				
Batch: 22D1163									
Arsenic	4.71	0.511	1.02	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO	
Barium	58.7	0.511	1.02	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO	
Cadmium	0.149	0.102	0.204	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO,J	
Chromium	31.2	0.511	1.02	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO	
Lead	27.4	0.102	0.204	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO	
Mercury	0.0778	0.0408	0.0817	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO,J	
Selenium	ND	0.511	1.02	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO	
Silver	ND	0.102	0.204	mg/kg dry	10	05/02/22 18:21	EPA 6020B	PRO	
DU-03 (A2D0663-28)					Matrix: Soil				
Batch: 22D1163									
Arsenic	4.15	0.492	0.983	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO	
Barium	32.8	0.492	0.983	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO	
Cadmium	0.0984	0.0983	0.197	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO,J	
Chromium	16.7	0.492	0.983	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO	
Lead	7.41	0.0983	0.197	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO	
Mercury	0.0449	0.0393	0.0787	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO,J	
Selenium	ND	0.492	0.983	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO	

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
DU-03 (A2D0663-28)				Matrix: Soil					
Silver	ND	0.0983	0.197	mg/kg dry	10	05/02/22 18:37	EPA 6020B	PRO	
DU-04 (A2D0663-30)				Matrix: Soil					
Batch: 22D1163									
Arsenic	4.40	0.526	1.05	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO	
Barium	74.3	0.526	1.05	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO	
Cadmium	0.197	0.105	0.211	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO,J	
Chromium	21.9	0.526	1.05	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO	
Lead	18.7	0.105	0.211	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO	
Mercury	0.0464	0.0421	0.0842	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO,J	
Selenium	ND	0.526	1.05	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO	
Silver	ND	0.105	0.211	mg/kg dry	10	05/02/22 18:42	EPA 6020B	PRO	
DU-05 (A2D0663-32)				Matrix: Soil					
Batch: 22D1163									
Arsenic	7.63	0.542	1.08	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO	
Barium	59.2	0.542	1.08	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO	
Cadmium	0.144	0.108	0.217	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO,J	
Chromium	24.9	0.542	1.08	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO	
Lead	23.5	0.108	0.217	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO	
Mercury	0.0773	0.0433	0.0867	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO,J	
Selenium	ND	0.542	1.08	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO	
Silver	ND	0.108	0.217	mg/kg dry	10	05/02/22 18:47	EPA 6020B	PRO	
DU-06 (A2D0663-34)				Matrix: Soil					
Batch: 22D1163									
Arsenic	6.61	0.495	0.990	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO	
Barium	38.0	0.495	0.990	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO	
Cadmium	0.117	0.0990	0.198	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO,J	
Chromium	18.6	0.495	0.990	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO	
Lead	19.7	0.0990	0.198	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO	
Mercury	0.0510	0.0396	0.0792	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO,J	
Selenium	ND	0.495	0.990	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO	
Silver	ND	0.0990	0.198	mg/kg dry	10	05/02/22 18:52	EPA 6020B	PRO	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DU-07 (A2D0663-36) Matrix: Soil								
Batch: 22D1164								
Arsenic	4.57	0.492	0.984	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO
Barium	40.8	0.492	0.984	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO
Cadmium	ND	0.0984	0.197	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO
Chromium	21.7	0.492	0.984	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO
Lead	13.5	0.0984	0.197	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO,B-02
Mercury	0.0407	0.0394	0.0787	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO,J
Selenium	ND	0.492	0.984	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO
Silver	ND	0.0984	0.197	mg/kg dry	10	05/03/22 16:54	EPA 6020B	PRO
DU-08 (A2D0663-38) Matrix: Soil								
Batch: 22D1164								
Arsenic	3.19	0.508	1.02	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
Barium	46.1	0.508	1.02	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
Cadmium	ND	0.102	0.203	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
Chromium	23.2	0.508	1.02	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
Lead	5.82	0.102	0.203	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO,B-02
Mercury	ND	0.0407	0.0813	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
Selenium	ND	0.508	1.02	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
Silver	ND	0.102	0.203	mg/kg dry	10	05/03/22 16:59	EPA 6020B	PRO
DU-DUP (A2D0663-40) Matrix: Soil								
Batch: 22D1164								
Arsenic	4.78	0.555	1.11	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
Barium	49.3	0.555	1.11	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
Cadmium	6.25	0.111	0.222	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
Chromium	30.9	0.555	1.11	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
Lead	16.8	0.111	0.222	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO,B-02
Mercury	0.0895	0.0444	0.0888	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
Selenium	ND	0.555	1.11	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
Silver	ND	0.111	0.222	mg/kg dry	10	05/03/22 17:04	EPA 6020B	PRO
DU-TRIP (A2D0663-42) Matrix: Soil								
Batch: 22D1164								

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
				Matrix: Soil					
DU-TRIP (A2D0663-42)									
Arsenic	4.82	0.486	0.973	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO	
Barium	47.0	0.486	0.973	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO	
Cadmium	0.268	0.0973	0.195	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO	
Chromium	27.7	0.486	0.973	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO	
Lead	13.6	0.0973	0.195	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO,B-02	
Mercury	0.0601	0.0389	0.0778	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO,J	
Selenium	ND	0.486	0.973	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO	
Silver	ND	0.0973	0.195	mg/kg dry	10	05/03/22 17:09	EPA 6020B	PRO	
				Matrix: Water					
EB-041322 (A2D0663-43)									
Batch: 22E0222									
Arsenic	0.583	0.500	1.00	ug/L	1	05/06/22 22:22	EPA 6020B	J	
Barium	ND	1.00	2.00	ug/L	1	05/06/22 22:22	EPA 6020B		
Cadmium	ND	0.100	0.200	ug/L	1	05/06/22 22:22	EPA 6020B		
Chromium	ND	1.00	2.00	ug/L	1	05/06/22 22:22	EPA 6020B		
Lead	ND	0.110	0.200	ug/L	1	05/06/22 22:22	EPA 6020B		
Mercury	ND	0.0400	0.0800	ug/L	1	05/06/22 22:22	EPA 6020B		
Selenium	ND	0.500	1.00	ug/L	1	05/06/22 22:22	EPA 6020B		
Silver	ND	0.100	0.200	ug/L	1	05/06/22 22:22	EPA 6020B		

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ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-1 (A2D0663-13) Matrix: Water								
Batch: 22D0782								
Arsenic	6.47	0.500	1.00	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Barium	11.5	0.500	1.00	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Lead	ND	0.100	0.200	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Mercury	ND	0.0400	0.0800	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	04/21/22 18:17	EPA 6020B (Diss)	
SB-2 (A2D0663-14) Matrix: Water								
Batch: 22D0782								
Arsenic	ND	0.500	1.00	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Barium	3.34	0.500	1.00	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Lead	ND	0.100	0.200	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Mercury	ND	0.0400	0.0800	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	04/21/22 18:27	EPA 6020B (Diss)	
SB-3 (A2D0663-15) Matrix: Water								
Batch: 22D0782								
Arsenic	1.22	0.500	1.00	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
Barium	11.4	0.500	1.00	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
Lead	0.131	0.100	0.200	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	J
Mercury	ND	0.0400	0.0800	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	04/21/22 18:37	EPA 6020B (Diss)	
SB-4 (A2D0663-16) Matrix: Water								
Batch: 22D1142								

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ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SB-4 (A2D0663-16) Matrix: Water								
Arsenic	1.30	0.500	1.00	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Barium	62.7	0.500	1.00	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Lead	ND	0.100	0.200	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Mercury	ND	0.0400	0.0800	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	05/01/22 01:37	EPA 6020B (Diss)	
SB-5 (A2D0663-17) Matrix: Water								
Batch: 22D1142								
Arsenic	ND	0.500	1.00	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
Barium	12.8	0.500	1.00	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
Lead	0.182	0.100	0.200	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	J
Mercury	ND	0.0400	0.0800	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	05/01/22 01:47	EPA 6020B (Diss)	
SB-6 (A2D0663-18) Matrix: Water								
Batch: 22D0782								
Arsenic	0.655	0.500	1.00	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	J
Barium	9.06	0.500	1.00	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
Cadmium	ND	0.100	0.200	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
Lead	0.271	0.100	0.200	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
Mercury	ND	0.0400	0.0800	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	04/21/22 18:42	EPA 6020B (Diss)	
SB-7 (A2D0663-19) Matrix: Water								
Batch: 22D1142								
Arsenic	1.73	0.500	1.00	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)	

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ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB-7 (A2D0663-19)					Matrix: Water				
Barium	220	0.500	1.00	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
Cadmium	ND	0.100	0.200	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
Chromium	ND	1.00	2.00	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
Lead	1.02	0.100	0.200	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
Mercury	ND	0.0400	0.0800	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
Selenium	ND	0.500	1.00	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
Silver	ND	0.100	0.200	ug/L	1	05/01/22 01:57	EPA 6020B (Diss)		
SB-8 (A2D0663-20)					Matrix: Water				
Batch: 22D1142									
Arsenic	0.787	0.500	1.00	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)	J	
Barium	92.2	0.500	1.00	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
Cadmium	ND	0.100	0.200	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
Chromium	ND	1.00	2.00	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
Lead	0.331	0.100	0.200	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
Mercury	ND	0.0400	0.0800	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
Selenium	ND	0.500	1.00	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
Silver	ND	0.100	0.200	ug/L	1	05/01/22 02:02	EPA 6020B (Diss)		
DUP-X (A2D0663-22)					Matrix: Water				
Batch: 22D1142									
Arsenic	0.828	0.500	1.00	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)	J	
Barium	76.1	0.500	1.00	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
Cadmium	ND	0.100	0.200	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
Chromium	ND	1.00	2.00	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
Lead	0.243	0.100	0.200	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
Mercury	ND	0.0400	0.0800	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
Selenium	ND	0.500	1.00	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
Silver	ND	0.100	0.200	ug/L	1	05/01/22 02:07	EPA 6020B (Diss)		
EB-041322 (A2D0663-43)					Matrix: Water				
Batch: 22D1142									
Arsenic	ND	0.500	1.00	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)		
Barium	ND	0.500	1.00	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)		

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ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB-041322 (A2D0663-43)				Matrix: Water				
Cadmium	ND	0.100	0.200	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)	
Chromium	ND	1.00	2.00	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)	
Lead	ND	0.100	0.200	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)	
Mercury	ND	0.0400	0.0800	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)	
Selenium	ND	0.500	1.00	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)	
Silver	ND	0.100	0.200	ug/L	1	05/01/22 02:11	EPA 6020B (Diss)	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight									
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes	
SB01-0.5-3 (A2D0663-01)				Matrix: Soil		Batch: 22D0779			
% Solids	80.4	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB02-0-3 (A2D0663-02)				Matrix: Soil		Batch: 22D0779			
% Solids	73.3	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB02-3-7 (A2D0663-03)				Matrix: Soil		Batch: 22D0779			
% Solids	66.8	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB03-0.5-3 (A2D0663-04)				Matrix: Soil		Batch: 22D0779			
% Solids	91.5	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB03-3-5 (A2D0663-05)				Matrix: Soil		Batch: 22D0779			
% Solids	86.3	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB04-0-3 (A2D0663-06)				Matrix: Soil		Batch: 22D0779			
% Solids	70.7	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB05-0.5-3 (A2D0663-07)				Matrix: Soil		Batch: 22D0779			
% Solids	75.2	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB05-3-10 (A2D0663-08)				Matrix: Soil		Batch: 22D0779			
% Solids	80.1	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB06-0-3 (A2D0663-09)				Matrix: Soil		Batch: 22D0779			
% Solids	88.2	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB07-0.5-3 (A2D0663-10)				Matrix: Soil		Batch: 22D0779			
% Solids	95.4	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB07-3-6 (A2D0663-11)				Matrix: Soil		Batch: 22D0779			
% Solids	63.8	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
SB08-0-3 (A2D0663-12)				Matrix: Soil		Batch: 22D0779			
% Solids	83.6	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D		
DUP-01 (A2D0663-21)				Matrix: Soil		Batch: 22D0779			

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight										
Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes		
DUP-01 (A2D0663-21)				Matrix: Soil		Batch: 22D0779				
% Solids	68.1	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-01 (A2D0663-23)				Matrix: Soil		Batch: 22D0779				
% Solids	85.3	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-01 (A2D0663-24)				Matrix: Soil		Batch: 22D0991				PRO
% Solids	99.0	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D			
DU-02 (A2D0663-25)				Matrix: Soil		Batch: 22D0779				
% Solids	89.5	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-02 (A2D0663-26)				Matrix: Soil		Batch: 22D0991				PRO
% Solids	98.9	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D			
DU-03 (A2D0663-27)				Matrix: Soil		Batch: 22D0779				
% Solids	91.3	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-03 (A2D0663-28)				Matrix: Soil		Batch: 22D0991				PRO
% Solids	99.1	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D			
DU-04 (A2D0663-29)				Matrix: Soil		Batch: 22D0779				
% Solids	86.7	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-04 (A2D0663-30)				Matrix: Soil		Batch: 22D0991				PRO
% Solids	98.7	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D			
DU-05 (A2D0663-31)				Matrix: Soil		Batch: 22D0779				
% Solids	92.9	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-05 (A2D0663-32)				Matrix: Soil		Batch: 22D0991				PRO
% Solids	98.2	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D			
DU-06 (A2D0663-33)				Matrix: Soil		Batch: 22D0779				
% Solids	87.2	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D			
DU-06 (A2D0663-34)				Matrix: Soil		Batch: 22D0991				PRO

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
				Matrix: Soil			Batch: 22D0991	PRO
DU-06 (A2D0663-34)								
% Solids	98.8	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D	
				Matrix: Soil			Batch: 22D0779	
DU-07 (A2D0663-35)								
% Solids	88.0	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D	
				Matrix: Soil			Batch: 22D0991	PRO
DU-07 (A2D0663-36)								
% Solids	98.9	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D	
				Matrix: Soil			Batch: 22D0779	
DU-08 (A2D0663-37)								
% Solids	91.4	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D	
				Matrix: Soil			Batch: 22D0991	PRO
DU-08 (A2D0663-38)								
% Solids	98.6	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D	
				Matrix: Soil			Batch: 22D0779	
DU-DUP (A2D0663-39)								
% Solids	81.5	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D	
				Matrix: Soil			Batch: 22D0991	PRO
DU-DUP (A2D0663-40)								
% Solids	99.0	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D	
				Matrix: Soil			Batch: 22D0779	
DU-TRIP (A2D0663-41)								
% Solids	86.4	1.00	1.00	%	1	04/21/22 09:45	EPA 8000D	
				Matrix: Soil			Batch: 22D0991	PRO
DU-TRIP (A2D0663-42)								
% Solids	99.0	1.00	1.00	%	1	04/27/22 09:10	EPA 8000D	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0823 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (22D0823-BLK1)						Prepared: 04/21/22 10:47 Analyzed: 04/21/22 20:52						
<u>NWTPH-Dx</u>												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0823-BS1)						Prepared: 04/21/22 10:47 Analyzed: 04/21/22 21:15						
<u>NWTPH-Dx</u>												
Diesel	1.19	0.100	0.200	mg/L	1	1.25	---	95	36-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS Dup (22D0823-BSD1)						Prepared: 04/21/22 10:47 Analyzed: 04/21/22 21:37						
<u>NWTPH-Dx</u>												
Diesel	1.18	0.100	0.200	mg/L	1	1.25	---	94	36-132%	1	30%	Q-19
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Batch 22D0836 - EPA 3546 (Fuels)						Soil						
Blank (22D0836-BLK1)						Prepared: 04/21/22 14:04 Analyzed: 04/22/22 02:43						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0836-BS1)						Prepared: 04/21/22 14:04 Analyzed: 04/22/22 03:03						
<u>NWTPH-Dx</u>												
Diesel	116	10.0	25.0	mg/kg wet	1	125	---	93	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0836-DUP1)						Prepared: 04/21/22 14:04 Analyzed: 04/22/22 05:05						
<u>QC Source Sample: SB01-0.5-3 (A2D0663-01)</u>												
<u>NWTPH-Dx</u>												
Diesel	ND	11.3	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	22.7	50.0	mg/kg dry	1	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0836 - EPA 3546 (Fuels)						Soil						
Duplicate (22D0836-DUP1)						Prepared: 04/21/22 14:04 Analyzed: 04/22/22 05:05						
QC Source Sample: SB01-0.5-3 (A2D0663-01)												
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 90 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0836-DUP3)						Prepared: 04/21/22 18:18 Analyzed: 04/22/22 14:00						
QC Source Sample: Non-SDG (A2D0880-02RE1)												
Diesel	8170	62.6	125	mg/kg dry	5	---	5230	---	---	44	30%	Q-04
Oil	ND	125	251	mg/kg dry	5	---	ND	---	---	---	30%	
Mineral Oil	ND	125	251	mg/kg dry	5	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 138 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 5x</i>						S-05

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0860 - EPA 3546 (Fuels)						Soil						
Blank (22D0860-BLK1)						Prepared: 04/22/22 05:48 Analyzed: 04/22/22 11:15						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0860-BS1)						Prepared: 04/22/22 05:48 Analyzed: 04/22/22 11:35						
<u>NWTPH-Dx</u>												
Diesel	105	10.0	25.0	mg/kg wet	1	125	---	84	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0860-DUP1)						Prepared: 04/22/22 05:48 Analyzed: 04/22/22 12:17						
<u>QC Source Sample: Non-SDG (A2D0884-01)</u>												
Diesel	ND	13.0	26.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	26.0	52.0	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 62 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0860-DUP2)						Prepared: 04/22/22 11:03 Analyzed: 04/22/22 20:59						
<u>QC Source Sample: Non-SDG (A2D0620-05)</u>												
Diesel	ND	11.7	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	23.4	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 63 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0944 - EPA 3546 (Fuels)						Soil						
Blank (22D0944-BLK1)						Prepared: 04/25/22 13:33 Analyzed: 04/25/22 21:36						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0944-BS1)						Prepared: 04/25/22 13:33 Analyzed: 04/25/22 21:56						
<u>NWTPH-Dx</u>												
Diesel	115	10.0	20.0	mg/kg wet	1	125	---	92	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0944-DUP1)						Prepared: 04/25/22 13:33 Analyzed: 04/25/22 22:38						
<u>QC Source Sample: Non-SDG (A2D0659-02)</u>												
Diesel	ND	12.5	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	25.0	50.1	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 79 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0944-DUP2)						Prepared: 04/25/22 13:33 Analyzed: 04/25/22 23:39						
<u>QC Source Sample: Non-SDG (A2D0659-04)</u>												
Diesel	ND	12.5	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	25.0	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 82 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0958 - EPA 3546 (Fuels)						Soil						
Blank (22D0958-BLK1)						Prepared: 04/25/22 16:14 Analyzed: 04/25/22 21:36						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 83 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0958-BS1)						Prepared: 04/25/22 16:14 Analyzed: 04/25/22 21:56						
<u>NWTPH-Dx</u>												
Diesel	115	10.0	20.0	mg/kg wet	1	125	---	92	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 96 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0958-DUP1)						Prepared: 04/25/22 16:14 Analyzed: 04/25/22 22:38						
<u>QC Source Sample: SB03-3-5 (A2D0663-05RE1)</u>												
<u>NWTPH-Dx</u>												
Diesel	ND	11.0	22.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	22.0	44.0	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 87 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0958-DUP2)						Prepared: 04/25/22 17:46 Analyzed: 04/26/22 06:49						
<u>QC Source Sample: Non-SDG (A2D0991-02)</u>												
Diesel	ND	10.2	20.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	20.4	40.8	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0971 - EPA 3546 (Fuels)						Soil						
Blank (22D0971-BLK1)						Prepared: 04/26/22 05:49 Analyzed: 04/26/22 07:25						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0971-BS1)						Prepared: 04/26/22 05:49 Analyzed: 04/26/22 07:48						
<u>NWTPH-Dx</u>												
Diesel	106	10.0	20.0	mg/kg wet	1	125	---	85	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0971-DUP1)						Prepared: 04/26/22 05:49 Analyzed: 04/26/22 08:33						
<u>QC Source Sample: Non-SDG (A2D0994-01)</u>												
Diesel	ND	10.5	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	21.1	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D0971-DUP2)						Prepared: 04/26/22 17:20 Analyzed: 04/26/22 21:35						
<u>QC Source Sample: Non-SDG (A2D1008-01)</u>												
Diesel	58.7	12.5	25.0	mg/kg dry	1	---	77.0	---	---	27	30%	F-26
Oil	56.8	25.0	49.9	mg/kg dry	1	---	65.5	---	---	14	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 77 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0975 - EPA 3510C (Fuels/Acid Ext.)						Water						
Blank (22D0975-BLK1)						Prepared: 04/26/22 07:39 Analyzed: 04/26/22 21:14						
<u>NWTPH-Dx</u>												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	mg/L	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 93 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D0975-BS1)						Prepared: 04/26/22 07:39 Analyzed: 04/26/22 21:35						
<u>NWTPH-Dx</u>												
Diesel	1.02	0.100	0.200	mg/L	1	1.25	---	82	36-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 91 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS Dup (22D0975-BSD1)						Prepared: 04/26/22 07:39 Analyzed: 04/26/22 21:55						
<u>NWTPH-Dx</u>												
Diesel	1.07	0.100	0.200	mg/L	1	1.25	---	85	36-132%	4	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1021 - EPA 3546 (Fuels)						Soil						
Blank (22D1021-BLK1)						Prepared: 04/27/22 07:03 Analyzed: 04/27/22 21:21						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D1021-BS1)						Prepared: 04/27/22 07:03 Analyzed: 04/27/22 21:41						
<u>NWTPH-Dx</u>												
Diesel	106	10.0	20.0	mg/kg wet	1	125	---	85	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 85 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D1021-DUP1)						Prepared: 04/27/22 07:03 Analyzed: 04/27/22 22:22						
PRO												
<u>QC Source Sample: DU-03 (A2D0663-28)</u>												
<u>NWTPH-Dx</u>												
Diesel	ND	9.49	19.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	213	19.0	38.0	mg/kg dry	1	---	190	---	---	12	30%	
Mineral Oil	ND	19.0	38.0	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D1021-DUP2)						Prepared: 04/27/22 11:12 Analyzed: 04/28/22 02:28						
<u>QC Source Sample: Non-SDG (A2D0946-02)</u>												
Diesel	ND	12.5	25.1	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	25.1	50.2	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	25.1	50.2	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 73 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1071 - EPA 3546 (Fuels)						Soil						
Blank (22D1071-BLK1)						Prepared: 04/28/22 07:37 Analyzed: 04/28/22 21:15						
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D1071-BS1)						Prepared: 04/28/22 07:37 Analyzed: 04/28/22 21:35						
<u>NWTPH-Dx</u>												
Diesel	119	10.0	20.0	mg/kg wet	1	125	---	95	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D1071-DUP1)						Prepared: 04/28/22 07:37 Analyzed: 04/28/22 22:16						
QC Source Sample: DU-01 (A2D0663-24)												
<u>NWTPH-Dx</u>												
Diesel	115	9.89	19.8	mg/kg dry	1	---	134	---	---	15	30%	F-11
Oil	208	19.8	39.6	mg/kg dry	1	---	227	---	---	9	30%	
Mineral Oil	ND	19.8	39.6	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 71 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D1071-DUP2)						Prepared: 04/28/22 07:37 Analyzed: 04/29/22 04:45						
QC Source Sample: Non-SDG (A2D0924-08)												
Diesel	ND	12.5	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	25.0	50.1	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	25.0	50.1	mg/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 81 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1114 - EPA 3546 (Fuels)						Soil						
Blank (22D1114-BLK1)			Prepared: 04/29/22 07:16 Analyzed: 04/29/22 22:00									
<u>NWTPH-Dx</u>												
Diesel	ND	9.09	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
LCS (22D1114-BS1)			Prepared: 04/29/22 07:16 Analyzed: 04/29/22 22:22									
<u>NWTPH-Dx</u>												
Diesel	129	10.0	20.0	mg/kg wet	1	125	---	104	38-132%	---	---	
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D1114-DUP1)			Prepared: 04/29/22 07:16 Analyzed: 04/29/22 23:07									PRO
<u>QC Source Sample: DU-04 (A2D0663-30)</u>												
<u>NWTPH-Dx</u>												
Diesel	ND	9.85	19.7	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	220	19.7	39.4	mg/kg dry	1	---	195	---	---	12	30%	F-03
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 87 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
Duplicate (22D1114-DUP2)			Prepared: 04/29/22 07:16 Analyzed: 04/30/22 13:45									
<u>QC Source Sample: Non-SDG (A2D1125-07)</u>												
Diesel	ND	11.3	22.7	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	31.8	22.7	45.3	mg/kg dry	1	---	34.0	---	---	7	30%	J
<i>Surr: o-Terphenyl (Surr)</i>		<i>Recovery: 76 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Blank (22D0702-BLK1)			Prepared: 04/19/22 08:00 Analyzed: 04/19/22 11:54									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 99 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>101 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (22D0702-BS2)						Prepared: 04/19/22 08:00 Analyzed: 04/19/22 11:32						
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.443	0.0500	0.100	mg/L	1	0.500	---	89	80-120%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0702-DUP1)						Prepared: 04/19/22 14:09 Analyzed: 04/19/22 15:37						
<u>QC Source Sample: Non-SDG (A2D0555-09RE1)</u>												
Gasoline Range Organics	0.103	0.0500	0.100	mg/L	1	---	0.116	---	---	12	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Blank (22D0741-BLK1)			Prepared: 04/19/22 15:52 Analyzed: 04/19/22 23:27									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 101 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>103 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (22D0741-BS2)			Prepared: 04/19/22 15:52 Analyzed: 04/19/22 23:05									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.438	0.0500	0.100	mg/L	1	0.500	---	88	80-120%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 100 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0741-DUP1)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:02									
<u>QC Source Sample: SB-8 (A2D0663-20)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	0.500	1.00	mg/L	10	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 105 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 10x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0741-DUP2)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:47									
<u>QC Source Sample: DUP-X (A2D0663-22)</u>												
Gasoline Range Organics	ND	0.500	1.00	mg/L	10	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 10x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Blank (22D0770-BLK1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 15:59									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>104 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (22D0770-BS2)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 14:52									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	0.471	0.0500	0.100	mg/L	1	0.500	---	94	80-120%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 102 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0770-DUP1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 19:22									
<u>QC Source Sample: SB-8 (A2D0663-20RE1)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 104 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>105 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0770-DUP2)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 20:52									
<u>QC Source Sample: Non-SDG (A2D0717-01)</u>												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 106 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>106 %</i>		<i>50-150 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Blank (22D0773-BLK1)			Prepared: 04/20/22 10:00 Analyzed: 04/20/22 12:51									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 93 %	Limits: 50-150 %			Dilution: 1x						
1,4-Difluorobenzene (Sur)		96 %	50-150 %			"						
LCS (22D0773-BS2)			Prepared: 04/20/22 10:00 Analyzed: 04/20/22 12:24									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	25.5	2.50	5.00	mg/kg wet	50	25.0	---	102	80-120%	---	---	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 96 %	Limits: 50-150 %			Dilution: 1x						
1,4-Difluorobenzene (Sur)		97 %	50-150 %			"						
Duplicate (22D0773-DUP1)			Prepared: 04/11/22 10:20 Analyzed: 04/20/22 15:32									
<u>QC Source Sample: SB01-0.5-3 (A2D0663-01)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	3.11	6.22	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 95 %	Limits: 50-150 %			Dilution: 1x						
1,4-Difluorobenzene (Sur)		96 %	50-150 %			"						
Duplicate (22D0773-DUP2)			Prepared: 04/11/22 12:30 Analyzed: 04/20/22 19:07									
<u>QC Source Sample: SB05-3-10 (A2D0663-08)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	3.66	7.31	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 96 %	Limits: 50-150 %			Dilution: 1x						
1,4-Difluorobenzene (Sur)		97 %	50-150 %			"						
Duplicate (22D0773-DUP3)			Prepared: 04/19/22 10:32 Analyzed: 04/20/22 21:48									
<u>QC Source Sample: DUP-01 (A2D0663-21)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	4.46	8.92	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 98 %	Limits: 50-150 %			Dilution: 1x						
1,4-Difluorobenzene (Sur)		98 %	50-150 %			"						

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

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

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Blank (22D0831-BLK1)			Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:54									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	1.67	3.33	mg/kg wet	50	---	---	---	---	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 94 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>97 %</i>		<i>50-150 %</i>		<i>"</i>						
LCS (22D0831-BS2)			Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:27									
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	26.5	2.50	5.00	mg/kg wet	50	25.0	---	106	80-120%	---	---	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 95 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>100 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0831-DUP1)			Prepared: 04/14/22 12:00 Analyzed: 04/21/22 16:41									
<u>QC Source Sample: DU-01 (A2D0663-23)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	4.01	8.03	mg/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 97 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>		<i>"</i>						
Duplicate (22D0831-DUP2)			Prepared: 04/13/22 16:30 Analyzed: 04/21/22 19:22									
<u>QC Source Sample: DU-06 (A2D0663-33)</u>												
<u>NWTPH-Gx (MS)</u>												
Gasoline Range Organics	ND	3.24	6.48	mg/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 4-Bromofluorobenzene (Sur)</i>		<i>Recovery: 98 %</i>		<i>Limits: 50-150 %</i>		<i>Dilution: 1x</i>						
<i>1,4-Difluorobenzene (Sur)</i>		<i>98 %</i>		<i>50-150 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Blank (22D0702-BLK1)			Prepared: 04/19/22 08:00 Analyzed: 04/19/22 11:54									
EPA 8260D												
Acetone	ND	20.0	20.0	ug/L	1	---	---	---	---	---	---	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Blank (22D0702-BLK1)			Prepared: 04/19/22 08:00 Analyzed: 04/19/22 11:54									
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	2.00	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 104 % Limits: 80-120 % Dilution: 1x

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Blank (22D0702-BLK1)						Prepared: 04/19/22 08:00 Analyzed: 04/19/22 11:54						
<i>Surr: Toluene-d8 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (22D0702-BS1)						Prepared: 04/19/22 08:00 Analyzed: 04/19/22 10:52						
EPA 8260D												
Acetone	25.6	20.0	20.0	ug/L	1	40.0	---	64	80-120%	---	---	ICV-02, Q-55
Acrylonitrile	19.0	1.00	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
Benzene	20.2	0.100	0.200	ug/L	1	20.0	---	101	80-120%	---	---	
Bromobenzene	17.7	0.250	0.500	ug/L	1	20.0	---	89	80-120%	---	---	
Bromochloromethane	20.4	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromodichloromethane	20.4	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Bromoform	21.9	0.500	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Bromomethane	22.8	5.00	5.00	ug/L	1	20.0	---	114	80-120%	---	---	
2-Butanone (MEK)	28.9	10.0	10.0	ug/L	1	40.0	---	72	80-120%	---	---	Q-55
n-Butylbenzene	19.1	0.500	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
sec-Butylbenzene	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
tert-Butylbenzene	19.8	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Carbon disulfide	20.7	5.00	10.0	ug/L	1	20.0	---	103	80-120%	---	---	
Carbon tetrachloride	21.3	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Chlorobenzene	18.4	0.250	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Chloroethane	20.3	5.00	5.00	ug/L	1	20.0	---	102	80-120%	---	---	
Chloroform	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Chloromethane	19.3	2.50	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
2-Chlorotoluene	18.7	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
4-Chlorotoluene	18.6	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
Dibromochloromethane	19.6	0.500	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.8	2.50	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.6	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dibromomethane	19.9	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichlorobenzene	18.0	0.250	0.500	ug/L	1	20.0	---	90	80-120%	---	---	
1,3-Dichlorobenzene	18.4	0.250	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
1,4-Dichlorobenzene	17.5	0.250	0.500	ug/L	1	20.0	---	88	80-120%	---	---	
Dichlorodifluoromethane	18.9	0.500	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloroethane	19.9	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
LCS (22D0702-BS1)			Prepared: 04/19/22 08:00 Analyzed: 04/19/22 10:52									
1,2-Dichloroethane (EDC)	18.9	0.200	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloroethene	21.2	0.200	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,2-Dichloroethene	19.9	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
trans-1,2-Dichloroethene	20.2	0.200	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2-Dichloropropane	19.3	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
1,3-Dichloropropane	18.5	0.500	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
2,2-Dichloropropane	20.2	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,1-Dichloropropene	21.1	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	19.8	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
trans-1,3-Dichloropropene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Ethylbenzene	19.3	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Hexachlorobutadiene	18.6	2.50	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
2-Hexanone	26.4	10.0	10.0	ug/L	1	40.0	---	66	80-120%	---	---	Q-55
Isopropylbenzene	21.5	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
4-Isopropyltoluene	20.2	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Methylene chloride	19.6	5.00	10.0	ug/L	1	20.0	---	98	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	35.8	5.00	10.0	ug/L	1	40.0	---	89	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Naphthalene	15.7	2.00	2.00	ug/L	1	20.0	---	79	80-120%	---	---	Q-55
n-Propylbenzene	19.2	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Styrene	17.4	0.500	1.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.5	0.200	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
1,1,2,2-Tetrachloroethane	17.7	0.250	0.500	ug/L	1	20.0	---	89	80-120%	---	---	
Tetrachloroethene (PCE)	20.5	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Toluene	18.5	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2,3-Trichlorobenzene	18.1	1.00	2.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,2,4-Trichlorobenzene	18.0	1.00	2.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1-Trichloroethane	21.2	0.200	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
1,1,2-Trichloroethane	18.9	0.250	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Trichloroethene (TCE)	20.1	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
Trichlorofluoromethane	21.4	1.00	2.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2,3-Trichloropropane	17.4	0.500	1.00	ug/L	1	20.0	---	87	80-120%	---	---	
1,2,4-Trimethylbenzene	20.3	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,3,5-Trimethylbenzene	20.3	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
LCS (22D0702-BS1)			Prepared: 04/19/22 08:00			Analyzed: 04/19/22 10:52						
Vinyl chloride	20.4	0.200	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
m,p-Xylene	40.9	0.500	1.00	ug/L	1	40.0	---	102	80-120%	---	---	
o-Xylene	19.9	0.250	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						

Duplicate (22D0702-DUP1)												
Prepared: 04/19/22 14:09						Analyzed: 04/19/22 15:37						
QC Source Sample: Non-SDG (A2D0555-09RE1)												
Acetone	ND	20.0	20.0	ug/L	1	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
Benzene	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	30%	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	---	ND	---	---	---	30%	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Duplicate (22D0702-DUP1)			Prepared: 04/19/22 14:09 Analyzed: 04/19/22 15:37									
QC Source Sample: Non-SDG (A2D0555-09RE1)												
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	3.73	0.200	0.400	ug/L	1	---	4.01	---	---	7	30%	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	ND	2.00	2.00	ug/L	1	---	ND	---	---	---	30%	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Styrene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	44.8	0.200	0.400	ug/L	1	---	50.9	---	---	13	30%	
Toluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B												
Water												
Duplicate (22D0702-DUP1)			Prepared: 04/19/22 14:09 Analyzed: 04/19/22 15:37									
QC Source Sample: Non-SDG (A2D0555-09RE1)												
Trichloroethene (TCE)	3.05	0.200	0.400	ug/L	1	---	3.36	---	---	10	30%	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
o-Xylene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>"</i>						

Matrix Spike (22D0702-MS1)			Prepared: 04/19/22 14:09 Analyzed: 04/19/22 17:28									
QC Source Sample: Non-SDG (A2D0580-01RE1)												
EPA 8260D												
Acetone	250	200	200	ug/L	10	400	ND	63	39-160%	---	---	ICV-02, Q-54g
Acrylonitrile	192	10.0	20.0	ug/L	10	200	ND	96	63-135%	---	---	
Benzene	248	1.00	2.00	ug/L	10	200	28.1	110	79-120%	---	---	
Bromobenzene	176	2.50	5.00	ug/L	10	200	ND	88	80-120%	---	---	
Bromochloromethane	210	5.00	10.0	ug/L	10	200	ND	105	78-123%	---	---	
Bromodichloromethane	209	5.00	10.0	ug/L	10	200	ND	104	79-125%	---	---	
Bromoform	224	5.00	10.0	ug/L	10	200	ND	112	66-130%	---	---	
Bromomethane	233	50.0	50.0	ug/L	10	200	ND	117	53-141%	---	---	
2-Butanone (MEK)	292	100	100	ug/L	10	400	ND	73	56-143%	---	---	Q-54i
n-Butylbenzene	209	5.00	10.0	ug/L	10	200	ND	104	75-128%	---	---	
sec-Butylbenzene	215	5.00	10.0	ug/L	10	200	ND	107	77-126%	---	---	
tert-Butylbenzene	203	5.00	10.0	ug/L	10	200	ND	101	78-124%	---	---	
Carbon disulfide	214	50.0	100	ug/L	10	200	ND	107	64-133%	---	---	
Carbon tetrachloride	223	5.00	10.0	ug/L	10	200	ND	112	72-136%	---	---	
Chlorobenzene	191	2.50	5.00	ug/L	10	200	ND	96	80-120%	---	---	
Chloroethane	213	50.0	50.0	ug/L	10	200	ND	107	60-138%	---	---	
Chloroform	207	5.00	10.0	ug/L	10	200	ND	103	79-124%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Matrix Spike (22D0702-MS1)						Prepared: 04/19/22 14:09 Analyzed: 04/19/22 17:28						
QC Source Sample: Non-SDG (A2D0580-01RE1)												
Chloromethane	197	25.0	50.0	ug/L	10	200	ND	99	50-139%	---	---	
2-Chlorotoluene	191	5.00	10.0	ug/L	10	200	ND	96	79-122%	---	---	
4-Chlorotoluene	186	5.00	10.0	ug/L	10	200	ND	93	78-122%	---	---	
Dibromochloromethane	200	5.00	10.0	ug/L	10	200	ND	100	74-126%	---	---	
1,2-Dibromo-3-chloropropane	199	25.0	50.0	ug/L	10	200	ND	99	62-128%	---	---	
1,2-Dibromoethane (EDB)	202	2.50	5.00	ug/L	10	200	ND	101	77-121%	---	---	
Dibromomethane	207	5.00	10.0	ug/L	10	200	ND	104	79-123%	---	---	
1,2-Dichlorobenzene	182	2.50	5.00	ug/L	10	200	ND	91	80-120%	---	---	
1,3-Dichlorobenzene	186	2.50	5.00	ug/L	10	200	ND	93	80-120%	---	---	
1,4-Dichlorobenzene	177	2.50	5.00	ug/L	10	200	ND	88	79-120%	---	---	
Dichlorodifluoromethane	188	5.00	10.0	ug/L	10	200	ND	94	32-152%	---	---	
1,1-Dichloroethane	206	2.00	4.00	ug/L	10	200	ND	103	77-125%	---	---	
1,2-Dichloroethane (EDC)	195	2.00	4.00	ug/L	10	200	ND	97	73-128%	---	---	
1,1-Dichloroethene	221	2.00	4.00	ug/L	10	200	ND	110	71-131%	---	---	
cis-1,2-Dichloroethene	206	2.00	4.00	ug/L	10	200	ND	103	78-123%	---	---	
trans-1,2-Dichloroethene	208	2.00	4.00	ug/L	10	200	ND	104	75-124%	---	---	
1,2-Dichloropropane	197	2.50	5.00	ug/L	10	200	ND	98	78-122%	---	---	
1,3-Dichloropropane	192	5.00	10.0	ug/L	10	200	ND	96	80-120%	---	---	
2,2-Dichloropropane	209	5.00	10.0	ug/L	10	200	ND	104	60-139%	---	---	
1,1-Dichloropropene	221	5.00	10.0	ug/L	10	200	ND	110	79-125%	---	---	
cis-1,3-Dichloropropene	189	5.00	10.0	ug/L	10	200	ND	94	75-124%	---	---	
trans-1,3-Dichloropropene	205	5.00	10.0	ug/L	10	200	ND	102	73-127%	---	---	
Ethylbenzene	263	2.50	5.00	ug/L	10	200	44.0	110	79-121%	---	---	
Hexachlorobutadiene	194	25.0	50.0	ug/L	10	200	ND	97	66-134%	---	---	
2-Hexanone	277	100	100	ug/L	10	400	ND	69	57-139%	---	---	Q-54f
Isopropylbenzene	244	5.00	10.0	ug/L	10	200	11.1	116	72-131%	---	---	
4-Isopropyltoluene	210	5.00	10.0	ug/L	10	200	ND	105	77-127%	---	---	
Methylene chloride	201	50.0	100	ug/L	10	200	ND	100	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	365	50.0	100	ug/L	10	400	ND	91	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	211	5.00	10.0	ug/L	10	200	ND	105	71-124%	---	---	
Naphthalene	230	20.0	20.0	ug/L	10	200	34.8	98	61-128%	---	---	Q-54d
n-Propylbenzene	219	2.50	5.00	ug/L	10	200	16.6	101	76-126%	---	---	
Styrene	183	5.00	10.0	ug/L	10	200	ND	92	78-123%	---	---	

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ANALYTICAL REPORT

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0702 - EPA 5030B						Water						
Matrix Spike (22D0702-MS1)			Prepared: 04/19/22 14:09 Analyzed: 04/19/22 17:28									
QC Source Sample: Non-SDG (A2D0580-01RE1)												
1,1,1,2-Tetrachloroethane	189	2.00	4.00	ug/L	10	200	ND	95	78-124%	---	---	
1,1,2,2-Tetrachloroethane	177	2.50	5.00	ug/L	10	200	ND	88	71-121%	---	---	
Tetrachloroethene (PCE)	212	2.00	4.00	ug/L	10	200	ND	106	74-129%	---	---	
Toluene	203	5.00	10.0	ug/L	10	200	8.80	97	80-121%	---	---	
1,2,3-Trichlorobenzene	190	10.0	20.0	ug/L	10	200	ND	95	69-129%	---	---	
1,2,4-Trichlorobenzene	195	10.0	20.0	ug/L	10	200	ND	98	69-130%	---	---	
1,1,1-Trichloroethane	221	2.00	4.00	ug/L	10	200	ND	110	74-131%	---	---	
1,1,2-Trichloroethane	193	2.50	5.00	ug/L	10	200	ND	97	80-120%	---	---	
Trichloroethene (TCE)	207	2.00	4.00	ug/L	10	200	ND	104	79-123%	---	---	
Trichlorofluoromethane	226	10.0	20.0	ug/L	10	200	ND	113	65-141%	---	---	
1,2,3-Trichloropropane	172	5.00	10.0	ug/L	10	200	ND	86	73-122%	---	---	
1,2,4-Trimethylbenzene	392	5.00	10.0	ug/L	10	200	134	129	76-124%	---	---	Q-01
1,3,5-Trimethylbenzene	240	5.00	10.0	ug/L	10	200	23.3	108	75-124%	---	---	
Vinyl chloride	212	2.00	4.00	ug/L	10	200	ND	106	58-137%	---	---	
m,p-Xylene	639	5.00	10.0	ug/L	10	400	152	122	80-121%	---	---	Q-01
o-Xylene	426	2.50	5.00	ug/L	10	200	156	135	78-122%	---	---	Q-01
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Blank (22D0741-BLK1)			Prepared: 04/19/22 15:52 Analyzed: 04/19/22 23:27									
EPA 8260D												
Acetone	ND	20.0	20.0	ug/L	1	---	---	---	---	---	---	ICV-02
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Blank (22D0741-BLK1)			Prepared: 04/19/22 15:52 Analyzed: 04/19/22 23:27									
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 105 % Limits: 80-120 % Dilution: 1x

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Blank (22D0741-BLK1)						Prepared: 04/19/22 15:52 Analyzed: 04/19/22 23:27						
<i>Surr: Toluene-d8 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
LCS (22D0741-BS1)						Prepared: 04/19/22 15:52 Analyzed: 04/19/22 22:42						
EPA 8260D												
Acetone	25.4	20.0	20.0	ug/L	1	40.0	---	64	80-120%	---	---	ICV-02, Q-55
Acrylonitrile	19.3	1.00	2.00	ug/L	1	20.0	---	96	80-120%	---	---	
Benzene	20.1	0.100	0.200	ug/L	1	20.0	---	100	80-120%	---	---	
Bromobenzene	17.8	0.250	0.500	ug/L	1	20.0	---	89	80-120%	---	---	
Bromochloromethane	20.9	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Bromodichloromethane	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Bromoform	23.0	0.500	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
Bromomethane	22.8	5.00	5.00	ug/L	1	20.0	---	114	80-120%	---	---	
2-Butanone (MEK)	29.8	10.0	10.0	ug/L	1	40.0	---	75	80-120%	---	---	Q-55
n-Butylbenzene	18.6	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
sec-Butylbenzene	20.3	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
tert-Butylbenzene	19.4	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Carbon disulfide	20.3	5.00	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
Carbon tetrachloride	21.3	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Chlorobenzene	18.9	0.250	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
Chloroethane	20.4	5.00	5.00	ug/L	1	20.0	---	102	80-120%	---	---	
Chloroform	20.2	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloromethane	19.1	2.50	5.00	ug/L	1	20.0	---	95	80-120%	---	---	
2-Chlorotoluene	18.5	0.500	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
4-Chlorotoluene	18.4	0.500	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
Dibromochloromethane	20.5	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.4	2.50	5.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.4	0.250	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Dibromomethane	20.9	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,2-Dichlorobenzene	18.2	0.250	0.500	ug/L	1	20.0	---	91	80-120%	---	---	
1,3-Dichlorobenzene	18.6	0.250	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
1,4-Dichlorobenzene	17.7	0.250	0.500	ug/L	1	20.0	---	88	80-120%	---	---	
Dichlorodifluoromethane	18.6	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,1-Dichloroethane	20.1	0.200	0.400	ug/L	1	20.0	---	101	80-120%	---	---	

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Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
LCS (22D0741-BS1)			Prepared: 04/19/22 15:52 Analyzed: 04/19/22 22:42									
1,2-Dichloroethane (EDC)	19.5	0.200	0.400	ug/L	1	20.0	---	97	80-120%	---	---	
1,1-Dichloroethene	20.6	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
cis-1,2-Dichloroethene	19.8	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
trans-1,2-Dichloroethene	19.6	0.200	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichloropropane	19.5	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,3-Dichloropropane	19.0	0.500	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
2,2-Dichloropropane	18.1	0.500	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,1-Dichloropropene	20.5	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
cis-1,3-Dichloropropene	19.8	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
trans-1,3-Dichloropropene	20.1	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Ethylbenzene	19.4	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
Hexachlorobutadiene	18.0	2.50	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
2-Hexanone	27.2	10.0	10.0	ug/L	1	40.0	---	68	80-120%	---	---	Q-55
Isopropylbenzene	21.3	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
4-Isopropyltoluene	19.7	0.500	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
Methylene chloride	19.8	5.00	10.0	ug/L	1	20.0	---	99	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	37.0	5.00	10.0	ug/L	1	40.0	---	92	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	20.7	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Naphthalene	16.0	1.00	2.00	ug/L	1	20.0	---	80	80-120%	---	---	
n-Propylbenzene	18.8	0.250	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Styrene	18.0	0.500	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.8	0.200	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,2,2-Tetrachloroethane	18.5	0.250	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Tetrachloroethene (PCE)	20.3	0.200	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
Toluene	18.7	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2,3-Trichlorobenzene	18.5	1.00	2.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,2,4-Trichlorobenzene	18.0	1.00	2.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1-Trichloroethane	21.0	0.200	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
1,1,2-Trichloroethane	19.6	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Trichloroethene (TCE)	19.9	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
Trichlorofluoromethane	21.4	1.00	2.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2,3-Trichloropropane	18.1	0.500	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,2,4-Trimethylbenzene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,3,5-Trimethylbenzene	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
LCS (22D0741-BS1)						Prepared: 04/19/22 15:52 Analyzed: 04/19/22 22:42						
Vinyl chloride	19.7	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
m,p-Xylene	41.3	0.500	1.00	ug/L	1	40.0	---	103	80-120%	---	---	
o-Xylene	19.8	0.250	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 103 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						

Duplicate (22D0741-DUP1) Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:02

QC Source Sample: SB-8 (A2D0663-20)

EPA 8260D

Acetone	ND	200	200	ug/L	10	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
Benzene	ND	1.00	2.00	ug/L	10	---	ND	---	---	---	30%	
Bromobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	100	100	ug/L	10	---	ND	---	---	---	30%	
n-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Carbon disulfide	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Duplicate (22D0741-DUP1)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:02									
QC Source Sample: SB-8 (A2D0663-20)												
1,2-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	100	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Toluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B												
Water												
Duplicate (22D0741-DUP1)												
Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:02												
QC Source Sample: SB-8 (A2D0663-20)												
1,1,2-Trichloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						

Duplicate (22D0741-DUP2)												
Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:47												
QC Source Sample: DUP-X (A2D0663-22)												
Acetone	ND	200	200	ug/L	10	---	ND	---	---	---	30%	ICV-02
Acrylonitrile	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
Benzene	ND	1.00	2.00	ug/L	10	---	ND	---	---	---	30%	
Bromobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	100	100	ug/L	10	---	ND	---	---	---	30%	
n-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Carbon disulfide	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	50.0	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Chloromethane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Duplicate (22D0741-DUP2)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:47									
QC Source Sample: DUP-X (A2D0663-22)												
2-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	25.0	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	100	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	50.0	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Duplicate (22D0741-DUP2)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 05:47									
QC Source Sample: DUP-X (A2D0663-22)												
1,1,2,2-Tetrachloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Toluene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	10.0	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	2.00	4.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	5.00	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	2.50	5.00	ug/L	10	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 107 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>"</i>						

Matrix Spike (22D0741-MS1)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 06:31									
QC Source Sample: EB-041322 (A2D0663-43)												
EPA 8260D												
Acetone	257	200	200	ug/L	10	400	ND	64	39-160%	---	---	ICV-02, Q-54g
Acrylonitrile	190	10.0	20.0	ug/L	10	200	ND	95	63-135%	---	---	
Benzene	208	1.00	2.00	ug/L	10	200	ND	104	79-120%	---	---	
Bromobenzene	180	2.50	5.00	ug/L	10	200	ND	90	80-120%	---	---	
Bromochloromethane	212	5.00	10.0	ug/L	10	200	ND	106	78-123%	---	---	
Bromodichloromethane	211	5.00	10.0	ug/L	10	200	ND	105	79-125%	---	---	
Bromoform	232	5.00	10.0	ug/L	10	200	ND	116	66-130%	---	---	
Bromomethane	236	50.0	50.0	ug/L	10	200	ND	118	53-141%	---	---	
2-Butanone (MEK)	288	100	100	ug/L	10	400	ND	72	56-143%	---	---	Q-54h
n-Butylbenzene	191	5.00	10.0	ug/L	10	200	ND	96	75-128%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Matrix Spike (22D0741-MS1)						Prepared: 04/19/22 15:52 Analyzed: 04/20/22 06:31						
QC Source Sample: EB-041322 (A2D0663-43)												
sec-Butylbenzene	210	5.00	10.0	ug/L	10	200	ND	105	77-126%	---	---	
tert-Butylbenzene	198	5.00	10.0	ug/L	10	200	ND	99	78-124%	---	---	
Carbon disulfide	216	50.0	100	ug/L	10	200	ND	108	64-133%	---	---	
Carbon tetrachloride	228	5.00	10.0	ug/L	10	200	ND	114	72-136%	---	---	
Chlorobenzene	194	2.50	5.00	ug/L	10	200	ND	97	80-120%	---	---	
Chloroethane	206	50.0	50.0	ug/L	10	200	ND	103	60-138%	---	---	
Chloroform	209	5.00	10.0	ug/L	10	200	ND	104	79-124%	---	---	
Chloromethane	196	25.0	50.0	ug/L	10	200	ND	98	50-139%	---	---	
2-Chlorotoluene	188	5.00	10.0	ug/L	10	200	ND	94	79-122%	---	---	
4-Chlorotoluene	185	5.00	10.0	ug/L	10	200	ND	93	78-122%	---	---	
Dibromochloromethane	205	5.00	10.0	ug/L	10	200	ND	103	74-126%	---	---	
1,2-Dibromo-3-chloropropane	190	25.0	50.0	ug/L	10	200	ND	95	62-128%	---	---	
1,2-Dibromoethane (EDB)	202	2.50	5.00	ug/L	10	200	ND	101	77-121%	---	---	
Dibromomethane	209	5.00	10.0	ug/L	10	200	ND	104	79-123%	---	---	
1,2-Dichlorobenzene	184	2.50	5.00	ug/L	10	200	ND	92	80-120%	---	---	
1,3-Dichlorobenzene	190	2.50	5.00	ug/L	10	200	ND	95	80-120%	---	---	
1,4-Dichlorobenzene	180	2.50	5.00	ug/L	10	200	ND	90	79-120%	---	---	
Dichlorodifluoromethane	185	5.00	10.0	ug/L	10	200	ND	93	32-152%	---	---	
1,1-Dichloroethane	208	2.00	4.00	ug/L	10	200	ND	104	77-125%	---	---	
1,2-Dichloroethane (EDC)	197	2.00	4.00	ug/L	10	200	ND	98	73-128%	---	---	
1,1-Dichloroethene	218	2.00	4.00	ug/L	10	200	ND	109	71-131%	---	---	
cis-1,2-Dichloroethene	202	2.00	4.00	ug/L	10	200	ND	101	78-123%	---	---	
trans-1,2-Dichloroethene	202	2.00	4.00	ug/L	10	200	ND	101	75-124%	---	---	
1,2-Dichloropropane	197	2.50	5.00	ug/L	10	200	ND	99	78-122%	---	---	
1,3-Dichloropropane	190	5.00	10.0	ug/L	10	200	ND	95	80-120%	---	---	
2,2-Dichloropropane	166	5.00	10.0	ug/L	10	200	ND	83	60-139%	---	---	
1,1-Dichloropropene	211	5.00	10.0	ug/L	10	200	ND	105	79-125%	---	---	
cis-1,3-Dichloropropene	172	5.00	10.0	ug/L	10	200	ND	86	75-124%	---	---	
trans-1,3-Dichloropropene	199	5.00	10.0	ug/L	10	200	ND	100	73-127%	---	---	
Ethylbenzene	201	2.50	5.00	ug/L	10	200	ND	100	79-121%	---	---	
Hexachlorobutadiene	186	25.0	50.0	ug/L	10	200	ND	93	66-134%	---	---	
2-Hexanone	256	100	100	ug/L	10	400	ND	64	57-139%	---	---	Q-54e
Isopropylbenzene	219	5.00	10.0	ug/L	10	200	ND	110	72-131%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0741 - EPA 5030B						Water						
Matrix Spike (22D0741-MS1)			Prepared: 04/19/22 15:52 Analyzed: 04/20/22 06:31									
QC Source Sample: EB-041322 (A2D0663-43)												
4-Isopropyltoluene	202	5.00	10.0	ug/L	10	200	ND	101	77-127%	---	---	
Methylene chloride	203	50.0	100	ug/L	10	200	ND	101	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	355	50.0	100	ug/L	10	400	ND	89	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	204	5.00	10.0	ug/L	10	200	ND	102	71-124%	---	---	
Naphthalene	151	10.0	20.0	ug/L	10	200	ND	75	61-128%	---	---	
n-Propylbenzene	194	2.50	5.00	ug/L	10	200	ND	97	76-126%	---	---	
Styrene	182	5.00	10.0	ug/L	10	200	ND	91	78-123%	---	---	
1,1,1,2-Tetrachloroethane	194	2.00	4.00	ug/L	10	200	ND	97	78-124%	---	---	
1,1,2,2-Tetrachloroethane	186	2.50	5.00	ug/L	10	200	ND	93	71-121%	---	---	
Tetrachloroethene (PCE)	215	2.00	4.00	ug/L	10	200	ND	107	74-129%	---	---	
Toluene	194	5.00	10.0	ug/L	10	200	ND	97	80-121%	---	---	
1,2,3-Trichlorobenzene	181	10.0	20.0	ug/L	10	200	ND	90	69-129%	---	---	
1,2,4-Trichlorobenzene	175	10.0	20.0	ug/L	10	200	ND	88	69-130%	---	---	
1,1,1-Trichloroethane	222	2.00	4.00	ug/L	10	200	ND	111	74-131%	---	---	
1,1,2-Trichloroethane	199	2.50	5.00	ug/L	10	200	ND	100	80-120%	---	---	
Trichloroethene (TCE)	206	2.00	4.00	ug/L	10	200	ND	103	79-123%	---	---	
Trichlorofluoromethane	228	10.0	20.0	ug/L	10	200	ND	114	65-141%	---	---	
1,2,3-Trichloropropane	176	5.00	10.0	ug/L	10	200	ND	88	73-122%	---	---	
1,2,4-Trimethylbenzene	204	5.00	10.0	ug/L	10	200	ND	102	76-124%	---	---	
1,3,5-Trimethylbenzene	205	5.00	10.0	ug/L	10	200	ND	102	75-124%	---	---	
Vinyl chloride	205	2.00	4.00	ug/L	10	200	ND	102	58-137%	---	---	
m,p-Xylene	427	5.00	10.0	ug/L	10	400	ND	107	80-121%	---	---	
o-Xylene	201	2.50	5.00	ug/L	10	200	ND	100	78-122%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Blank (22D0770-BLK1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 15:59									
<u>EPA 8260D</u>												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Blank (22D0770-BLK1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 15:59									
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	ug/L	1	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 106 % Limits: 80-120 % Dilution: 1x

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Blank (22D0770-BLK1)						Prepared: 04/20/22 07:00 Analyzed: 04/20/22 15:59						
<i>Surr: Toluene-d8 (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		"						

LCS (22D0770-BS1)						Prepared: 04/20/22 07:00 Analyzed: 04/20/22 14:29						
EPA 8260D												
Acetone	33.6	10.0	20.0	ug/L	1	40.0	---	84	80-120%	---	---	
Acrylonitrile	20.0	1.00	2.00	ug/L	1	20.0	---	100	80-120%	---	---	
Benzene	21.0	0.100	0.200	ug/L	1	20.0	---	105	80-120%	---	---	
Bromobenzene	18.4	0.250	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Bromochloromethane	21.5	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
Bromodichloromethane	21.4	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromoform	23.9	0.500	1.00	ug/L	1	20.0	---	119	80-120%	---	---	
Bromomethane	22.3	5.00	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
2-Butanone (MEK)	33.9	5.00	10.0	ug/L	1	40.0	---	85	80-120%	---	---	
n-Butylbenzene	19.7	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
sec-Butylbenzene	21.2	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
tert-Butylbenzene	19.9	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Carbon disulfide	21.6	5.00	10.0	ug/L	1	20.0	---	108	80-120%	---	---	
Carbon tetrachloride	22.2	0.500	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Chlorobenzene	19.5	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Chloroethane	20.4	5.00	5.00	ug/L	1	20.0	---	102	80-120%	---	---	
Chloroform	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Chloromethane	20.6	2.50	5.00	ug/L	1	20.0	---	103	80-120%	---	---	
2-Chlorotoluene	19.4	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
4-Chlorotoluene	19.0	0.500	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Dibromochloromethane	21.1	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dibromo-3-chloropropane	20.1	2.50	5.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.0	0.250	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Dibromomethane	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichlorobenzene	18.8	0.250	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
1,3-Dichlorobenzene	19.3	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,4-Dichlorobenzene	18.5	0.250	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Dichlorodifluoromethane	20.4	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,1-Dichloroethane	20.8	0.200	0.400	ug/L	1	20.0	---	104	80-120%	---	---	

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ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
LCS (22D0770-BS1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 14:29									
1,2-Dichloroethane (EDC)	20.0	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	21.8	0.200	0.400	ug/L	1	20.0	---	109	80-120%	---	---	
cis-1,2-Dichloroethene	20.6	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
trans-1,2-Dichloroethene	20.6	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dichloropropane	20.0	0.250	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
1,3-Dichloropropane	19.7	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
2,2-Dichloropropane	20.0	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloropropene	21.7	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
cis-1,3-Dichloropropene	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
trans-1,3-Dichloropropene	21.2	0.500	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Ethylbenzene	20.2	0.250	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Hexachlorobutadiene	19.4	2.50	5.00	ug/L	1	20.0	---	97	80-120%	---	---	
2-Hexanone	28.6	10.0	10.0	ug/L	1	40.0	---	72	80-120%	---	---	Q-55
Isopropylbenzene	22.4	0.500	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
4-Isopropyltoluene	20.5	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Methylene chloride	20.3	5.00	10.0	ug/L	1	20.0	---	102	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	37.3	5.00	10.0	ug/L	1	40.0	---	93	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	21.4	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Naphthalene	16.5	1.00	2.00	ug/L	1	20.0	---	82	80-120%	---	---	
n-Propylbenzene	19.6	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Styrene	18.7	0.500	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.6	0.200	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1,2,2-Tetrachloroethane	18.8	0.250	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Tetrachloroethene (PCE)	20.9	0.200	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
Toluene	19.5	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2,3-Trichlorobenzene	19.0	1.00	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	18.9	1.00	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,1-Trichloroethane	21.8	0.200	0.400	ug/L	1	20.0	---	109	80-120%	---	---	
1,1,2-Trichloroethane	20.2	0.250	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
Trichloroethene (TCE)	20.6	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
Trichlorofluoromethane	22.4	1.00	2.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,2,3-Trichloropropane	18.2	0.500	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
1,2,4-Trimethylbenzene	21.0	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
1,3,5-Trimethylbenzene	20.7	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
LCS (22D0770-BS1)						Prepared: 04/20/22 07:00 Analyzed: 04/20/22 14:29						
Vinyl chloride	20.5	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
m,p-Xylene	43.2	0.500	1.00	ug/L	1	40.0	---	108	80-120%	---	---	
o-Xylene	20.7	0.250	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						

Duplicate (22D0770-DUP1)	Prepared: 04/20/22 07:00 Analyzed: 04/20/22 19:22
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QC Source Sample: SB-8 (A2D0663-20RE1)

EPA 8260D

Acetone	ND	10.0	20.0	ug/L	1	---	ND	---	---	---	30%
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%
Benzene	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	30%
Bromobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Bromoform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Bromomethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%
Chloroethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%
Chloroform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Chloromethane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%
Dibromomethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Duplicate (22D0770-DUP1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 19:22									
QC Source Sample: SB-8 (A2D0663-20RE1)												
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Styrene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	Q-42
Toluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Duplicate (22D0770-DUP1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 19:22									
QC Source Sample: SB-8 (A2D0663-20RE1)												
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	Q-42
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
o-Xylene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						

Duplicate (22D0770-DUP2)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 20:52									
QC Source Sample: Non-SDG (A2D0717-01)												
Acetone	ND	10.0	20.0	ug/L	1	---	ND	---	---	---	30%	
Acrylonitrile	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
Benzene	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	30%	
Bromobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
n-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Carbon disulfide	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Chlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Chloroethane	ND	5.00	5.00	ug/L	1	---	ND	---	---	---	30%	
Chloroform	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Chloromethane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Duplicate (22D0770-DUP2)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 20:52									
QC Source Sample: Non-SDG (A2D0717-01)												
2-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Dibromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dibromomethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Ethylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
2-Hexanone	ND	10.0	10.0	ug/L	1	---	ND	---	---	---	30%	
Isopropylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Naphthalene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
n-Propylbenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Styrene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Duplicate (22D0770-DUP2)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 20:52									
QC Source Sample: Non-SDG (A2D0717-01)												
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	6.93	0.200	0.400	ug/L	1	---	6.42	---	---	8	30%	
Toluene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Trichloroethene (TCE)	0.690	0.200	0.400	ug/L	1	---	0.580	---	---	17	30%	
Trichlorofluoromethane	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
m,p-Xylene	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
o-Xylene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>98 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						

Matrix Spike (22D0770-MS1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 22:00									
QC Source Sample: Non-SDG (A2D0717-03)												
EPA 8260D												
Acetone	308	100	200	ug/L	10	400	ND	77	39-160%	---	---	
Acrylonitrile	198	10.0	20.0	ug/L	10	200	ND	99	63-135%	---	---	
Benzene	887	1.00	2.00	ug/L	10	200	705	91	79-120%	---	---	
Bromobenzene	175	2.50	5.00	ug/L	10	200	ND	88	80-120%	---	---	
Bromochloromethane	210	5.00	10.0	ug/L	10	200	ND	105	78-123%	---	---	
Bromodichloromethane	211	5.00	10.0	ug/L	10	200	ND	106	79-125%	---	---	
Bromoform	229	5.00	10.0	ug/L	10	200	ND	115	66-130%	---	---	
Bromomethane	235	50.0	50.0	ug/L	10	200	ND	118	53-141%	---	---	
2-Butanone (MEK)	305	50.0	100	ug/L	10	400	ND	76	56-143%	---	---	
n-Butylbenzene	204	5.00	10.0	ug/L	10	200	ND	102	75-128%	---	---	
sec-Butylbenzene	211	5.00	10.0	ug/L	10	200	ND	106	77-126%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Matrix Spike (22D0770-MS1)			Prepared: 04/20/22 07:00 Analyzed: 04/20/22 22:00									
QC Source Sample: Non-SDG (A2D0717-03)												
tert-Butylbenzene	202	5.00	10.0	ug/L	10	200	ND	101	78-124%	---	---	
Carbon disulfide	221	50.0	100	ug/L	10	200	ND	111	64-133%	---	---	
Carbon tetrachloride	228	5.00	10.0	ug/L	10	200	ND	114	72-136%	---	---	
Chlorobenzene	194	2.50	5.00	ug/L	10	200	ND	97	80-120%	---	---	
Chloroethane	210	50.0	50.0	ug/L	10	200	ND	105	60-138%	---	---	
Chloroform	212	5.00	10.0	ug/L	10	200	ND	106	79-124%	---	---	
Chloromethane	206	25.0	50.0	ug/L	10	200	ND	103	50-139%	---	---	
2-Chlorotoluene	192	5.00	10.0	ug/L	10	200	ND	96	79-122%	---	---	
4-Chlorotoluene	186	5.00	10.0	ug/L	10	200	ND	93	78-122%	---	---	
Dibromochloromethane	204	5.00	10.0	ug/L	10	200	ND	102	74-126%	---	---	
1,2-Dibromo-3-chloropropane	193	25.0	50.0	ug/L	10	200	ND	96	62-128%	---	---	
1,2-Dibromoethane (EDB)	204	2.50	5.00	ug/L	10	200	ND	102	77-121%	---	---	
Dibromomethane	207	5.00	10.0	ug/L	10	200	ND	104	79-123%	---	---	
1,2-Dichlorobenzene	180	2.50	5.00	ug/L	10	200	ND	90	80-120%	---	---	
1,3-Dichlorobenzene	186	2.50	5.00	ug/L	10	200	ND	93	80-120%	---	---	
1,4-Dichlorobenzene	178	2.50	5.00	ug/L	10	200	ND	89	79-120%	---	---	
Dichlorodifluoromethane	215	5.00	10.0	ug/L	10	200	ND	107	32-152%	---	---	
1,1-Dichloroethane	211	2.00	4.00	ug/L	10	200	ND	106	77-125%	---	---	
1,2-Dichloroethane (EDC)	195	2.00	4.00	ug/L	10	200	ND	97	73-128%	---	---	
1,1-Dichloroethene	226	2.00	4.00	ug/L	10	200	ND	113	71-131%	---	---	
cis-1,2-Dichloroethene	233	2.00	4.00	ug/L	10	200	24.0	104	78-123%	---	---	
trans-1,2-Dichloroethene	211	2.00	4.00	ug/L	10	200	ND	106	75-124%	---	---	
1,2-Dichloropropane	201	2.50	5.00	ug/L	10	200	ND	101	78-122%	---	---	
1,3-Dichloropropane	190	5.00	10.0	ug/L	10	200	ND	95	80-120%	---	---	
2,2-Dichloropropane	173	5.00	10.0	ug/L	10	200	ND	87	60-139%	---	---	
1,1-Dichloropropene	221	5.00	10.0	ug/L	10	200	ND	111	79-125%	---	---	
cis-1,3-Dichloropropene	184	5.00	10.0	ug/L	10	200	ND	92	75-124%	---	---	
trans-1,3-Dichloropropene	197	5.00	10.0	ug/L	10	200	ND	98	73-127%	---	---	
Ethylbenzene	653	2.50	5.00	ug/L	10	200	465	94	79-121%	---	---	
Hexachlorobutadiene	191	25.0	50.0	ug/L	10	200	ND	96	66-134%	---	---	
2-Hexanone	271	100	100	ug/L	10	400	ND	68	57-139%	---	---	Q-54i
Isopropylbenzene	234	5.00	10.0	ug/L	10	200	6.70	114	72-131%	---	---	
4-Isopropyltoluene	206	5.00	10.0	ug/L	10	200	ND	103	77-127%	---	---	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0770 - EPA 5030B						Water						
Matrix Spike (22D0770-MS1)						Prepared: 04/20/22 07:00 Analyzed: 04/20/22 22:00						
QC Source Sample: Non-SDG (A2D0717-03)												
Methylene chloride	202	50.0	100	ug/L	10	200	ND	101	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	370	50.0	100	ug/L	10	400	ND	92	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	208	5.00	10.0	ug/L	10	200	ND	104	71-124%	---	---	
Naphthalene	252	10.0	20.0	ug/L	10	200	60.7	95	61-128%	---	---	
n-Propylbenzene	212	2.50	5.00	ug/L	10	200	15.5	98	76-126%	---	---	
Styrene	190	5.00	10.0	ug/L	10	200	ND	92	78-123%	---	---	
1,1,1,2-Tetrachloroethane	193	2.00	4.00	ug/L	10	200	ND	97	78-124%	---	---	
1,1,2,2-Tetrachloroethane	176	2.50	5.00	ug/L	10	200	ND	88	71-121%	---	---	
Tetrachloroethene (PCE)	216	2.00	4.00	ug/L	10	200	ND	108	74-129%	---	---	
Toluene	5040	5.00	10.0	ug/L	10	200	5340	-151	80-121%	---	---	Q-03
1,2,3-Trichlorobenzene	185	10.0	20.0	ug/L	10	200	ND	93	69-129%	---	---	
1,2,4-Trichlorobenzene	189	10.0	20.0	ug/L	10	200	ND	94	69-130%	---	---	
1,1,1-Trichloroethane	223	2.00	4.00	ug/L	10	200	ND	112	74-131%	---	---	
1,1,2-Trichloroethane	194	2.50	5.00	ug/L	10	200	ND	97	80-120%	---	---	
Trichloroethene (TCE)	211	2.00	4.00	ug/L	10	200	3.90	103	79-123%	---	---	
Trichlorofluoromethane	230	10.0	20.0	ug/L	10	200	ND	115	65-141%	---	---	
1,2,3-Trichloropropane	172	5.00	10.0	ug/L	10	200	ND	86	73-122%	---	---	
1,2,4-Trimethylbenzene	411	5.00	10.0	ug/L	10	200	200	105	76-124%	---	---	
1,3,5-Trimethylbenzene	260	5.00	10.0	ug/L	10	200	49.4	105	75-124%	---	---	
Vinyl chloride	221	2.00	4.00	ug/L	10	200	ND	111	58-137%	---	---	
m,p-Xylene	2160	5.00	10.0	ug/L	10	400	1890	69	80-121%	---	---	Q-01
o-Xylene	1140	2.50	5.00	ug/L	10	200	982	76	78-122%	---	---	Q-01
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>96 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>95 %</i>		<i>80-120 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Blank (22D0773-BLK1)			Prepared: 04/20/22 10:00 Analyzed: 04/20/22 12:51									
<u>5035A/8260D</u>												
Acetone	ND	667	667	ug/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	3.33	6.67	ug/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Blank (22D0773-BLK1)			Prepared: 04/20/22 10:00 Analyzed: 04/20/22 12:51									
1,2-Dichloropropane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 107 % Limits: 80-120 % Dilution: 1x

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ANALYTICAL REPORT

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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Blank (22D0773-BLK1)						Prepared: 04/20/22 10:00 Analyzed: 04/20/22 12:51						
<i>Surr: Toluene-d8 (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>98 %</i>		<i>79-120 %</i>		<i>"</i>						
LCS (22D0773-BS1)						Prepared: 04/20/22 10:00 Analyzed: 04/20/22 11:57						A-01
5035A/8260D												
Acetone	1580	1000	1000	ug/kg wet	50	2000	---	79	80-120%	---	---	Q-55
Acrylonitrile	983	50.0	100	ug/kg wet	50	1000	---	98	80-120%	---	---	
Benzene	1120	5.00	10.0	ug/kg wet	50	1000	---	112	80-120%	---	---	
Bromobenzene	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Bromochloromethane	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Bromodichloromethane	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Bromoform	981	50.0	100	ug/kg wet	50	1000	---	98	80-120%	---	---	
Bromomethane	1710	500	500	ug/kg wet	50	1000	---	171	80-120%	---	---	Q-56
2-Butanone (MEK)	1890	250	500	ug/kg wet	50	2000	---	95	80-120%	---	---	
n-Butylbenzene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
sec-Butylbenzene	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
tert-Butylbenzene	934	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
Carbon disulfide	1240	250	500	ug/kg wet	50	1000	---	124	80-120%	---	---	Q-56
Carbon tetrachloride	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Chlorobenzene	987	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Chloroethane	2160	250	500	ug/kg wet	50	1000	---	216	80-120%	---	---	ICV-01, Q-56
Chloroform	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
Chloromethane	1080	125	250	ug/kg wet	50	1000	---	108	80-120%	---	---	
2-Chlorotoluene	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
4-Chlorotoluene	982	25.0	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Dibromochloromethane	915	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
1,2-Dibromo-3-chloropropane	873	125	250	ug/kg wet	50	1000	---	87	80-120%	---	---	
1,2-Dibromoethane (EDB)	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
Dibromomethane	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,2-Dichlorobenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
1,3-Dichlorobenzene	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,4-Dichlorobenzene	976	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Dichlorodifluoromethane	1080	50.0	100	ug/kg wet	50	1000	---	108	80-120%	---	---	ICV-01
1,1-Dichloroethane	1120	12.5	25.0	ug/kg wet	50	1000	---	112	80-120%	---	---	

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
LCS (22D0773-BS1)						Prepared: 04/20/22 10:00 Analyzed: 04/20/22 11:57						A-01
1,2-Dichloroethane (EDC)	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
1,1-Dichloroethene	1450	12.5	25.0	ug/kg wet	50	1000	---	145	80-120%	---	---	Q-56
cis-1,2-Dichloroethene	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
trans-1,2-Dichloroethene	1090	12.5	25.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
1,2-Dichloropropane	1120	12.5	25.0	ug/kg wet	50	1000	---	112	80-120%	---	---	
1,3-Dichloropropane	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
2,2-Dichloropropane	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
1,1-Dichloropropene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
cis-1,3-Dichloropropene	901	25.0	50.0	ug/kg wet	50	1000	---	90	80-120%	---	---	
trans-1,3-Dichloropropene	870	25.0	50.0	ug/kg wet	50	1000	---	87	80-120%	---	---	
Ethylbenzene	961	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Hexachlorobutadiene	1030	50.0	100	ug/kg wet	50	1000	---	103	80-120%	---	---	
2-Hexanone	1700	250	500	ug/kg wet	50	2000	---	85	80-120%	---	---	
Isopropylbenzene	998	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
4-Isopropyltoluene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Methylene chloride	1100	250	500	ug/kg wet	50	1000	---	110	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1780	250	500	ug/kg wet	50	2000	---	89	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Naphthalene	888	50.0	100	ug/kg wet	50	1000	---	89	80-120%	---	---	
n-Propylbenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Styrene	970	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,1,1,2-Tetrachloroethane	954	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
Tetrachloroethene (PCE)	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Toluene	997	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2,3-Trichlorobenzene	989	125	250	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2,4-Trichlorobenzene	999	125	250	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,1,1-Trichloroethane	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,1,2-Trichloroethane	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Trichloroethene (TCE)	1090	12.5	25.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
Trichlorofluoromethane	2040	50.0	100	ug/kg wet	50	1000	---	204	80-120%	---	---	Q-56
1,2,3-Trichloropropane	980	25.0	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,2,4-Trimethylbenzene	979	25.0	50.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,3,5-Trimethylbenzene	994	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
LCS (22D0773-BS1)						Prepared: 04/20/22 10:00 Analyzed: 04/20/22 11:57						A-01
Vinyl chloride	1160	12.5	25.0	ug/kg wet	50	1000	---	116	80-120%	---	---	
m,p-Xylene	1860	25.0	50.0	ug/kg wet	50	2000	---	93	80-120%	---	---	
o-Xylene	936	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>		<i>"</i>						

Duplicate (22D0773-DUP1) Prepared: 04/11/22 10:20 Analyzed: 04/20/22 15:32

QC Source Sample: SB01-0.5-3 (A2D0663-01)

5035A/8260D

Acetone	ND	1240	1240	ug/kg dry	50	---	ND	---	---	---	30%
Acrylonitrile	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%
Benzene	ND	6.22	12.4	ug/kg dry	50	---	ND	---	---	---	30%
Bromobenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%
Bromochloromethane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Bromodichloromethane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Bromoform	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%
Bromomethane	ND	622	622	ug/kg dry	50	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	311	622	ug/kg dry	50	---	ND	---	---	---	30%
n-Butylbenzene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
sec-Butylbenzene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
tert-Butylbenzene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Carbon disulfide	ND	311	622	ug/kg dry	50	---	ND	---	---	---	30%
Carbon tetrachloride	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Chlorobenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%
Chloroethane	ND	311	622	ug/kg dry	50	---	ND	---	---	---	30%
Chloroform	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Chloromethane	ND	155	311	ug/kg dry	50	---	ND	---	---	---	30%
2-Chlorotoluene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
4-Chlorotoluene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Dibromochloromethane	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	155	311	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%
Dibromomethane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%

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Philip Nerenberg

Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Duplicate (22D0773-DUP1)			Prepared: 04/11/22 10:20 Analyzed: 04/20/22 15:32									
QC Source Sample: SB01-0.5-3 (A2D0663-01)												
1,2-Dichlorobenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MIBK)	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	155	311	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	155	311	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Duplicate (22D0773-DUP1)			Prepared: 04/11/22 10:20 Analyzed: 04/20/22 15:32									
QC Source Sample: SB01-0.5-3 (A2D0663-01)												
1,1,2-Trichloroethane	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	62.2	124	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	31.1	62.2	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	15.5	31.1	ug/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>		<i>"</i>						

Duplicate (22D0773-DUP2)			Prepared: 04/11/22 12:30 Analyzed: 04/20/22 19:07									
QC Source Sample: SB05-3-10 (A2D0663-08)												
5035A/8260D												
Acetone	ND	1460	1460	ug/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	7.31	14.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	731	731	ug/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	366	731	ug/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	366	731	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	366	731	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Duplicate (22D0773-DUP2)						Prepared: 04/11/22 12:30 Analyzed: 04/20/22 19:07						
QC Source Sample: SB05-3-10 (A2D0663-08)												
Chloromethane	ND	183	366	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	183	366	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	366	731	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	366	731	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	366	731	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Duplicate (22D0773-DUP2)			Prepared: 04/11/22 12:30 Analyzed: 04/20/22 19:07									
QC Source Sample: SB05-3-10 (A2D0663-08)												
1,1,1,2-Tetrachloroethane	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	183	366	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	183	366	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	73.1	146	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	36.6	73.1	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	18.3	36.6	ug/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>		<i>"</i>						

Duplicate (22D0773-DUP3)			Prepared: 04/19/22 10:32 Analyzed: 04/20/22 21:48									
QC Source Sample: DUP-01 (A2D0663-21)												
Acetone	ND	1780	1780	ug/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	8.92	17.8	ug/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	892	892	ug/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	446	892	ug/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A							Soil					
Duplicate (22D0773-DUP3)			Prepared: 04/19/22 10:32 Analyzed: 04/20/22 21:48									
QC Source Sample: DUP-01 (A2D0663-21)												
tert-Butylbenzene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	446	892	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	446	892	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	223	446	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	223	446	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	446	892	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0773 - EPA 5035A						Soil						
Duplicate (22D0773-DUP3)			Prepared: 04/19/22 10:32 Analyzed: 04/20/22 21:48									
QC Source Sample: DUP-01 (A2D0663-21)												
Methylene chloride	ND	446	892	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	446	892	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	223	446	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	223	446	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	89.2	178	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	44.6	89.2	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	22.3	44.6	ug/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>97 %</i>		<i>79-120 %</i>		<i>"</i>						

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Blank (22D0831-BLK1)			Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:54									
<u>5035A/8260D</u>												
Acetone	ND	667	667	ug/kg wet	50	---	---	---	---	---	---	
Acrylonitrile	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Benzene	ND	3.33	6.67	ug/kg wet	50	---	---	---	---	---	---	
Bromobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Bromochloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromodichloromethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Bromoform	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Bromomethane	ND	333	333	ug/kg wet	50	---	---	---	---	---	---	
2-Butanone (MEK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
n-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
sec-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
tert-Butylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Carbon disulfide	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Carbon tetrachloride	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Chloroform	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chloromethane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
2-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Chlorotoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromochloromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Dibromomethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Blank (22D0831-BLK1)			Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:54									
1,2-Dichloropropane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,3-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
2,2-Dichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Ethylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
2-Hexanone	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Isopropylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
4-Isopropyltoluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Naphthalene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
n-Propylbenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Styrene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Toluene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	83.3	167	ug/kg wet	50	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Trichlorofluoromethane	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
m,p-Xylene	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
o-Xylene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) Recovery: 110 % Limits: 80-120 % Dilution: 1x

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ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Blank (22D0831-BLK1)						Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:54						
<i>Surr: Toluene-d8 (Surr)</i>		<i>Recovery: 102 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>99 %</i>		<i>79-120 %</i>		<i>"</i>						
LCS (22D0831-BS1)						Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:00						
5035A/8260D												
Acetone	1430	1000	1000	ug/kg wet	50	2000	---	71	80-120%	---	---	Q-55
Acrylonitrile	1050	50.0	100	ug/kg wet	50	1000	---	105	80-120%	---	---	
Benzene	1150	5.00	10.0	ug/kg wet	50	1000	---	115	80-120%	---	---	
Bromobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Bromochloromethane	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
Bromodichloromethane	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Bromoform	979	50.0	100	ug/kg wet	50	1000	---	98	80-120%	---	---	
Bromomethane	1860	500	500	ug/kg wet	50	1000	---	186	80-120%	---	---	Q-56
2-Butanone (MEK)	1830	250	500	ug/kg wet	50	2000	---	92	80-120%	---	---	
n-Butylbenzene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
sec-Butylbenzene	986	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
tert-Butylbenzene	897	25.0	50.0	ug/kg wet	50	1000	---	90	80-120%	---	---	
Carbon disulfide	932	250	500	ug/kg wet	50	1000	---	93	80-120%	---	---	
Carbon tetrachloride	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Chlorobenzene	993	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
Chloroethane	2760	250	500	ug/kg wet	50	1000	---	276	80-120%	---	---	ICV-01, Q-56
Chloroform	1110	25.0	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
Chloromethane	1180	125	250	ug/kg wet	50	1000	---	118	80-120%	---	---	
2-Chlorotoluene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
4-Chlorotoluene	969	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Dibromochloromethane	923	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
1,2-Dibromo-3-chloropropane	826	125	250	ug/kg wet	50	1000	---	83	80-120%	---	---	
1,2-Dibromoethane (EDB)	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Dibromomethane	1100	25.0	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
1,2-Dichlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
1,3-Dichlorobenzene	987	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,4-Dichlorobenzene	977	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Dichlorodifluoromethane	1190	50.0	100	ug/kg wet	50	1000	---	119	80-120%	---	---	ICV-01
1,1-Dichloroethane	1130	12.5	25.0	ug/kg wet	50	1000	---	113	80-120%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
LCS (22D0831-BS1)			Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:00									
1,2-Dichloroethane (EDC)	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
1,1-Dichloroethene	1090	12.5	25.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
cis-1,2-Dichloroethene	1090	12.5	25.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
trans-1,2-Dichloroethene	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,2-Dichloropropane	1140	12.5	25.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
1,3-Dichloropropane	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
2,2-Dichloropropane	975	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,1-Dichloropropene	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
cis-1,3-Dichloropropene	896	25.0	50.0	ug/kg wet	50	1000	---	90	80-120%	---	---	
trans-1,3-Dichloropropene	883	25.0	50.0	ug/kg wet	50	1000	---	88	80-120%	---	---	
Ethylbenzene	957	12.5	25.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Hexachlorobutadiene	994	50.0	100	ug/kg wet	50	1000	---	99	80-120%	---	---	
2-Hexanone	1670	250	500	ug/kg wet	50	2000	---	84	80-120%	---	---	
Isopropylbenzene	985	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
4-Isopropyltoluene	962	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Methylene chloride	1130	250	500	ug/kg wet	50	1000	---	113	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	1820	250	500	ug/kg wet	50	2000	---	91	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Naphthalene	856	50.0	100	ug/kg wet	50	1000	---	86	80-120%	---	---	
n-Propylbenzene	985	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Styrene	988	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,1,1,2-Tetrachloroethane	968	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1120	25.0	50.0	ug/kg wet	50	1000	---	112	80-120%	---	---	
Tetrachloroethene (PCE)	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Toluene	992	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2,3-Trichlorobenzene	960	125	250	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,2,4-Trichlorobenzene	948	125	250	ug/kg wet	50	1000	---	95	80-120%	---	---	
1,1,1-Trichloroethane	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
1,1,2-Trichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Trichloroethene (TCE)	1080	12.5	25.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
Trichlorofluoromethane	2390	50.0	100	ug/kg wet	50	1000	---	239	80-120%	---	---	Q-56
1,2,3-Trichloropropane	975	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,2,4-Trimethylbenzene	941	25.0	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
1,3,5-Trimethylbenzene	960	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	Q-56

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Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
LCS (22D0831-BS1)						Prepared: 04/21/22 08:00 Analyzed: 04/21/22 14:00						
Vinyl chloride	1260	12.5	25.0	ug/kg wet	50	1000	---	126	80-120%	---	---	Q-56
m,p-Xylene	1850	25.0	50.0	ug/kg wet	50	2000	---	93	80-120%	---	---	
o-Xylene	914	12.5	25.0	ug/kg wet	50	1000	---	91	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 109 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>91 %</i>		<i>79-120 %</i>		<i>"</i>						

Duplicate (22D0831-DUP1) Prepared: 04/14/22 12:00 Analyzed: 04/21/22 16:41

QC Source Sample: DU-01 (A2D0663-23)

5035A/8260D

Acetone	ND	1610	1610	ug/kg dry	50	---	ND	---	---	---	30%
Acrylonitrile	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%
Benzene	ND	8.03	16.1	ug/kg dry	50	---	ND	---	---	---	30%
Bromobenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%
Bromochloromethane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Bromodichloromethane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Bromoform	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%
Bromomethane	ND	803	803	ug/kg dry	50	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	401	803	ug/kg dry	50	---	ND	---	---	---	30%
n-Butylbenzene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
sec-Butylbenzene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
tert-Butylbenzene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Carbon disulfide	ND	401	803	ug/kg dry	50	---	ND	---	---	---	30%
Carbon tetrachloride	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Chlorobenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%
Chloroethane	ND	401	803	ug/kg dry	50	---	ND	---	---	---	30%
Chloroform	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Chloromethane	ND	201	401	ug/kg dry	50	---	ND	---	---	---	30%
2-Chlorotoluene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
4-Chlorotoluene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Dibromochloromethane	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	201	401	ug/kg dry	50	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%
Dibromomethane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%

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Philip Nerenberg

Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Duplicate (22D0831-DUP1)			Prepared: 04/14/22 12:00 Analyzed: 04/21/22 16:41									
QC Source Sample: DU-01 (A2D0663-23)												
1,2-Dichlorobenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	401	803	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	401	803	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MIBK)	ND	401	803	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%	
n-Propylbenzene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	201	401	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	201	401	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Duplicate (22D0831-DUP1)			Prepared: 04/14/22 12:00 Analyzed: 04/21/22 16:41									
QC Source Sample: DU-01 (A2D0663-23)												
1,1,2-Trichloroethane	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	80.3	161	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	40.1	80.3	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	20.1	40.1	ug/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>102 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>94 %</i>		<i>79-120 %</i>		<i>"</i>						

Duplicate (22D0831-DUP2)			Prepared: 04/13/22 16:30 Analyzed: 04/21/22 19:22									
QC Source Sample: DU-06 (A2D0663-33)												
5035A/8260D												
Acetone	ND	1300	1300	ug/kg dry	50	---	ND	---	---	---	30%	
Acrylonitrile	ND	64.8	130	ug/kg dry	50	---	ND	---	---	---	30%	
Benzene	ND	6.48	13.0	ug/kg dry	50	---	ND	---	---	---	30%	
Bromobenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	64.8	130	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	648	648	ug/kg dry	50	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	324	648	ug/kg dry	50	---	ND	---	---	---	30%	
n-Butylbenzene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
sec-Butylbenzene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
tert-Butylbenzene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon disulfide	ND	324	648	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	324	648	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Duplicate (22D0831-DUP2)			Prepared: 04/13/22 16:30 Analyzed: 04/21/22 19:22									
QC Source Sample: DU-06 (A2D0663-33)												
Chloromethane	ND	162	324	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	64.8	130	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	162	324	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	64.8	130	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Ethylbenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	64.8	130	ug/kg dry	50	---	ND	---	---	---	30%	
2-Hexanone	ND	324	648	ug/kg dry	50	---	ND	---	---	---	30%	
Isopropylbenzene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
4-Isopropyltoluene	98.4	32.4	64.8	ug/kg dry	50	---	103	---	---	5	30%	
Methylene chloride	ND	324	648	ug/kg dry	50	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	324	648	ug/kg dry	50	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Naphthalene	87.9	64.8	130	ug/kg dry	50	---	91.9	---	---	4	30%	J
n-Propylbenzene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Styrene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Duplicate (22D0831-DUP2)			Prepared: 04/13/22 16:30 Analyzed: 04/21/22 19:22									
QC Source Sample: DU-06 (A2D0663-33)												
1,1,1,2-Tetrachloroethane	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Toluene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	162	324	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	162	324	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	64.8	130	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
m,p-Xylene	ND	32.4	64.8	ug/kg dry	50	---	ND	---	---	---	30%	
o-Xylene	ND	16.2	32.4	ug/kg dry	50	---	ND	---	---	---	30%	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 111 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>101 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>96 %</i>		<i>79-120 %</i>		<i>"</i>						

Matrix Spike (22D0831-MS1)			Prepared: 04/14/22 14:00 Analyzed: 04/21/22 21:36									
QC Source Sample: DU-TRIP (A2D0663-41)												
5035A/8260D												
Acetone	2640	1740	1740	ug/kg dry	50	3480	ND	76	36-164%	---	---	Q-54j
Acrylonitrile	1860	86.9	174	ug/kg dry	50	1740	ND	107	65-134%	---	---	
Benzene	2150	8.69	17.4	ug/kg dry	50	1740	16.6	123	77-121%	---	---	Q-01
Bromobenzene	1750	21.7	43.5	ug/kg dry	50	1740	ND	101	78-121%	---	---	
Bromochloromethane	2000	43.5	86.9	ug/kg dry	50	1740	ND	115	78-125%	---	---	
Bromodichloromethane	1820	43.5	86.9	ug/kg dry	50	1740	ND	105	75-127%	---	---	
Bromoform	1650	86.9	174	ug/kg dry	50	1740	ND	95	67-132%	---	---	
Bromomethane	3560	869	869	ug/kg dry	50	1740	ND	205	53-143%	---	---	Q-54c
2-Butanone (MEK)	3080	435	869	ug/kg dry	50	3480	ND	89	51-148%	---	---	
n-Butylbenzene	1810	43.5	86.9	ug/kg dry	50	1740	ND	104	70-128%	---	---	

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Matrix Spike (22D0831-MS1)						Prepared: 04/14/22 14:00 Analyzed: 04/21/22 21:36						
QC Source Sample: DU-TRIP (A2D0663-41)												
sec-Butylbenzene	1850	43.5	86.9	ug/kg dry	50	1740	ND	107	73-126%	---	---	
tert-Butylbenzene	1670	43.5	86.9	ug/kg dry	50	1740	ND	96	73-125%	---	---	
Carbon disulfide	1810	435	869	ug/kg dry	50	1740	ND	104	63-132%	---	---	
Carbon tetrachloride	1940	43.5	86.9	ug/kg dry	50	1740	ND	112	70-135%	---	---	
Chlorobenzene	1770	21.7	43.5	ug/kg dry	50	1740	ND	102	79-120%	---	---	
Chloroethane	6050	435	869	ug/kg dry	50	1740	ND	348	59-139%	---	---	ICV-01, Q-54a
Chloroform	2030	43.5	86.9	ug/kg dry	50	1740	ND	117	78-123%	---	---	
Chloromethane	2360	217	435	ug/kg dry	50	1740	ND	136	50-136%	---	---	
2-Chlorotoluene	1900	43.5	86.9	ug/kg dry	50	1740	ND	109	75-122%	---	---	
4-Chlorotoluene	1730	43.5	86.9	ug/kg dry	50	1740	ND	100	72-124%	---	---	
Dibromochloromethane	1560	86.9	174	ug/kg dry	50	1740	ND	90	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1460	217	435	ug/kg dry	50	1740	ND	84	61-132%	---	---	
1,2-Dibromoethane (EDB)	1810	43.5	86.9	ug/kg dry	50	1740	ND	104	78-122%	---	---	
Dibromomethane	1930	43.5	86.9	ug/kg dry	50	1740	ND	111	78-125%	---	---	
1,2-Dichlorobenzene	1780	21.7	43.5	ug/kg dry	50	1740	ND	103	78-121%	---	---	
1,3-Dichlorobenzene	1750	21.7	43.5	ug/kg dry	50	1740	ND	101	77-121%	---	---	
1,4-Dichlorobenzene	1730	21.7	43.5	ug/kg dry	50	1740	ND	100	75-120%	---	---	
Dichlorodifluoromethane	2360	86.9	174	ug/kg dry	50	1740	ND	136	29-149%	---	---	ICV-01
1,1-Dichloroethane	2140	21.7	43.5	ug/kg dry	50	1740	ND	123	76-125%	---	---	
1,2-Dichloroethane (EDC)	1850	21.7	43.5	ug/kg dry	50	1740	ND	106	73-128%	---	---	
1,1-Dichloroethene	2140	21.7	43.5	ug/kg dry	50	1740	ND	123	70-131%	---	---	
cis-1,2-Dichloroethene	2020	21.7	43.5	ug/kg dry	50	1740	ND	116	77-123%	---	---	
trans-1,2-Dichloroethene	2050	21.7	43.5	ug/kg dry	50	1740	ND	118	74-125%	---	---	
1,2-Dichloropropane	2040	21.7	43.5	ug/kg dry	50	1740	ND	118	76-123%	---	---	
1,3-Dichloropropane	1860	43.5	86.9	ug/kg dry	50	1740	ND	107	77-121%	---	---	
2,2-Dichloropropane	1660	43.5	86.9	ug/kg dry	50	1740	ND	95	67-133%	---	---	
1,1-Dichloropropene	2040	43.5	86.9	ug/kg dry	50	1740	ND	117	76-125%	---	---	
cis-1,3-Dichloropropene	1540	43.5	86.9	ug/kg dry	50	1740	ND	88	74-126%	---	---	
trans-1,3-Dichloropropene	1490	43.5	86.9	ug/kg dry	50	1740	ND	86	71-130%	---	---	
Ethylbenzene	1740	21.7	43.5	ug/kg dry	50	1740	ND	100	76-122%	---	---	
Hexachlorobutadiene	1840	86.9	174	ug/kg dry	50	1740	ND	106	61-135%	---	---	
2-Hexanone	2860	435	869	ug/kg dry	50	3480	ND	82	53-145%	---	---	
Isopropylbenzene	1800	43.5	86.9	ug/kg dry	50	1740	ND	103	68-134%	---	---	

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Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0831 - EPA 5035A						Soil						
Matrix Spike (22D0831-MS1)			Prepared: 04/14/22 14:00 Analyzed: 04/21/22 21:36									
QC Source Sample: DU-TRIP (A2D0663-41)												
4-Isopropyltoluene	1790	43.5	86.9	ug/kg dry	50	1740	ND	103	73-127%	---	---	
Methylene chloride	2070	435	869	ug/kg dry	50	1740	ND	119	70-128%	---	---	
4-Methyl-2-pentanone (MiBK)	3110	435	869	ug/kg dry	50	3480	ND	90	65-135%	---	---	
Methyl tert-butyl ether (MTBE)	1780	43.5	86.9	ug/kg dry	50	1740	ND	102	73-125%	---	---	
Naphthalene	1590	86.9	174	ug/kg dry	50	1740	ND	91	62-129%	---	---	
n-Propylbenzene	1810	21.7	43.5	ug/kg dry	50	1740	ND	104	73-125%	---	---	
Styrene	1760	43.5	86.9	ug/kg dry	50	1740	ND	101	76-124%	---	---	
1,1,1,2-Tetrachloroethane	1670	21.7	43.5	ug/kg dry	50	1740	ND	96	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1900	43.5	86.9	ug/kg dry	50	1740	ND	109	70-124%	---	---	
Tetrachloroethene (PCE)	1840	21.7	43.5	ug/kg dry	50	1740	ND	106	73-128%	---	---	
Toluene	1810	43.5	86.9	ug/kg dry	50	1740	ND	104	77-121%	---	---	
1,2,3-Trichlorobenzene	1700	217	435	ug/kg dry	50	1740	ND	98	66-130%	---	---	
1,2,4-Trichlorobenzene	1720	217	435	ug/kg dry	50	1740	ND	99	67-129%	---	---	
1,1,1-Trichloroethane	2020	21.7	43.5	ug/kg dry	50	1740	ND	116	73-130%	---	---	
1,1,2-Trichloroethane	1840	21.7	43.5	ug/kg dry	50	1740	ND	106	78-121%	---	---	
Trichloroethene (TCE)	2020	21.7	43.5	ug/kg dry	50	1740	ND	116	77-123%	---	---	
Trichlorofluoromethane	4970	86.9	174	ug/kg dry	50	1740	ND	286	62-140%	---	---	Q-54
1,2,3-Trichloropropane	1690	43.5	86.9	ug/kg dry	50	1740	ND	97	73-125%	---	---	
1,2,4-Trimethylbenzene	1720	43.5	86.9	ug/kg dry	50	1740	ND	99	75-123%	---	---	
1,3,5-Trimethylbenzene	1790	43.5	86.9	ug/kg dry	50	1740	ND	103	73-124%	---	---	
Vinyl chloride	2420	21.7	43.5	ug/kg dry	50	1740	ND	139	56-135%	---	---	Q-54b
m,p-Xylene	3370	43.5	86.9	ug/kg dry	50	3480	ND	97	77-124%	---	---	
o-Xylene	1680	21.7	43.5	ug/kg dry	50	1740	ND	96	77-123%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 110 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>100 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>92 %</i>		<i>79-120 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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 22D1025 - EPA 3546						Soil							
Blank (22D1025-BLK1)			Prepared: 04/27/22 07:19 Analyzed: 04/28/22 08:28						C-07				
<u>EPA 8082A</u>													
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1221	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1232	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1242	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1248	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1254	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1260	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 120 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							
LCS (22D1025-BS1)			Prepared: 04/27/22 07:19 Analyzed: 04/28/22 08:46						C-07				
<u>EPA 8082A</u>													
Aroclor 1016	219	5.00	10.0	ug/kg wet	1	250	---	88	47-134%	---	---		
Aroclor 1260	259	5.00	10.0	ug/kg wet	1	250	---	104	53-140%	---	---		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 132 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>						S-06	
Duplicate (22D1025-DUP1)			Prepared: 04/27/22 07:19 Analyzed: 04/28/22 09:39						C-07				
<u>QC Source Sample: Non-SDG (A2D0585-03)</u>													
Aroclor 1016	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1221	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1232	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1242	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1248	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1254	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1260	ND	5.78	11.6	ug/kg dry	1	---	ND	---	---	---	30%		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 124 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							
Matrix Spike (22D1025-MS1)			Prepared: 04/27/22 07:19 Analyzed: 04/28/22 10:14						C-07				
<u>QC Source Sample: Non-SDG (A2D0971-02)</u>													
<u>EPA 8082A</u>													
Aroclor 1016	168	5.89	11.8	ug/kg dry	1	295	ND	57	47-134%	---	---		
Aroclor 1260	247	5.89	11.8	ug/kg dry	1	295	ND	84	53-140%	---	---		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 105 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							

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Philip Nerenberg, Lab Director



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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 22D1025 - EPA 3546							Soil					

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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 22D1069 - EPA 3546						Soil							
Blank (22D1069-BLK1)			Prepared: 04/28/22 07:31 Analyzed: 04/29/22 08:07						C-07				
<u>EPA 8082A</u>													
Aroclor 1016	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1221	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1232	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1242	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1248	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1254	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
Aroclor 1260	ND	4.55	9.09	ug/kg wet	1	---	---	---	---	---	---		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 116 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							
LCS (22D1069-BS1)			Prepared: 04/28/22 07:31 Analyzed: 04/29/22 08:25						C-07				
<u>EPA 8082A</u>													
Aroclor 1016	213	5.00	10.0	ug/kg wet	1	250	---	85	47-134%	---	---		
Aroclor 1260	243	5.00	10.0	ug/kg wet	1	250	---	97	53-140%	---	---		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 119 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							
Duplicate (22D1069-DUP1)			Prepared: 04/28/22 07:31 Analyzed: 04/29/22 09:18						C-07				
<u>QC Source Sample: Non-SDG (A2D1053-01)</u>													
Aroclor 1016	ND	5.84	11.7	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1221	ND	5.84	11.7	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1232	ND	5.84	11.7	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1242	ND	5.84	11.7	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1248	ND	5.84	11.7	ug/kg dry	1	---	ND	---	---	---	30%		
Aroclor 1254	22.2	5.84	11.7	ug/kg dry	1	---	32.7	---	---	38	30%	P-12, Q-05	
Aroclor 1260	38.0	5.84	11.7	ug/kg dry	1	---	56.6	---	---	39	30%	P-12, Q-05	
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 108 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							
Matrix Spike (22D1069-MS1)			Prepared: 04/28/22 07:31 Analyzed: 04/29/22 09:54						C-07				
<u>QC Source Sample: Non-SDG (A2D1053-01)</u>													
<u>EPA 8082A</u>													
Aroclor 1016	221	5.69	11.4	ug/kg dry	1	284	ND	78	47-134%	---	---		
Aroclor 1260	277	5.69	11.4	ug/kg dry	1	284	56.6	78	53-140%	---	---		
<i>Surr: Decachlorobiphenyl (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 60-125 %</i>		<i>Dilution: 1x</i>							

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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 22D1069 - EPA 3546							Soil					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (22D0716-BLK1)						Prepared: 04/19/22 12:02 Analyzed: 04/19/22 18:45						
<u>EPA 8270E</u>												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	0.227	0.455	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	0.227	0.455	ug/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
Phenol	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (22D0716-BLK1)			Prepared: 04/19/22 12:02 Analyzed: 04/19/22 18:45									
2,3,5,6-Tetrachlorophenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
Aniline	ND	0.0455	0.0909	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
Benzoic acid	ND	1.14	2.27	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (22D0716-BLK1)			Prepared: 04/19/22 12:02 Analyzed: 04/19/22 18:45									
Azobenzene (1,2-DPH)	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	0.227	0.455	ug/L	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	0.455	0.909	ug/L	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	0.227	0.455	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	0.227	0.455	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	0.227	0.455	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	0.0909	0.182	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.0227	0.0455	ug/L	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 70 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>63 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>20 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>86 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>31 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>75 %</i>		<i>43-140 %</i>		<i>"</i>						

LCS (22D0716-BS1)			Prepared: 04/19/22 12:02 Analyzed: 04/19/22 19:19									
EPA 8270E												
Acenaphthene	2.93	0.0100	0.0200	ug/L	1	4.00	---	73	47-122%	---	---	
Acenaphthylene	3.18	0.0100	0.0200	ug/L	1	4.00	---	80	41-130%	---	---	
Anthracene	3.25	0.0100	0.0200	ug/L	1	4.00	---	81	57-123%	---	---	
Benz(a)anthracene	3.28	0.0100	0.0200	ug/L	1	4.00	---	82	58-125%	---	---	
Benzo(a)pyrene	3.64	0.0150	0.0300	ug/L	1	4.00	---	91	54-128%	---	---	
Benzo(b)fluoranthene	3.35	0.0150	0.0300	ug/L	1	4.00	---	84	53-131%	---	---	
Benzo(k)fluoranthene	3.30	0.0150	0.0300	ug/L	1	4.00	---	83	57-129%	---	---	
Benzo(g,h,i)perylene	3.62	0.0100	0.0200	ug/L	1	4.00	---	90	50-134%	---	---	
Chrysene	3.24	0.0100	0.0200	ug/L	1	4.00	---	81	59-123%	---	---	
Dibenz(a,h)anthracene	3.51	0.0100	0.0200	ug/L	1	4.00	---	88	51-134%	---	---	
Fluoranthene	3.36	0.0100	0.0200	ug/L	1	4.00	---	84	57-128%	---	---	
Fluorene	2.93	0.0100	0.0200	ug/L	1	4.00	---	73	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.31	0.0100	0.0200	ug/L	1	4.00	---	83	52-134%	---	---	
1-Methylnaphthalene	2.69	0.0200	0.0400	ug/L	1	4.00	---	67	41-120%	---	---	
2-Methylnaphthalene	2.67	0.0200	0.0400	ug/L	1	4.00	---	67	40-121%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
LCS (22D0716-BS1)						Prepared: 04/19/22 12:02 Analyzed: 04/19/22 19:19						
Naphthalene	2.66	0.0200	0.0400	ug/L	1	4.00	---	67	40-121%	---	---	
Phenanthrene	3.09	0.0100	0.0200	ug/L	1	4.00	---	77	59-120%	---	---	
Pyrene	3.29	0.0100	0.0200	ug/L	1	4.00	---	82	57-126%	---	---	
Carbazole	2.97	0.0150	0.0300	ug/L	1	4.00	---	74	60-122%	---	---	
Dibenzofuran	2.85	0.0100	0.0200	ug/L	1	4.00	---	71	53-120%	---	---	
2-Chlorophenol	2.65	0.0500	0.100	ug/L	1	4.00	---	66	38-120%	---	---	
4-Chloro-3-methylphenol	3.07	0.100	0.200	ug/L	1	4.00	---	77	52-120%	---	---	
2,4-Dichlorophenol	2.81	0.0500	0.100	ug/L	1	4.00	---	70	47-121%	---	---	
2,4-Dimethylphenol	2.50	0.0500	0.100	ug/L	1	4.00	---	62	31-124%	---	---	
2,4-Dinitrophenol	2.98	0.250	0.500	ug/L	1	4.00	---	74	23-143%	---	---	
4,6-Dinitro-2-methylphenol	3.17	0.250	0.500	ug/L	1	4.00	---	79	44-137%	---	---	
2-Methylphenol	2.32	0.0250	0.0500	ug/L	1	4.00	---	58	30-120%	---	---	
3+4-Methylphenol(s)	2.10	0.0250	0.0500	ug/L	1	4.00	---	52	29-120%	---	---	
2-Nitrophenol	2.73	0.100	0.200	ug/L	1	4.00	---	68	47-123%	---	---	
4-Nitrophenol	1.06	0.100	0.200	ug/L	1	4.00	---	26	10-120%	---	---	
Pentachlorophenol (PCP)	2.99	0.100	0.200	ug/L	1	4.00	---	75	35-138%	---	---	
Phenol	1.16	0.200	0.400	ug/L	1	4.00	---	29	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	2.96	0.0500	0.100	ug/L	1	4.00	---	74	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	2.92	0.0500	0.100	ug/L	1	4.00	---	73	50-121%	---	---	
2,4,5-Trichlorophenol	2.84	0.0500	0.100	ug/L	1	4.00	---	71	53-123%	---	---	
2,4,6-Trichlorophenol	2.98	0.0500	0.100	ug/L	1	4.00	---	75	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.56	0.200	0.400	ug/L	1	4.00	---	89	55-135%	---	---	
Butyl benzyl phthalate	3.63	0.200	0.400	ug/L	1	4.00	---	91	53-134%	---	---	
Diethylphthalate	3.32	0.200	0.400	ug/L	1	4.00	---	83	56-125%	---	---	
Dimethylphthalate	3.16	0.200	0.400	ug/L	1	4.00	---	79	45-127%	---	---	
Di-n-butylphthalate	3.68	0.200	0.400	ug/L	1	4.00	---	92	59-127%	---	---	
Di-n-octyl phthalate	3.73	0.200	0.400	ug/L	1	4.00	---	93	51-140%	---	---	
N-Nitrosodimethylamine	1.81	0.0250	0.0500	ug/L	1	4.00	---	45	19-120%	---	---	
N-Nitroso-di-n-propylamine	3.29	0.0250	0.0500	ug/L	1	4.00	---	82	49-120%	---	---	
N-Nitrosodiphenylamine	3.25	0.0250	0.0500	ug/L	1	4.00	---	81	51-123%	---	---	
Bis(2-Chloroethoxy) methane	3.03	0.0250	0.0500	ug/L	1	4.00	---	76	48-120%	---	---	
Bis(2-Chloroethyl) ether	2.88	0.0250	0.0500	ug/L	1	4.00	---	72	43-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	3.34	0.0250	0.0500	ug/L	1	4.00	---	84	41-120%	---	---	Q-41
Hexachlorobenzene	2.98	0.0100	0.0200	ug/L	1	4.00	---	74	53-125%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
LCS (22D0716-BS1)			Prepared: 04/19/22 12:02 Analyzed: 04/19/22 19:19									
Hexachlorobutadiene	2.27	0.0250	0.0500	ug/L	1	4.00	---	57	22-124%	---	---	
Hexachlorocyclopentadiene	2.47	0.0500	0.100	ug/L	1	4.00	---	62	10-127%	---	---	
Hexachloroethane	2.40	0.0250	0.0500	ug/L	1	4.00	---	60	21-120%	---	---	
2-Chloronaphthalene	2.80	0.0100	0.0200	ug/L	1	4.00	---	70	40-120%	---	---	
1,2,4-Trichlorobenzene	2.50	0.0250	0.0500	ug/L	1	4.00	---	63	29-120%	---	---	
4-Bromophenyl phenyl ether	3.07	0.0250	0.0500	ug/L	1	4.00	---	77	55-124%	---	---	
4-Chlorophenyl phenyl ether	2.82	0.0250	0.0500	ug/L	1	4.00	---	70	53-121%	---	---	
Aniline	2.25	0.0500	0.100	ug/L	1	4.00	---	56	10-120%	---	---	
4-Chloroaniline	1.95	0.0250	0.0500	ug/L	1	4.00	---	49	33-120%	---	---	
2-Nitroaniline	3.08	0.200	0.400	ug/L	1	4.00	---	77	55-127%	---	---	
3-Nitroaniline	2.83	0.200	0.400	ug/L	1	4.00	---	71	41-128%	---	---	
4-Nitroaniline	2.36	0.200	0.400	ug/L	1	4.00	---	59	25-120%	---	---	
Nitrobenzene	3.13	0.100	0.200	ug/L	1	4.00	---	78	45-121%	---	---	
2,4-Dinitrotoluene	3.28	0.100	0.200	ug/L	1	4.00	---	82	57-128%	---	---	
2,6-Dinitrotoluene	3.19	0.100	0.200	ug/L	1	4.00	---	80	57-124%	---	---	
Benzoic acid	1.70	1.25	1.25	ug/L	1	8.00	---	21	10-120%	---	---	Q-31
Benzyl alcohol	2.43	0.100	0.200	ug/L	1	4.00	---	61	31-120%	---	---	
Isophorone	3.29	0.0250	0.0500	ug/L	1	4.00	---	82	42-124%	---	---	
Azobenzene (1,2-DPH)	3.66	0.0250	0.0500	ug/L	1	4.00	---	91	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	3.65	0.250	0.500	ug/L	1	4.00	---	91	63-121%	---	---	
3,3'-Dichlorobenzidine	13.0	0.500	1.00	ug/L	1	8.00	---	163	27-129%	---	---	Q-29, Q-41, E
1,2-Dinitrobenzene	3.21	0.250	0.500	ug/L	1	4.00	---	80	59-120%	---	---	
1,3-Dinitrobenzene	3.12	0.250	0.500	ug/L	1	4.00	---	78	49-128%	---	---	
1,4-Dinitrobenzene	3.14	0.250	0.500	ug/L	1	4.00	---	78	54-120%	---	---	
Pyridine	1.36	0.100	0.200	ug/L	1	4.00	---	34	10-120%	---	---	
1,2-Dichlorobenzene	2.32	0.0250	0.0500	ug/L	1	4.00	---	58	32-120%	---	---	
1,3-Dichlorobenzene	2.27	0.0250	0.0500	ug/L	1	4.00	---	57	28-120%	---	---	
1,4-Dichlorobenzene	2.33	0.0250	0.0500	ug/L	1	4.00	---	58	29-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 88 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>78 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>26 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>86 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>41 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>83 %</i>		<i>43-140 %</i>		<i>"</i>						

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
LCS Dup (22D0716-BSD1)						Prepared: 04/19/22 12:02 Analyzed: 04/19/22 19:54						Q-19
EPA 8270E												
Acenaphthene	2.79	0.0100	0.0200	ug/L	1	4.00	---	70	47-122%	5	30%	
Acenaphthylene	3.09	0.0100	0.0200	ug/L	1	4.00	---	77	41-130%	3	30%	
Anthracene	3.23	0.0100	0.0200	ug/L	1	4.00	---	81	57-123%	0.4	30%	
Benz(a)anthracene	3.44	0.0100	0.0200	ug/L	1	4.00	---	86	58-125%	5	30%	
Benzo(a)pyrene	3.70	0.0150	0.0300	ug/L	1	4.00	---	92	54-128%	2	30%	
Benzo(b)fluoranthene	3.38	0.0150	0.0300	ug/L	1	4.00	---	84	53-131%	0.9	30%	
Benzo(k)fluoranthene	3.31	0.0150	0.0300	ug/L	1	4.00	---	83	57-129%	0.1	30%	
Benzo(g,h,i)perylene	3.65	0.0100	0.0200	ug/L	1	4.00	---	91	50-134%	0.9	30%	
Chrysene	3.38	0.0100	0.0200	ug/L	1	4.00	---	85	59-123%	4	30%	
Dibenz(a,h)anthracene	3.47	0.0100	0.0200	ug/L	1	4.00	---	87	51-134%	1	30%	
Fluoranthene	3.35	0.0100	0.0200	ug/L	1	4.00	---	84	57-128%	0.2	30%	
Fluorene	2.89	0.0100	0.0200	ug/L	1	4.00	---	72	52-124%	2	30%	
Indeno(1,2,3-cd)pyrene	3.43	0.0100	0.0200	ug/L	1	4.00	---	86	52-134%	3	30%	
1-Methylnaphthalene	2.56	0.0200	0.0400	ug/L	1	4.00	---	64	41-120%	5	30%	
2-Methylnaphthalene	2.54	0.0200	0.0400	ug/L	1	4.00	---	64	40-121%	5	30%	
Naphthalene	2.53	0.0200	0.0400	ug/L	1	4.00	---	63	40-121%	5	30%	
Phenanthrene	3.06	0.0100	0.0200	ug/L	1	4.00	---	76	59-120%	1	30%	
Pyrene	3.33	0.0100	0.0200	ug/L	1	4.00	---	83	57-126%	1	30%	
Carbazole	3.23	0.0150	0.0300	ug/L	1	4.00	---	81	60-122%	9	30%	
Dibenzofuran	2.76	0.0100	0.0200	ug/L	1	4.00	---	69	53-120%	3	30%	
2-Chlorophenol	2.40	0.0500	0.100	ug/L	1	4.00	---	60	38-120%	10	30%	
4-Chloro-3-methylphenol	2.97	0.100	0.200	ug/L	1	4.00	---	74	52-120%	4	30%	
2,4-Dichlorophenol	2.62	0.0500	0.100	ug/L	1	4.00	---	65	47-121%	7	30%	
2,4-Dimethylphenol	2.40	0.0500	0.100	ug/L	1	4.00	---	60	31-124%	4	30%	
2,4-Dinitrophenol	3.15	0.250	0.500	ug/L	1	4.00	---	79	23-143%	6	30%	
4,6-Dinitro-2-methylphenol	3.20	0.250	0.500	ug/L	1	4.00	---	80	44-137%	0.7	30%	
2-Methylphenol	2.16	0.0250	0.0500	ug/L	1	4.00	---	54	30-120%	7	30%	
3+4-Methylphenol(s)	1.94	0.0250	0.0500	ug/L	1	4.00	---	48	29-120%	8	30%	
2-Nitrophenol	2.53	0.100	0.200	ug/L	1	4.00	---	63	47-123%	7	30%	
4-Nitrophenol	1.12	0.100	0.200	ug/L	1	4.00	---	28	10-120%	6	30%	
Pentachlorophenol (PCP)	3.03	0.100	0.200	ug/L	1	4.00	---	76	35-138%	2	30%	
Phenol	1.06	0.200	0.400	ug/L	1	4.00	---	26	10-120%	9	30%	
2,3,4,6-Tetrachlorophenol	2.98	0.0500	0.100	ug/L	1	4.00	---	75	50-128%	0.7	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
LCS Dup (22D0716-BSD1)						Prepared: 04/19/22 12:02 Analyzed: 04/19/22 19:54						Q-19
2,3,5,6-Tetrachlorophenol	2.92	0.0500	0.100	ug/L	1	4.00	---	73	50-121%	0.2	30%	
2,4,5-Trichlorophenol	2.83	0.0500	0.100	ug/L	1	4.00	---	71	53-123%	0.3	30%	
2,4,6-Trichlorophenol	2.87	0.0500	0.100	ug/L	1	4.00	---	72	50-125%	4	30%	
Bis(2-ethylhexyl)phthalate	3.57	0.200	0.400	ug/L	1	4.00	---	89	55-135%	0.2	30%	
Butyl benzyl phthalate	3.77	0.200	0.400	ug/L	1	4.00	---	94	53-134%	4	30%	
Diethylphthalate	3.38	0.200	0.400	ug/L	1	4.00	---	84	56-125%	2	30%	
Dimethylphthalate	3.11	0.200	0.400	ug/L	1	4.00	---	78	45-127%	1	30%	
Di-n-butylphthalate	3.70	0.200	0.400	ug/L	1	4.00	---	93	59-127%	0.6	30%	
Di-n-octyl phthalate	3.74	0.200	0.400	ug/L	1	4.00	---	93	51-140%	0.4	30%	
N-Nitrosodimethylamine	1.67	0.0250	0.0500	ug/L	1	4.00	---	42	19-120%	8	30%	
N-Nitroso-di-n-propylamine	3.04	0.0250	0.0500	ug/L	1	4.00	---	76	49-120%	8	30%	
N-Nitrosodiphenylamine	3.26	0.0250	0.0500	ug/L	1	4.00	---	81	51-123%	0.06	30%	
Bis(2-Chloroethoxy) methane	2.79	0.0250	0.0500	ug/L	1	4.00	---	70	48-120%	8	30%	
Bis(2-Chloroethyl) ether	2.59	0.0250	0.0500	ug/L	1	4.00	---	65	43-120%	11	30%	
2,2'-Oxybis(1-Chloropropane)	3.08	0.0250	0.0500	ug/L	1	4.00	---	77	41-120%	8	30%	Q-41
Hexachlorobenzene	2.97	0.0100	0.0200	ug/L	1	4.00	---	74	53-125%	0.4	30%	
Hexachlorobutadiene	2.26	0.0250	0.0500	ug/L	1	4.00	---	56	22-124%	0.7	30%	
Hexachlorocyclopentadiene	2.38	0.0500	0.100	ug/L	1	4.00	---	60	10-127%	4	30%	
Hexachloroethane	2.37	0.0250	0.0500	ug/L	1	4.00	---	59	21-120%	2	30%	
2-Chloronaphthalene	2.68	0.0100	0.0200	ug/L	1	4.00	---	67	40-120%	4	30%	
1,2,4-Trichlorobenzene	2.42	0.0250	0.0500	ug/L	1	4.00	---	61	29-120%	3	30%	
4-Bromophenyl phenyl ether	3.06	0.0250	0.0500	ug/L	1	4.00	---	77	55-124%	0.4	30%	
4-Chlorophenyl phenyl ether	2.78	0.0250	0.0500	ug/L	1	4.00	---	69	53-121%	1	30%	
Aniline	1.86	0.0500	0.100	ug/L	1	4.00	---	47	10-120%	19	30%	
4-Chloroaniline	2.23	0.0250	0.0500	ug/L	1	4.00	---	56	33-120%	13	30%	
2-Nitroaniline	3.23	0.200	0.400	ug/L	1	4.00	---	81	55-127%	5	30%	
3-Nitroaniline	3.19	0.200	0.400	ug/L	1	4.00	---	80	41-128%	12	30%	
4-Nitroaniline	2.82	0.200	0.400	ug/L	1	4.00	---	70	25-120%	18	30%	
Nitrobenzene	2.87	0.100	0.200	ug/L	1	4.00	---	72	45-121%	9	30%	
2,4-Dinitrotoluene	3.31	0.100	0.200	ug/L	1	4.00	---	83	57-128%	1	30%	
2,6-Dinitrotoluene	3.20	0.100	0.200	ug/L	1	4.00	---	80	57-124%	0.5	30%	
Benzoic acid	2.01	1.25	1.25	ug/L	1	8.00	---	25	10-120%	17	30%	Q-31
Benzyl alcohol	2.25	0.100	0.200	ug/L	1	4.00	---	56	31-120%	8	30%	
Isophorone	3.07	0.0250	0.0500	ug/L	1	4.00	---	77	42-124%	7	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0716 - EPA 3510C (Acid/Base Neutral)						Water						
LCS Dup (22D0716-BSD1)						Prepared: 04/19/22 12:02 Analyzed: 04/19/22 19:54						Q-19
Azobenzene (1,2-DPH)	3.56	0.0250	0.0500	ug/L	1	4.00	---	89	61-120%	3	30%	
Bis(2-Ethylhexyl) adipate	3.73	0.250	0.500	ug/L	1	4.00	---	93	63-121%	2	30%	
3,3'-Dichlorobenzidine	12.0	0.500	1.00	ug/L	1	8.00	---	150	27-129%	8	30%	Q-29, Q-41, E
1,2-Dinitrobenzene	3.24	0.250	0.500	ug/L	1	4.00	---	81	59-120%	0.8	30%	
1,3-Dinitrobenzene	3.13	0.250	0.500	ug/L	1	4.00	---	78	49-128%	0.3	30%	
1,4-Dinitrobenzene	3.15	0.250	0.500	ug/L	1	4.00	---	79	54-120%	0.4	30%	
Pyridine	1.29	0.100	0.200	ug/L	1	4.00	---	32	10-120%	6	30%	
1,2-Dichlorobenzene	2.27	0.0250	0.0500	ug/L	1	4.00	---	57	32-120%	2	30%	
1,3-Dichlorobenzene	2.24	0.0250	0.0500	ug/L	1	4.00	---	56	28-120%	1	30%	
1,4-Dichlorobenzene	2.26	0.0250	0.0500	ug/L	1	4.00	---	57	29-120%	3	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 78 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>71 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>23 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>85 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>36 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>81 %</i>		<i>43-140 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Blank (22D0861-BLK2)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 12:54									
<u>EPA 8270E</u>												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Blank (22D0861-BLK2)						Prepared: 04/22/22 06:56 Analyzed: 04/22/22 12:54						
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Benzoic acid	ND	157	312	ug/kg wet	1	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Blank (22D0861-BLK2)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 12:54									
Azobenzene (1,2-DPH)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 85 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>77 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>75 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>76 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>67 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>84 %</i>		<i>39-132 %</i>		<i>"</i>						

LCS (22D0861-BS2)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 13:28									
EPA 8270E												
Acenaphthene	509	5.32	10.7	ug/kg wet	4	533	---	96	40-123%	---	---	
Acenaphthylene	538	5.32	10.7	ug/kg wet	4	533	---	101	32-132%	---	---	
Anthracene	518	5.32	10.7	ug/kg wet	4	533	---	97	47-123%	---	---	
Benz(a)anthracene	509	5.32	10.7	ug/kg wet	4	533	---	96	49-126%	---	---	
Benzo(a)pyrene	607	8.00	16.0	ug/kg wet	4	533	---	114	45-129%	---	---	
Benzo(b)fluoranthene	570	8.00	16.0	ug/kg wet	4	533	---	107	45-132%	---	---	
Benzo(k)fluoranthene	572	8.00	16.0	ug/kg wet	4	533	---	107	47-132%	---	---	
Benzo(g,h,i)perylene	538	5.32	10.7	ug/kg wet	4	533	---	101	43-134%	---	---	
Chrysene	500	5.32	10.7	ug/kg wet	4	533	---	94	50-124%	---	---	
Dibenz(a,h)anthracene	526	5.32	10.7	ug/kg wet	4	533	---	99	45-134%	---	---	
Fluoranthene	535	5.32	10.7	ug/kg wet	4	533	---	100	50-127%	---	---	
Fluorene	516	5.32	10.7	ug/kg wet	4	533	---	97	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	496	5.32	10.7	ug/kg wet	4	533	---	93	45-133%	---	---	
1-Methylnaphthalene	509	10.7	21.3	ug/kg wet	4	533	---	96	40-120%	---	---	
2-Methylnaphthalene	519	10.7	21.3	ug/kg wet	4	533	---	97	38-122%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
LCS (22D0861-BS2)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 13:28									
Naphthalene	498	10.7	21.3	ug/kg wet	4	533	---	93	35-123%	---	---	
Phenanthrene	488	5.32	10.7	ug/kg wet	4	533	---	91	50-121%	---	---	
Pyrene	528	5.32	10.7	ug/kg wet	4	533	---	99	47-127%	---	---	
Carbazole	570	8.00	16.0	ug/kg wet	4	533	---	107	50-123%	---	---	
Dibenzofuran	536	5.32	10.7	ug/kg wet	4	533	---	101	44-120%	---	---	
2-Chlorophenol	521	26.7	53.2	ug/kg wet	4	533	---	98	34-121%	---	---	
4-Chloro-3-methylphenol	499	53.2	107	ug/kg wet	4	533	---	93	45-122%	---	---	
2,4-Dichlorophenol	562	26.7	53.2	ug/kg wet	4	533	---	105	40-122%	---	---	
2,4-Dimethylphenol	541	26.7	53.2	ug/kg wet	4	533	---	101	30-127%	---	---	
2,4-Dinitrophenol	448	133	267	ug/kg wet	4	533	---	84	10-137%	---	---	
4,6-Dinitro-2-methylphenol	535	133	267	ug/kg wet	4	533	---	100	29-132%	---	---	
2-Methylphenol	527	13.3	26.7	ug/kg wet	4	533	---	99	32-122%	---	---	
3+4-Methylphenol(s)	540	13.3	26.7	ug/kg wet	4	533	---	101	34-120%	---	---	Q-41
2-Nitrophenol	610	53.2	107	ug/kg wet	4	533	---	114	36-123%	---	---	
4-Nitrophenol	446	53.2	107	ug/kg wet	4	533	---	84	30-132%	---	---	
Pentachlorophenol (PCP)	399	53.2	107	ug/kg wet	4	533	---	75	25-133%	---	---	
Phenol	522	10.7	21.3	ug/kg wet	4	533	---	98	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	522	26.7	53.2	ug/kg wet	4	533	---	98	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	537	26.7	53.2	ug/kg wet	4	533	---	101	40-120%	---	---	
2,4,5-Trichlorophenol	569	26.7	53.2	ug/kg wet	4	533	---	107	41-124%	---	---	
Nitrobenzene	509	53.2	107	ug/kg wet	4	533	---	95	34-122%	---	---	
2,4,6-Trichlorophenol	504	26.7	53.2	ug/kg wet	4	533	---	95	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	462	80.0	160	ug/kg wet	4	533	---	87	51-133%	---	---	
Butyl benzyl phthalate	454	53.2	107	ug/kg wet	4	533	---	85	48-132%	---	---	
Diethylphthalate	497	53.2	107	ug/kg wet	4	533	---	93	50-124%	---	---	
Dimethylphthalate	511	53.2	107	ug/kg wet	4	533	---	96	48-124%	---	---	
Di-n-butylphthalate	491	53.2	107	ug/kg wet	4	533	---	92	51-128%	---	---	
Di-n-octyl phthalate	487	53.2	107	ug/kg wet	4	533	---	91	45-140%	---	---	
N-Nitrosodimethylamine	363	13.3	26.7	ug/kg wet	4	533	---	68	23-120%	---	---	
N-Nitroso-di-n-propylamine	480	13.3	26.7	ug/kg wet	4	533	---	90	36-120%	---	---	
N-Nitrosodiphenylamine	517	13.3	26.7	ug/kg wet	4	533	---	97	38-127%	---	---	
Bis(2-Chloroethoxy) methane	519	13.3	26.7	ug/kg wet	4	533	---	97	36-121%	---	---	
Bis(2-Chloroethyl) ether	417	13.3	26.7	ug/kg wet	4	533	---	78	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	433	13.3	26.7	ug/kg wet	4	533	---	81	39-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
LCS (22D0861-BS2)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 13:28									
Hexachlorobenzene	518	5.32	10.7	ug/kg wet	4	533	---	97	45-122%	---	---	
Hexachlorobutadiene	526	13.3	26.7	ug/kg wet	4	533	---	99	32-123%	---	---	
Hexachlorocyclopentadiene	507	26.7	53.2	ug/kg wet	4	533	---	95	10-140%	---	---	
Hexachloroethane	473	13.3	26.7	ug/kg wet	4	533	---	89	28-120%	---	---	
2-Chloronaphthalene	528	5.32	10.7	ug/kg wet	4	533	---	99	41-120%	---	---	
1,2,4-Trichlorobenzene	529	13.3	26.7	ug/kg wet	4	533	---	99	34-120%	---	---	
4-Bromophenyl phenyl ether	552	13.3	26.7	ug/kg wet	4	533	---	104	46-124%	---	---	
4-Chlorophenyl phenyl ether	552	13.3	26.7	ug/kg wet	4	533	---	103	45-121%	---	---	
Aniline	242	26.7	53.2	ug/kg wet	4	533	---	45	10-120%	---	---	Q-31
4-Chloroaniline	362	13.3	26.7	ug/kg wet	4	533	---	68	17-120%	---	---	Q-31
2-Nitroaniline	549	107	213	ug/kg wet	4	533	---	103	44-127%	---	---	
3-Nitroaniline	428	107	213	ug/kg wet	4	533	---	80	33-120%	---	---	Q-31
4-Nitroaniline	555	107	213	ug/kg wet	4	533	---	104	51-125%	---	---	
2,4-Dinitrotoluene	503	53.2	107	ug/kg wet	4	533	---	94	48-126%	---	---	
2,6-Dinitrotoluene	532	53.2	107	ug/kg wet	4	533	---	100	46-124%	---	---	
Benzoic acid	811	668	668	ug/kg wet	4	1070	---	76	10-140%	---	---	
Benzyl alcohol	523	26.7	53.2	ug/kg wet	4	533	---	98	29-122%	---	---	
Isophorone	443	13.3	26.7	ug/kg wet	4	533	---	83	30-122%	---	---	
Azobenzene (1,2-DPH)	437	13.3	26.7	ug/kg wet	4	533	---	82	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	439	133	267	ug/kg wet	4	533	---	82	61-121%	---	---	
3,3'-Dichlorobenzidine	1640	107	213	ug/kg wet	4	1070	---	153	22-121%	---	---	Q-29
1,2-Dinitrobenzene	512	133	267	ug/kg wet	4	533	---	96	44-120%	---	---	
1,3-Dinitrobenzene	554	133	267	ug/kg wet	4	533	---	104	43-127%	---	---	
1,4-Dinitrobenzene	558	133	267	ug/kg wet	4	533	---	105	37-132%	---	---	
Pyridine	169	26.7	53.2	ug/kg wet	4	533	---	32	10-120%	---	---	
1,2-Dichlorobenzene	483	13.3	26.7	ug/kg wet	4	533	---	90	33-120%	---	---	
1,3-Dichlorobenzene	469	13.3	26.7	ug/kg wet	4	533	---	88	30-120%	---	---	
1,4-Dichlorobenzene	474	13.3	26.7	ug/kg wet	4	533	---	89	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 100 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>102 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>102 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>98 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>83 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>105 %</i>		<i>39-132 %</i>		<i>"</i>						

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Philip Nerenberg

Philip Nerenberg, Lab Director



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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546							Soil					
Duplicate (22D0861-DUP3)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:14									
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
EPA 8270E												
Acenaphthene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Anthracene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	2.37	4.73	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	2.37	4.73	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	2.37	4.73	ug/kg dry	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Chrysene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Fluoranthene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Fluorene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	3.16	6.31	ug/kg dry	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	3.16	6.31	ug/kg dry	1	---	ND	---	---	---	30%	
Naphthalene	ND	3.16	6.31	ug/kg dry	1	---	ND	---	---	---	30%	
Phenanthrene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Pyrene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Carbazole	ND	2.37	4.73	ug/kg dry	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
2-Chlorophenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	39.4	78.9	ug/kg dry	1	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	39.4	78.9	ug/kg dry	1	---	ND	---	---	---	30%	
2-Methylphenol	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
2-Nitrophenol	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
4-Nitrophenol	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Duplicate (22D0861-DUP3)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:14									
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
Phenol	ND	3.16	6.31	ug/kg dry	1	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
Nitrobenzene	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	23.7	47.3	ug/kg dry	1	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
Diethylphthalate	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
Dimethylphthalate	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
Hexachloroethane	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	1.57	3.16	ug/kg dry	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Aniline	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
4-Chloroaniline	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
2-Nitroaniline	ND	31.6	63.1	ug/kg dry	1	---	ND	---	---	---	30%	
3-Nitroaniline	ND	31.6	63.1	ug/kg dry	1	---	ND	---	---	---	30%	
4-Nitroaniline	ND	31.6	63.1	ug/kg dry	1	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	15.7	31.6	ug/kg dry	1	---	ND	---	---	---	30%	

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Duplicate (22D0861-DUP3)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:14									
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
Benzoic acid	ND	198	394	ug/kg dry	1	---	ND	---	---	---	30%	
Benzyl alcohol	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
Isophorone	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	39.4	78.9	ug/kg dry	1	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	31.6	63.1	ug/kg dry	1	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	39.4	78.9	ug/kg dry	1	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	39.4	78.9	ug/kg dry	1	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	39.4	78.9	ug/kg dry	1	---	ND	---	---	---	30%	
Pyridine	ND	7.89	15.7	ug/kg dry	1	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	3.94	7.89	ug/kg dry	1	---	ND	---	---	---	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 89 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>88 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>81 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>85 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>72 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>106 %</i>		<i>39-132 %</i>		<i>"</i>						

Matrix Spike (22D0861-MS3)			Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:48									
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
EPA 8270E												
Acenaphthene	589	6.21	12.5	ug/kg dry	4	623	ND	95	40-123%	---	---	
Acenaphthylene	631	6.21	12.5	ug/kg dry	4	623	ND	101	32-132%	---	---	
Anthracene	614	6.21	12.5	ug/kg dry	4	623	ND	99	47-123%	---	---	
Benz(a)anthracene	609	6.21	12.5	ug/kg dry	4	623	ND	98	49-126%	---	---	
Benzo(a)pyrene	724	9.34	18.7	ug/kg dry	4	623	ND	116	45-129%	---	---	
Benzo(b)fluoranthene	684	9.34	18.7	ug/kg dry	4	623	ND	110	45-132%	---	---	
Benzo(k)fluoranthene	683	9.34	18.7	ug/kg dry	4	623	ND	110	47-132%	---	---	
Benzo(g,h,i)perylene	642	6.21	12.5	ug/kg dry	4	623	ND	103	43-134%	---	---	
Chrysene	601	6.21	12.5	ug/kg dry	4	623	ND	96	50-124%	---	---	
Dibenz(a,h)anthracene	629	6.21	12.5	ug/kg dry	4	623	ND	101	45-134%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Matrix Spike (22D0861-MS3)						Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:48						
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
Fluoranthene	640	6.21	12.5	ug/kg dry	4	623	ND	103	50-127%	---	---	
Fluorene	608	6.21	12.5	ug/kg dry	4	623	ND	98	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	584	6.21	12.5	ug/kg dry	4	623	ND	94	45-133%	---	---	
1-Methylnaphthalene	600	12.5	24.9	ug/kg dry	4	623	ND	96	40-120%	---	---	
2-Methylnaphthalene	607	12.5	24.9	ug/kg dry	4	623	ND	97	38-122%	---	---	
Naphthalene	584	12.5	24.9	ug/kg dry	4	623	ND	94	35-123%	---	---	
Phenanthrene	580	6.21	12.5	ug/kg dry	4	623	ND	93	50-121%	---	---	
Pyrene	626	6.21	12.5	ug/kg dry	4	623	ND	101	47-127%	---	---	
Carbazole	712	9.34	18.7	ug/kg dry	4	623	ND	114	50-123%	---	---	
Dibenzofuran	618	6.21	12.5	ug/kg dry	4	623	ND	99	44-120%	---	---	
2-Chlorophenol	604	31.2	62.1	ug/kg dry	4	623	ND	97	34-121%	---	---	
4-Chloro-3-methylphenol	600	62.1	125	ug/kg dry	4	623	ND	96	45-122%	---	---	
2,4-Dichlorophenol	669	31.2	62.1	ug/kg dry	4	623	ND	107	40-122%	---	---	
2,4-Dimethylphenol	673	31.2	62.1	ug/kg dry	4	623	ND	108	30-127%	---	---	
2,4-Dinitrophenol	194	156	312	ug/kg dry	4	623	ND	31	10-137%	---	---	J
4,6-Dinitro-2-methylphenol	445	156	312	ug/kg dry	4	623	ND	71	29-132%	---	---	
2-Methylphenol	618	15.6	31.2	ug/kg dry	4	623	ND	99	32-122%	---	---	
3+4-Methylphenol(s)	630	15.6	31.2	ug/kg dry	4	623	ND	101	34-120%	---	---	
2-Nitrophenol	618	62.1	125	ug/kg dry	4	623	ND	99	36-123%	---	---	
4-Nitrophenol	516	62.1	125	ug/kg dry	4	623	ND	83	30-132%	---	---	
Pentachlorophenol (PCP)	404	62.1	125	ug/kg dry	4	623	ND	65	25-133%	---	---	
Phenol	603	12.5	24.9	ug/kg dry	4	623	ND	97	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	599	31.2	62.1	ug/kg dry	4	623	ND	96	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	595	31.2	62.1	ug/kg dry	4	623	ND	96	40-120%	---	---	
2,4,5-Trichlorophenol	662	31.2	62.1	ug/kg dry	4	623	ND	106	41-124%	---	---	
Nitrobenzene	595	62.1	125	ug/kg dry	4	623	ND	95	34-122%	---	---	
2,4,6-Trichlorophenol	602	31.2	62.1	ug/kg dry	4	623	ND	97	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	575	93.4	187	ug/kg dry	4	623	ND	92	51-133%	---	---	
Butyl benzyl phthalate	581	62.1	125	ug/kg dry	4	623	ND	93	48-132%	---	---	
Diethylphthalate	595	62.1	125	ug/kg dry	4	623	ND	96	50-124%	---	---	
Dimethylphthalate	595	62.1	125	ug/kg dry	4	623	ND	95	48-124%	---	---	
Di-n-butylphthalate	603	62.1	125	ug/kg dry	4	623	ND	97	51-128%	---	---	
Di-n-octyl phthalate	624	62.1	125	ug/kg dry	4	623	ND	100	45-140%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Matrix Spike (22D0861-MS3)						Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:48						
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
N-Nitrosodimethylamine	454	15.6	31.2	ug/kg dry	4	623	ND	73	23-120%	---	---	
N-Nitroso-di-n-propylamine	543	15.6	31.2	ug/kg dry	4	623	ND	87	36-120%	---	---	
N-Nitrosodiphenylamine	612	15.6	31.2	ug/kg dry	4	623	ND	98	38-127%	---	---	
Bis(2-Chloroethoxy) methane	611	15.6	31.2	ug/kg dry	4	623	ND	98	36-121%	---	---	
Bis(2-Chloroethyl) ether	479	15.6	31.2	ug/kg dry	4	623	ND	77	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	479	15.6	31.2	ug/kg dry	4	623	ND	77	39-120%	---	---	
Hexachlorobenzene	615	6.21	12.5	ug/kg dry	4	623	ND	99	45-122%	---	---	
Hexachlorobutadiene	604	15.6	31.2	ug/kg dry	4	623	ND	97	32-123%	---	---	
Hexachlorocyclopentadiene	532	31.2	62.1	ug/kg dry	4	623	ND	85	10-140%	---	---	
Hexachloroethane	555	15.6	31.2	ug/kg dry	4	623	ND	89	28-120%	---	---	
2-Chloronaphthalene	622	6.21	12.5	ug/kg dry	4	623	ND	100	41-120%	---	---	
1,2,4-Trichlorobenzene	611	15.6	31.2	ug/kg dry	4	623	ND	98	34-120%	---	---	
4-Bromophenyl phenyl ether	652	15.6	31.2	ug/kg dry	4	623	ND	105	46-124%	---	---	
4-Chlorophenyl phenyl ether	641	15.6	31.2	ug/kg dry	4	623	ND	103	45-121%	---	---	
Aniline	307	31.2	62.1	ug/kg dry	4	623	ND	49	10-120%	---	---	
4-Chloroaniline	353	15.6	31.2	ug/kg dry	4	623	ND	57	17-120%	---	---	
2-Nitroaniline	647	125	249	ug/kg dry	4	623	ND	104	44-127%	---	---	
3-Nitroaniline	512	125	249	ug/kg dry	4	623	ND	82	33-120%	---	---	
4-Nitroaniline	696	125	249	ug/kg dry	4	623	ND	112	51-125%	---	---	
2,4-Dinitrotoluene	600	62.1	125	ug/kg dry	4	623	ND	96	48-126%	---	---	
2,6-Dinitrotoluene	634	62.1	125	ug/kg dry	4	623	ND	102	46-124%	---	---	
Benzoic acid	ND	780	1560	ug/kg dry	4	1250	ND		10-140%	---	---	Q-01
Benzyl alcohol	616	62.1	62.1	ug/kg dry	4	623	ND	99	29-122%	---	---	
Isophorone	529	15.6	31.2	ug/kg dry	4	623	ND	85	30-122%	---	---	
Azobenzene (1,2-DPH)	520	15.6	31.2	ug/kg dry	4	623	ND	83	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	548	156	312	ug/kg dry	4	623	ND	88	61-121%	---	---	
3,3'-Dichlorobenzidine	2840	125	249	ug/kg dry	4	1250	ND	228	22-121%	---	---	Q-01
1,2-Dinitrobenzene	600	156	312	ug/kg dry	4	623	ND	96	44-120%	---	---	
1,3-Dinitrobenzene	615	156	312	ug/kg dry	4	623	ND	99	43-127%	---	---	
1,4-Dinitrobenzene	643	156	312	ug/kg dry	4	623	ND	103	37-132%	---	---	
Pyridine	360	31.2	62.1	ug/kg dry	4	623	ND	58	10-120%	---	---	
1,2-Dichlorobenzene	553	15.6	31.2	ug/kg dry	4	623	ND	89	33-120%	---	---	
1,3-Dichlorobenzene	548	15.6	31.2	ug/kg dry	4	623	ND	88	30-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0861 - EPA 3546						Soil						
Matrix Spike (22D0861-MS3)						Prepared: 04/22/22 06:56 Analyzed: 04/22/22 15:48						
QC Source Sample: SB01-0.5-3 (A2D0663-01RE1)												
1,4-Dichlorobenzene	545	15.6	31.2	ug/kg dry	4	623	ND	87	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 94 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>101 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>98 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>102 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>80 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>106 %</i>		<i>39-132 %</i>		<i>"</i>						

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Blank (22D0935-BLK2)			Prepared: 04/25/22 11:47 Analyzed: 04/25/22 17:34									
<u>EPA 8270E</u>												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Blank (22D0935-BLK2)			Prepared: 04/25/22 11:47 Analyzed: 04/25/22 17:34									
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Benzoic acid	ND	157	312	ug/kg wet	1	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Blank (22D0935-BLK2)			Prepared: 04/25/22 11:47 Analyzed: 04/25/22 17:34									
Azobenzene (1,2-DPH)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 84 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>85 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>72 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>89 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>70 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>92 %</i>		<i>39-132 %</i>		<i>"</i>						

LCS (22D0935-BS2)			Prepared: 04/25/22 11:47 Analyzed: 04/25/22 18:08									
EPA 8270E												
Acenaphthene	515	5.32	10.7	ug/kg wet	4	533	---	97	40-123%	---	---	
Acenaphthylene	554	5.32	10.7	ug/kg wet	4	533	---	104	32-132%	---	---	
Anthracene	533	5.32	10.7	ug/kg wet	4	533	---	100	47-123%	---	---	
Benz(a)anthracene	528	5.32	10.7	ug/kg wet	4	533	---	99	49-126%	---	---	
Benzo(a)pyrene	620	8.00	16.0	ug/kg wet	4	533	---	116	45-129%	---	---	
Benzo(b)fluoranthene	581	8.00	16.0	ug/kg wet	4	533	---	109	45-132%	---	---	
Benzo(k)fluoranthene	586	8.00	16.0	ug/kg wet	4	533	---	110	47-132%	---	---	
Benzo(g,h,i)perylene	561	5.32	10.7	ug/kg wet	4	533	---	105	43-134%	---	---	
Chrysene	525	5.32	10.7	ug/kg wet	4	533	---	98	50-124%	---	---	
Dibenz(a,h)anthracene	548	5.32	10.7	ug/kg wet	4	533	---	103	45-134%	---	---	
Fluoranthene	540	5.32	10.7	ug/kg wet	4	533	---	101	50-127%	---	---	
Fluorene	514	5.32	10.7	ug/kg wet	4	533	---	96	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	514	5.32	10.7	ug/kg wet	4	533	---	96	45-133%	---	---	
1-Methylnaphthalene	537	10.7	21.3	ug/kg wet	4	533	---	101	40-120%	---	---	
2-Methylnaphthalene	537	10.7	21.3	ug/kg wet	4	533	---	101	38-122%	---	---	

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Philip Nerenberg, Lab Director



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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
LCS (22D0935-BS2)			Prepared: 04/25/22 11:47 Analyzed: 04/25/22 18:08									
Naphthalene	522	10.7	21.3	ug/kg wet	4	533	---	98	35-123%	---	---	
Phenanthrene	507	5.32	10.7	ug/kg wet	4	533	---	95	50-121%	---	---	
Pyrene	530	5.32	10.7	ug/kg wet	4	533	---	99	47-127%	---	---	
Carbazole	549	8.00	16.0	ug/kg wet	4	533	---	103	50-123%	---	---	
Dibenzofuran	528	5.32	10.7	ug/kg wet	4	533	---	99	44-120%	---	---	
2-Chlorophenol	532	26.7	53.2	ug/kg wet	4	533	---	100	34-121%	---	---	
4-Chloro-3-methylphenol	477	53.2	107	ug/kg wet	4	533	---	89	45-122%	---	---	
2,4-Dichlorophenol	528	26.7	53.2	ug/kg wet	4	533	---	99	40-122%	---	---	
2,4-Dimethylphenol	553	26.7	53.2	ug/kg wet	4	533	---	104	30-127%	---	---	
2,4-Dinitrophenol	482	133	267	ug/kg wet	4	533	---	90	10-137%	---	---	
4,6-Dinitro-2-methylphenol	512	133	267	ug/kg wet	4	533	---	96	29-132%	---	---	
2-Methylphenol	497	13.3	26.7	ug/kg wet	4	533	---	93	32-122%	---	---	
3+4-Methylphenol(s)	502	13.3	26.7	ug/kg wet	4	533	---	94	34-120%	---	---	
2-Nitrophenol	514	53.2	107	ug/kg wet	4	533	---	96	36-123%	---	---	
4-Nitrophenol	399	53.2	107	ug/kg wet	4	533	---	75	30-132%	---	---	
Pentachlorophenol (PCP)	320	53.2	107	ug/kg wet	4	533	---	60	25-133%	---	---	
Phenol	505	10.7	21.3	ug/kg wet	4	533	---	95	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	471	26.7	53.2	ug/kg wet	4	533	---	88	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	482	26.7	53.2	ug/kg wet	4	533	---	90	40-120%	---	---	
2,4,5-Trichlorophenol	509	26.7	53.2	ug/kg wet	4	533	---	95	41-124%	---	---	
Nitrobenzene	495	53.2	107	ug/kg wet	4	533	---	93	34-122%	---	---	
2,4,6-Trichlorophenol	469	26.7	53.2	ug/kg wet	4	533	---	88	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	472	80.0	160	ug/kg wet	4	533	---	88	51-133%	---	---	
Butyl benzyl phthalate	469	53.2	107	ug/kg wet	4	533	---	88	48-132%	---	---	
Diethylphthalate	492	53.2	107	ug/kg wet	4	533	---	92	50-124%	---	---	
Dimethylphthalate	497	53.2	107	ug/kg wet	4	533	---	93	48-124%	---	---	
Di-n-butylphthalate	497	53.2	107	ug/kg wet	4	533	---	93	51-128%	---	---	
Di-n-octyl phthalate	488	53.2	107	ug/kg wet	4	533	---	92	45-140%	---	---	
N-Nitrosodimethylamine	399	13.3	26.7	ug/kg wet	4	533	---	75	23-120%	---	---	
N-Nitroso-di-n-propylamine	467	13.3	26.7	ug/kg wet	4	533	---	88	36-120%	---	---	
N-Nitrosodiphenylamine	521	13.3	26.7	ug/kg wet	4	533	---	98	38-127%	---	---	
Bis(2-Chloroethoxy) methane	526	13.3	26.7	ug/kg wet	4	533	---	99	36-121%	---	---	
Bis(2-Chloroethyl) ether	461	13.3	26.7	ug/kg wet	4	533	---	86	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	435	13.3	26.7	ug/kg wet	4	533	---	82	39-120%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
LCS (22D0935-BS2)			Prepared: 04/25/22 11:47 Analyzed: 04/25/22 18:08									
Hexachlorobenzene	543	5.32	10.7	ug/kg wet	4	533	---	102	45-122%	---	---	
Hexachlorobutadiene	552	13.3	26.7	ug/kg wet	4	533	---	103	32-123%	---	---	
Hexachlorocyclopentadiene	469	26.7	53.2	ug/kg wet	4	533	---	88	10-140%	---	---	
Hexachloroethane	497	13.3	26.7	ug/kg wet	4	533	---	93	28-120%	---	---	
2-Chloronaphthalene	535	5.32	10.7	ug/kg wet	4	533	---	100	41-120%	---	---	
1,2,4-Trichlorobenzene	550	13.3	26.7	ug/kg wet	4	533	---	103	34-120%	---	---	
4-Bromophenyl phenyl ether	542	13.3	26.7	ug/kg wet	4	533	---	102	46-124%	---	---	
4-Chlorophenyl phenyl ether	531	13.3	26.7	ug/kg wet	4	533	---	100	45-121%	---	---	
Aniline	281	26.7	53.2	ug/kg wet	4	533	---	53	10-120%	---	---	Q-31
4-Chloroaniline	314	13.3	26.7	ug/kg wet	4	533	---	59	17-120%	---	---	Q-31
2-Nitroaniline	517	107	213	ug/kg wet	4	533	---	97	44-127%	---	---	
3-Nitroaniline	389	107	213	ug/kg wet	4	533	---	73	33-120%	---	---	
4-Nitroaniline	545	107	213	ug/kg wet	4	533	---	102	51-125%	---	---	
2,4-Dinitrotoluene	491	53.2	107	ug/kg wet	4	533	---	92	48-126%	---	---	
2,6-Dinitrotoluene	524	53.2	107	ug/kg wet	4	533	---	98	46-124%	---	---	
Benzoic acid	897	668	668	ug/kg wet	4	1070	---	84	10-140%	---	---	
Benzyl alcohol	486	26.7	53.2	ug/kg wet	4	533	---	91	29-122%	---	---	
Isophorone	465	13.3	26.7	ug/kg wet	4	533	---	87	30-122%	---	---	
Azobenzene (1,2-DPH)	449	13.3	26.7	ug/kg wet	4	533	---	84	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	450	133	267	ug/kg wet	4	533	---	84	61-121%	---	---	
3,3'-Dichlorobenzidine	1770	107	213	ug/kg wet	4	1070	---	166	22-121%	---	---	Q-29
1,2-Dinitrobenzene	502	133	267	ug/kg wet	4	533	---	94	44-120%	---	---	
1,3-Dinitrobenzene	504	133	267	ug/kg wet	4	533	---	95	43-127%	---	---	
1,4-Dinitrobenzene	504	133	267	ug/kg wet	4	533	---	95	37-132%	---	---	
Pyridine	321	26.7	53.2	ug/kg wet	4	533	---	60	10-120%	---	---	
1,2-Dichlorobenzene	486	13.3	26.7	ug/kg wet	4	533	---	91	33-120%	---	---	
1,3-Dichlorobenzene	491	13.3	26.7	ug/kg wet	4	533	---	92	30-120%	---	---	
1,4-Dichlorobenzene	499	13.3	26.7	ug/kg wet	4	533	---	94	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 92 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>102 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>95 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>100 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>84 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>103 %</i>		<i>39-132 %</i>		<i>"</i>						

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Duplicate (22D0935-DUP2)						Prepared: 04/25/22 11:47 Analyzed: 04/25/22 19:52						PRO
QC Source Sample: DU-02 (A2D0663-26RE1)												
EPA 8270E												
Acenaphthene	ND	13.4	26.9	ug/kg dry	10	---	ND	---	---	---	30%	
Acenaphthylene	13.9	13.4	26.9	ug/kg dry	10	---	15.3	---	---	10	30%	J
Anthracene	ND	13.4	26.9	ug/kg dry	10	---	ND	---	---	---	30%	
Benz(a)anthracene	22.5	13.4	26.9	ug/kg dry	10	---	19.4	---	---	15	30%	J
Benzo(a)pyrene	40.1	20.1	40.3	ug/kg dry	10	---	39.0	---	---	3	30%	J
Benzo(b)fluoranthene	36.2	20.1	40.3	ug/kg dry	10	---	30.5	---	---	17	30%	J
Benzo(k)fluoranthene	ND	20.1	40.3	ug/kg dry	10	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	28.4	13.4	26.9	ug/kg dry	10	---	28.2	---	---	0.7	30%	
Chrysene	43.2	13.4	26.9	ug/kg dry	10	---	41.2	---	---	5	30%	
Dibenz(a,h)anthracene	ND	13.4	26.9	ug/kg dry	10	---	ND	---	---	---	30%	
Fluoranthene	81.1	13.4	26.9	ug/kg dry	10	---	78.1	---	---	4	30%	
Fluorene	24.3	13.4	26.9	ug/kg dry	10	---	21.1	---	---	14	30%	J
Indeno(1,2,3-cd)pyrene	18.2	13.4	26.9	ug/kg dry	10	---	19.9	---	---	9	30%	J
1-Methylnaphthalene	ND	26.9	53.7	ug/kg dry	10	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	26.9	53.7	ug/kg dry	10	---	ND	---	---	---	30%	
Naphthalene	80.7	26.9	53.7	ug/kg dry	10	---	90.0	---	---	11	30%	
Phenanthrene	90.2	13.4	26.9	ug/kg dry	10	---	87.7	---	---	3	30%	
Pyrene	89.0	13.4	26.9	ug/kg dry	10	---	82.8	---	---	7	30%	
Carbazole	ND	20.1	40.3	ug/kg dry	10	---	ND	---	---	---	30%	
Dibenzofuran	15.2	13.4	26.9	ug/kg dry	10	---	14.4	---	---	5	30%	J
2-Chlorophenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
2-Methylphenol	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
2-Nitrophenol	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
4-Nitrophenol	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Duplicate (22D0935-DUP2)						Prepared: 04/25/22 11:47 Analyzed: 04/25/22 19:52						PRO
QC Source Sample: DU-02 (A2D0663-26RE1)												
Phenol	ND	26.9	53.7	ug/kg dry	10	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
Nitrobenzene	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	201	403	ug/kg dry	10	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
Diethylphthalate	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
Dimethylphthalate	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	111	111	ug/kg dry	10	---	ND	---	---	---	30%	R-02
Bis(2-Chloroethoxy) methane	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	13.4	26.9	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
Hexachloroethane	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	13.4	26.9	ug/kg dry	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Aniline	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
4-Chloroaniline	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
2-Nitroaniline	ND	269	537	ug/kg dry	10	---	ND	---	---	---	30%	
3-Nitroaniline	ND	269	537	ug/kg dry	10	---	ND	---	---	---	30%	
4-Nitroaniline	ND	269	537	ug/kg dry	10	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	134	269	ug/kg dry	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Duplicate (22D0935-DUP2)						Prepared: 04/25/22 11:47 Analyzed: 04/25/22 19:52						PRO
QC Source Sample: DU-02 (A2D0663-26RE1)												
Benzoic acid	ND	1680	3350	ug/kg dry	10	---	ND	---	---	---	30%	
Benzyl alcohol	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
Isophorone	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	269	537	ug/kg dry	10	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	335	672	ug/kg dry	10	---	ND	---	---	---	30%	
Pyridine	ND	67.2	134	ug/kg dry	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	33.5	67.2	ug/kg dry	10	---	ND	---	---	---	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 57%</i>		<i>Limits: 37-122%</i>		<i>Dilution: 10x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>60%</i>		<i>44-120%</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>31%</i>		<i>33-122%</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>78%</i>		<i>54-127%</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>27%</i>		<i>35-120%</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>45%</i>		<i>39-132%</i>		<i>"</i>						

Matrix Spike (22D0935-MS2)						Prepared: 04/25/22 11:47 Analyzed: 04/27/22 03:44						PRO
QC Source Sample: DU-06 (A2D0663-34RE1)												
EPA 8270E												
Acenaphthene	484	12.9	25.8	ug/kg dry	10	516	152	64	40-123%	---	---	
Acenaphthylene	412	25.8	25.8	ug/kg dry	10	516	ND	80	32-132%	---	---	
Anthracene	477	12.9	25.8	ug/kg dry	10	516	98.6	73	47-123%	---	---	
Benz(a)anthracene	413	12.9	25.8	ug/kg dry	10	516	81.2	64	49-126%	---	---	
Benzo(a)pyrene	405	19.4	38.7	ug/kg dry	10	516	63.2	66	45-129%	---	---	
Benzo(b)fluoranthene	440	19.4	38.7	ug/kg dry	10	516	95.8	67	45-132%	---	---	
Benzo(k)fluoranthene	380	19.4	38.7	ug/kg dry	10	516	32.7	67	47-132%	---	---	
Benzo(g,h,i)perylene	300	12.9	25.8	ug/kg dry	10	516	34.6	51	43-134%	---	---	
Chrysene	446	12.9	25.8	ug/kg dry	10	516	133	61	50-124%	---	---	
Dibenz(a,h)anthracene	252	12.9	25.8	ug/kg dry	10	516	ND	49	45-134%	---	---	

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Matrix Spike (22D0935-MS2)						Prepared: 04/25/22 11:47 Analyzed: 04/27/22 03:44						PRO
QC Source Sample: DU-06 (A2D0663-34RE1)												
Fluoranthene	728	12.9	25.8	ug/kg dry	10	516	446	55	50-127%	---	---	
Fluorene	513	12.9	25.8	ug/kg dry	10	516	146	71	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	243	12.9	25.8	ug/kg dry	10	516	24.3	42	45-133%	---	---	Q-01
1-Methylnaphthalene	409	25.8	51.6	ug/kg dry	10	516	71.9	65	40-120%	---	---	
2-Methylnaphthalene	466	25.8	51.6	ug/kg dry	10	516	155	60	38-122%	---	---	
Naphthalene	687	25.8	51.6	ug/kg dry	10	516	501	36	35-123%	---	---	
Phenanthrene	769	12.9	25.8	ug/kg dry	10	516	512	50	50-121%	---	---	
Pyrene	662	12.9	25.8	ug/kg dry	10	516	354	60	47-127%	---	---	
Carbazole	407	19.4	38.7	ug/kg dry	10	516	28.2	73	50-123%	---	---	
Dibenzofuran	489	12.9	25.8	ug/kg dry	10	516	138	68	44-120%	---	---	
2-Chlorophenol	295	64.5	129	ug/kg dry	10	516	ND	57	34-121%	---	---	
4-Chloro-3-methylphenol	305	129	258	ug/kg dry	10	516	ND	59	45-122%	---	---	
2,4-Dichlorophenol	291	64.5	129	ug/kg dry	10	516	ND	56	40-122%	---	---	
2,4-Dimethylphenol	361	64.5	129	ug/kg dry	10	516	ND	70	30-127%	---	---	
2,4-Dinitrophenol	ND	322	645	ug/kg dry	10	516	ND		10-137%	---	---	Q-11
4,6-Dinitro-2-methylphenol	ND	322	645	ug/kg dry	10	516	ND		29-132%	---	---	Q-11
2-Methylphenol	327	32.2	64.5	ug/kg dry	10	516	ND	63	32-122%	---	---	
3+4-Methylphenol(s)	313	32.2	64.5	ug/kg dry	10	516	ND	61	34-120%	---	---	
2-Nitrophenol	243	129	258	ug/kg dry	10	516	ND	47	36-123%	---	---	J
4-Nitrophenol	131	129	258	ug/kg dry	10	516	ND	25	30-132%	---	---	Q-01, J
Pentachlorophenol (PCP)	ND	129	258	ug/kg dry	10	516	ND		25-133%	---	---	Q-01
Phenol	278	25.8	51.6	ug/kg dry	10	516	ND	54	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	96.6	64.5	129	ug/kg dry	10	516	ND	19	44-125%	---	---	Q-01, J
2,3,5,6-Tetrachlorophenol	69.7	64.5	129	ug/kg dry	10	516	ND	14	40-120%	---	---	Q-01, J
2,4,5-Trichlorophenol	188	64.5	129	ug/kg dry	10	516	ND	36	41-124%	---	---	Q-01
Nitrobenzene	332	129	258	ug/kg dry	10	516	ND	64	34-122%	---	---	
2,4,6-Trichlorophenol	204	64.5	129	ug/kg dry	10	516	ND	40	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	403	194	387	ug/kg dry	10	516	ND	78	51-133%	---	---	
Butyl benzyl phthalate	399	129	258	ug/kg dry	10	516	ND	77	48-132%	---	---	
Diethylphthalate	370	129	258	ug/kg dry	10	516	ND	72	50-124%	---	---	
Dimethylphthalate	354	129	258	ug/kg dry	10	516	ND	69	48-124%	---	---	
Di-n-butylphthalate	385	129	258	ug/kg dry	10	516	ND	75	51-128%	---	---	
Di-n-octyl phthalate	487	129	258	ug/kg dry	10	516	ND	94	45-140%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Matrix Spike (22D0935-MS2)						Prepared: 04/25/22 11:47 Analyzed: 04/27/22 03:44						PRO
QC Source Sample: DU-06 (A2D0663-34RE1)												
N-Nitrosodimethylamine	150	32.2	64.5	ug/kg dry	10	516	ND	29	23-120%	---	---	
N-Nitroso-di-n-propylamine	284	32.2	64.5	ug/kg dry	10	516	ND	55	36-120%	---	---	
N-Nitrosodiphenylamine	412	32.2	64.5	ug/kg dry	10	516	ND	80	38-127%	---	---	
Bis(2-Chloroethoxy) methane	347	32.2	64.5	ug/kg dry	10	516	ND	67	36-121%	---	---	
Bis(2-Chloroethyl) ether	273	32.2	64.5	ug/kg dry	10	516	ND	53	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	280	32.2	64.5	ug/kg dry	10	516	ND	54	39-120%	---	---	
Hexachlorobenzene	408	12.9	25.8	ug/kg dry	10	516	ND	79	45-122%	---	---	
Hexachlorobutadiene	363	32.2	64.5	ug/kg dry	10	516	ND	70	32-123%	---	---	
Hexachlorocyclopentadiene	162	64.5	129	ug/kg dry	10	516	ND	31	10-140%	---	---	
Hexachloroethane	330	32.2	64.5	ug/kg dry	10	516	ND	64	28-120%	---	---	
2-Chloronaphthalene	373	12.9	25.8	ug/kg dry	10	516	ND	72	41-120%	---	---	
1,2,4-Trichlorobenzene	383	32.2	64.5	ug/kg dry	10	516	ND	74	34-120%	---	---	
4-Bromophenyl phenyl ether	436	32.2	64.5	ug/kg dry	10	516	ND	84	46-124%	---	---	
4-Chlorophenyl phenyl ether	411	32.2	64.5	ug/kg dry	10	516	ND	80	45-121%	---	---	
Aniline	ND	64.5	129	ug/kg dry	10	516	ND		10-120%	---	---	Q-01, Q-31
4-Chloroaniline	121	32.2	64.5	ug/kg dry	10	516	ND	24	17-120%	---	---	Q-31
2-Nitroaniline	315	258	516	ug/kg dry	10	516	ND	61	44-127%	---	---	J
3-Nitroaniline	291	258	516	ug/kg dry	10	516	ND	56	33-120%	---	---	J
4-Nitroaniline	335	258	516	ug/kg dry	10	516	ND	65	51-125%	---	---	Q-41, J
2,4-Dinitrotoluene	347	129	258	ug/kg dry	10	516	ND	67	48-126%	---	---	
2,6-Dinitrotoluene	370	129	258	ug/kg dry	10	516	ND	72	46-124%	---	---	
Benzoic acid	ND	1620	3220	ug/kg dry	10	1030	ND		10-140%	---	---	Q-11
Benzyl alcohol	341	64.5	129	ug/kg dry	10	516	ND	66	29-122%	---	---	
Isophorone	271	32.2	64.5	ug/kg dry	10	516	ND	53	30-122%	---	---	
Azobenzene (1,2-DPH)	326	32.2	64.5	ug/kg dry	10	516	ND	63	39-125%	---	---	
Bis(2-Ethylhexyl) adipate	354	322	645	ug/kg dry	10	516	ND	69	61-121%	---	---	J
3,3'-Dichlorobenzidine	279	258	516	ug/kg dry	10	1030	ND	27	22-121%	---	---	J
1,2-Dinitrobenzene	333	322	645	ug/kg dry	10	516	ND	65	44-120%	---	---	J
1,3-Dinitrobenzene	ND	322	645	ug/kg dry	10	516	ND		43-127%	---	---	Q-11
1,4-Dinitrobenzene	374	322	645	ug/kg dry	10	516	ND	72	37-132%	---	---	J
Pyridine	ND	64.5	129	ug/kg dry	10	516	ND		10-120%	---	---	Q-01
1,2-Dichlorobenzene	311	32.2	64.5	ug/kg dry	10	516	ND	60	33-120%	---	---	
1,3-Dichlorobenzene	316	32.2	64.5	ug/kg dry	10	516	ND	61	30-120%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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 503-718-2323
 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0935 - EPA 3546						Soil						
Matrix Spike (22D0935-MS2)						Prepared: 04/25/22 11:47 Analyzed: 04/27/22 03:44					PRO	
QC Source Sample: DU-06 (A2D0663-34RE1)												
1,4-Dichlorobenzene	318	32.2	64.5	ug/kg dry	10	516	ND	62	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 63 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 10x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>53 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>77 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>38 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>51 %</i>		<i>39-132 %</i>		<i>"</i>						

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Blank (22D1068-BLK2)			Prepared: 04/28/22 07:28 Analyzed: 04/28/22 15:17									
<u>EPA 8270E</u>												
Acenaphthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Carbazole	ND	1.87	3.75	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
2-Chlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
2-Methylphenol	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitrophenol	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Phenol	ND	2.50	5.00	ug/kg wet	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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 ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Blank (22D1068-BLK2)			Prepared: 04/28/22 07:28 Analyzed: 04/28/22 15:17									
2,3,5,6-Tetrachlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Nitrobenzene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Diethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Dimethylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2,2'-Oxybis(1-Chloropropane)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Hexachloroethane	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	1.25	2.50	ug/kg wet	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Aniline	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
4-Chloroaniline	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
2-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
3-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
4-Nitroaniline	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	12.5	25.0	ug/kg wet	1	---	---	---	---	---	---	
Benzoic acid	ND	157	312	ug/kg wet	1	---	---	---	---	---	---	
Benzyl alcohol	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
Isophorone	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546												
Soil												
Blank (22D1068-BLK2)												
Prepared: 04/28/22 07:28 Analyzed: 04/28/22 15:17												
Azobenzene (1,2-DPH)	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	25.0	50.0	ug/kg wet	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	31.2	62.5	ug/kg wet	1	---	---	---	---	---	---	
Pyridine	ND	6.25	12.5	ug/kg wet	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	3.12	6.25	ug/kg wet	1	---	---	---	---	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 106 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>98 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>97 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>101 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>93 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>84 %</i>		<i>39-132 %</i>		<i>"</i>						

LCS (22D1068-BS2)												
Prepared: 04/28/22 07:28 Analyzed: 04/28/22 15:53												
EPA 8270E												
Acenaphthene	492	1.33	2.67	ug/kg wet	1	533	---	92	40-123%	---	---	
Acenaphthylene	548	1.33	2.67	ug/kg wet	1	533	---	103	32-132%	---	---	
Anthracene	519	1.33	2.67	ug/kg wet	1	533	---	97	47-123%	---	---	
Benz(a)anthracene	521	1.33	2.67	ug/kg wet	1	533	---	98	49-126%	---	---	
Benzo(a)pyrene	599	2.00	4.00	ug/kg wet	1	533	---	112	45-129%	---	---	
Benzo(b)fluoranthene	534	2.00	4.00	ug/kg wet	1	533	---	100	45-132%	---	---	
Benzo(k)fluoranthene	545	2.00	4.00	ug/kg wet	1	533	---	102	47-132%	---	---	
Benzo(g,h,i)perylene	599	1.33	2.67	ug/kg wet	1	533	---	112	43-134%	---	---	
Chrysene	513	1.33	2.67	ug/kg wet	1	533	---	96	50-124%	---	---	
Dibenz(a,h)anthracene	524	1.33	2.67	ug/kg wet	1	533	---	98	45-134%	---	---	
Fluoranthene	524	1.33	2.67	ug/kg wet	1	533	---	98	50-127%	---	---	
Fluorene	485	1.33	2.67	ug/kg wet	1	533	---	91	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	543	1.33	2.67	ug/kg wet	1	533	---	102	45-133%	---	---	
1-Methylnaphthalene	472	2.67	5.33	ug/kg wet	1	533	---	89	40-120%	---	---	
2-Methylnaphthalene	473	2.67	5.33	ug/kg wet	1	533	---	89	38-122%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
LCS (22D1068-BS2)			Prepared: 04/28/22 07:28 Analyzed: 04/28/22 15:53									
Naphthalene	486	2.67	5.33	ug/kg wet	1	533	---	91	35-123%	---	---	
Phenanthrene	495	1.33	2.67	ug/kg wet	1	533	---	93	50-121%	---	---	
Pyrene	513	1.33	2.67	ug/kg wet	1	533	---	96	47-127%	---	---	
Carbazole	514	2.00	4.00	ug/kg wet	1	533	---	96	50-123%	---	---	
Dibenzofuran	479	1.33	2.67	ug/kg wet	1	533	---	90	44-120%	---	---	
2-Chlorophenol	509	6.67	13.3	ug/kg wet	1	533	---	95	34-121%	---	---	
4-Chloro-3-methylphenol	531	13.3	26.7	ug/kg wet	1	533	---	99	45-122%	---	---	
2,4-Dichlorophenol	498	6.67	13.3	ug/kg wet	1	533	---	93	40-122%	---	---	
2,4-Dimethylphenol	528	6.67	13.3	ug/kg wet	1	533	---	99	30-127%	---	---	
2,4-Dinitrophenol	451	33.3	66.7	ug/kg wet	1	533	---	84	10-137%	---	---	Q-31
4,6-Dinitro-2-methylphenol	493	33.3	66.7	ug/kg wet	1	533	---	92	29-132%	---	---	
2-Methylphenol	532	3.33	6.67	ug/kg wet	1	533	---	100	32-122%	---	---	
3+4-Methylphenol(s)	536	3.33	6.67	ug/kg wet	1	533	---	100	34-120%	---	---	
2-Nitrophenol	483	13.3	26.7	ug/kg wet	1	533	---	91	36-123%	---	---	
4-Nitrophenol	472	13.3	26.7	ug/kg wet	1	533	---	89	30-132%	---	---	
Pentachlorophenol (PCP)	464	13.3	26.7	ug/kg wet	1	533	---	87	25-133%	---	---	
Phenol	562	2.67	5.33	ug/kg wet	1	533	---	105	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	480	6.67	13.3	ug/kg wet	1	533	---	90	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	474	6.67	13.3	ug/kg wet	1	533	---	89	40-120%	---	---	
2,4,5-Trichlorophenol	485	6.67	13.3	ug/kg wet	1	533	---	91	41-124%	---	---	
Nitrobenzene	571	13.3	26.7	ug/kg wet	1	533	---	107	34-122%	---	---	
2,4,6-Trichlorophenol	501	6.67	13.3	ug/kg wet	1	533	---	94	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	557	20.0	40.0	ug/kg wet	1	533	---	104	51-133%	---	---	
Butyl benzyl phthalate	547	13.3	26.7	ug/kg wet	1	533	---	103	48-132%	---	---	
Diethylphthalate	516	13.3	26.7	ug/kg wet	1	533	---	97	50-124%	---	---	
Dimethylphthalate	494	13.3	26.7	ug/kg wet	1	533	---	93	48-124%	---	---	
Di-n-butylphthalate	548	13.3	26.7	ug/kg wet	1	533	---	103	51-128%	---	---	
Di-n-octyl phthalate	551	13.3	26.7	ug/kg wet	1	533	---	103	45-140%	---	---	
N-Nitrosodimethylamine	503	3.33	6.67	ug/kg wet	1	533	---	94	23-120%	---	---	
N-Nitroso-di-n-propylamine	574	3.33	6.67	ug/kg wet	1	533	---	108	36-120%	---	---	
N-Nitrosodiphenylamine	530	3.33	6.67	ug/kg wet	1	533	---	99	38-127%	---	---	
Bis(2-Chloroethoxy) methane	509	3.33	6.67	ug/kg wet	1	533	---	95	36-121%	---	---	
Bis(2-Chloroethyl) ether	514	3.33	6.67	ug/kg wet	1	533	---	96	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	613	3.33	6.67	ug/kg wet	1	533	---	115	39-120%	---	---	Q-41

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
LCS (22D1068-BS2)			Prepared: 04/28/22 07:28 Analyzed: 04/28/22 15:53									
Hexachlorobenzene	484	1.33	2.67	ug/kg wet	1	533	---	91	45-122%	---	---	
Hexachlorobutadiene	452	3.33	6.67	ug/kg wet	1	533	---	85	32-123%	---	---	
Hexachlorocyclopentadiene	495	6.67	13.3	ug/kg wet	1	533	---	93	10-140%	---	---	
Hexachloroethane	503	3.33	6.67	ug/kg wet	1	533	---	94	28-120%	---	---	
2-Chloronaphthalene	498	1.33	2.67	ug/kg wet	1	533	---	93	41-120%	---	---	
1,2,4-Trichlorobenzene	473	3.33	6.67	ug/kg wet	1	533	---	89	34-120%	---	---	
4-Bromophenyl phenyl ether	482	3.33	6.67	ug/kg wet	1	533	---	90	46-124%	---	---	
4-Chlorophenyl phenyl ether	457	3.33	6.67	ug/kg wet	1	533	---	86	45-121%	---	---	
Aniline	517	6.67	13.3	ug/kg wet	1	533	---	97	10-120%	---	---	
4-Chloroaniline	388	3.33	6.67	ug/kg wet	1	533	---	73	17-120%	---	---	
2-Nitroaniline	536	26.7	53.3	ug/kg wet	1	533	---	101	44-127%	---	---	
3-Nitroaniline	541	26.7	53.3	ug/kg wet	1	533	---	101	33-120%	---	---	
4-Nitroaniline	503	26.7	53.3	ug/kg wet	1	533	---	94	51-125%	---	---	
2,4-Dinitrotoluene	529	13.3	26.7	ug/kg wet	1	533	---	99	48-126%	---	---	
2,6-Dinitrotoluene	523	13.3	26.7	ug/kg wet	1	533	---	98	46-124%	---	---	
Benzoic acid	617	167	333	ug/kg wet	1	1070	---	58	10-140%	---	---	Q-31
Benzyl alcohol	510	6.67	13.3	ug/kg wet	1	533	---	96	29-122%	---	---	
Isophorone	546	3.33	6.67	ug/kg wet	1	533	---	102	30-122%	---	---	
Azobenzene (1,2-DPH)	604	3.33	6.67	ug/kg wet	1	533	---	113	39-125%	---	---	Q-41
Bis(2-Ethylhexyl) adipate	540	33.3	66.7	ug/kg wet	1	533	---	101	61-121%	---	---	
3,3'-Dichlorobenzidine	2580	26.7	53.3	ug/kg wet	1	1070	---	242	22-121%	---	---	Q-41, Q-29, E
1,2-Dinitrobenzene	530	33.3	66.7	ug/kg wet	1	533	---	99	44-120%	---	---	
1,3-Dinitrobenzene	517	33.3	66.7	ug/kg wet	1	533	---	97	43-127%	---	---	
1,4-Dinitrobenzene	520	33.3	66.7	ug/kg wet	1	533	---	97	37-132%	---	---	
Pyridine	313	6.67	13.3	ug/kg wet	1	533	---	59	10-120%	---	---	
1,2-Dichlorobenzene	474	3.33	6.67	ug/kg wet	1	533	---	89	33-120%	---	---	
1,3-Dichlorobenzene	465	3.33	6.67	ug/kg wet	1	533	---	87	30-120%	---	---	
1,4-Dichlorobenzene	476	3.33	6.67	ug/kg wet	1	533	---	89	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 112 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 1x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>98 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>107 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>101 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>97 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>99 %</i>		<i>39-132 %</i>		<i>"</i>						

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Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Duplicate (22D1068-DUP2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 17:38						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
EPA 8270E												
Acenaphthene	29.5	5.12	10.3	ug/kg dry	4	---	22.7	---	---	26	30%	
Acenaphthylene	15.6	5.12	10.3	ug/kg dry	4	---	12.0	---	---	26	30%	
Anthracene	12.4	5.12	10.3	ug/kg dry	4	---	8.28	---	---	40	30%	Q-05
Benz(a)anthracene	19.3	5.12	10.3	ug/kg dry	4	---	15.8	---	---	20	30%	
Benzo(a)pyrene	33.8	7.69	15.4	ug/kg dry	4	---	34.0	---	---	0.7	30%	
Benzo(b)fluoranthene	42.3	7.69	15.4	ug/kg dry	4	---	37.6	---	---	12	30%	
Benzo(k)fluoranthene	16.9	7.69	15.4	ug/kg dry	4	---	13.8	---	---	20	30%	M-05
Benzo(g,h,i)perylene	35.0	5.12	10.3	ug/kg dry	4	---	29.7	---	---	16	30%	
Chrysene	37.8	5.12	10.3	ug/kg dry	4	---	32.3	---	---	16	30%	
Dibenz(a,h)anthracene	ND	5.12	10.3	ug/kg dry	4	---	ND	---	---	---	30%	
Fluoranthene	94.8	5.12	10.3	ug/kg dry	4	---	77.0	---	---	21	30%	
Fluorene	27.9	5.12	10.3	ug/kg dry	4	---	21.9	---	---	24	30%	
Indeno(1,2,3-cd)pyrene	24.6	5.12	10.3	ug/kg dry	4	---	21.1	---	---	15	30%	
1-Methylnaphthalene	14.1	10.3	20.5	ug/kg dry	4	---	ND	---	---	---	30%	Q-05, J
2-Methylnaphthalene	21.3	10.3	20.5	ug/kg dry	4	---	14.8	---	---	36	30%	Q-05
Naphthalene	86.0	10.3	20.5	ug/kg dry	4	---	58.5	---	---	38	30%	Q-17
Phenanthrene	130	5.12	10.3	ug/kg dry	4	---	106	---	---	21	30%	
Pyrene	89.3	5.12	10.3	ug/kg dry	4	---	70.5	---	---	24	30%	
Carbazole	ND	7.69	15.4	ug/kg dry	4	---	ND	---	---	---	30%	
Dibenzofuran	28.3	5.12	10.3	ug/kg dry	4	---	20.9	---	---	30	30%	
2-Chlorophenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	128	257	ug/kg dry	4	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	128	257	ug/kg dry	4	---	ND	---	---	---	30%	
2-Methylphenol	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
2-Nitrophenol	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
4-Nitrophenol	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Duplicate (22D1068-DUP2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 17:38						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
Phenol	ND	10.3	20.5	ug/kg dry	4	---	ND	---	---	---	30%	
2,3,4,6-Tetrachlorophenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
Nitrobenzene	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	410	76.9	154	ug/kg dry	4	---	335	---	---	20	30%	
Butyl benzyl phthalate	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
Diethylphthalate	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
Dimethylphthalate	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
N-Nitrosodimethylamine	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
N-Nitroso-di-n-propylamine	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
N-Nitrosodiphenylamine	ND	25.7	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Bis(2-Chloroethoxy) methane	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Bis(2-Chloroethyl) ether	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
2,2'-Oxybis(1-Chloropropane)	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Hexachlorobenzene	ND	5.12	10.3	ug/kg dry	4	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Hexachlorocyclopentadiene	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
Hexachloroethane	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
2-Chloronaphthalene	ND	5.12	10.3	ug/kg dry	4	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
4-Bromophenyl phenyl ether	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
4-Chlorophenyl phenyl ether	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Aniline	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
4-Chloroaniline	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
2-Nitroaniline	ND	103	205	ug/kg dry	4	---	ND	---	---	---	30%	
3-Nitroaniline	ND	103	205	ug/kg dry	4	---	ND	---	---	---	30%	
4-Nitroaniline	ND	103	205	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dinitrotoluene	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	
2,6-Dinitrotoluene	ND	51.2	103	ug/kg dry	4	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Duplicate (22D1068-DUP2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 17:38						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
Benzoic acid	ND	642	1280	ug/kg dry	4	---	ND	---	---	---	30%	
Benzyl alcohol	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
Isophorone	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Azobenzene (1,2-DPH)	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
Bis(2-Ethylhexyl) adipate	ND	128	257	ug/kg dry	4	---	ND	---	---	---	30%	
3,3'-Dichlorobenzidine	ND	103	205	ug/kg dry	4	---	ND	---	---	---	30%	Q-52
1,2-Dinitrobenzene	ND	128	257	ug/kg dry	4	---	ND	---	---	---	30%	
1,3-Dinitrobenzene	ND	128	257	ug/kg dry	4	---	ND	---	---	---	30%	
1,4-Dinitrobenzene	ND	128	257	ug/kg dry	4	---	ND	---	---	---	30%	
Pyridine	ND	25.7	51.2	ug/kg dry	4	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	12.8	25.7	ug/kg dry	4	---	ND	---	---	---	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 78 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>79 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>56 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>82 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>45 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>40 %</i>		<i>39-132 %</i>		<i>"</i>						

Matrix Spike (22D1068-MS2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 18:14						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
EPA 8270E												
Acenaphthene	407	5.28	10.6	ug/kg dry	4	529	22.7	73	40-123%	---	---	
Acenaphthylene	429	5.28	10.6	ug/kg dry	4	529	12.0	79	32-132%	---	---	
Anthracene	410	5.28	10.6	ug/kg dry	4	529	8.28	76	47-123%	---	---	
Benz(a)anthracene	382	5.28	10.6	ug/kg dry	4	529	15.8	69	49-126%	---	---	
Benzo(a)pyrene	425	7.94	15.9	ug/kg dry	4	529	34.0	74	45-129%	---	---	
Benzo(b)fluoranthene	434	7.94	15.9	ug/kg dry	4	529	37.6	75	45-132%	---	---	
Benzo(k)fluoranthene	373	7.94	15.9	ug/kg dry	4	529	13.8	68	47-132%	---	---	
Benzo(g,h,i)perylene	327	5.28	10.6	ug/kg dry	4	529	29.7	56	43-134%	---	---	
Chrysene	396	5.28	10.6	ug/kg dry	4	529	32.3	69	50-124%	---	---	
Dibenz(a,h)anthracene	266	5.28	10.6	ug/kg dry	4	529	ND	50	45-134%	---	---	

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Philip Nerenberg, Lab Director



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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Matrix Spike (22D1068-MS2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 18:14						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
Fluoranthene	489	5.28	10.6	ug/kg dry	4	529	77.0	78	50-127%	---	---	
Fluorene	398	5.28	10.6	ug/kg dry	4	529	21.9	71	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	290	5.28	10.6	ug/kg dry	4	529	21.1	51	45-133%	---	---	
1-Methylnaphthalene	365	10.6	21.2	ug/kg dry	4	529	ND	69	40-120%	---	---	
2-Methylnaphthalene	371	10.6	21.2	ug/kg dry	4	529	14.8	67	38-122%	---	---	
Naphthalene	438	10.6	21.2	ug/kg dry	4	529	58.5	72	35-123%	---	---	
Phenanthrene	494	5.28	10.6	ug/kg dry	4	529	106	73	50-121%	---	---	
Pyrene	471	5.28	10.6	ug/kg dry	4	529	70.5	76	47-127%	---	---	
Carbazole	426	7.94	15.9	ug/kg dry	4	529	ND	81	50-123%	---	---	
Dibenzofuran	388	5.28	10.6	ug/kg dry	4	529	20.9	69	44-120%	---	---	
2-Chlorophenol	298	26.5	52.8	ug/kg dry	4	529	ND	56	34-121%	---	---	
4-Chloro-3-methylphenol	309	52.8	106	ug/kg dry	4	529	ND	58	45-122%	---	---	
2,4-Dichlorophenol	257	26.5	52.8	ug/kg dry	4	529	ND	49	40-122%	---	---	
2,4-Dimethylphenol	384	26.5	52.8	ug/kg dry	4	529	ND	73	30-127%	---	---	
2,4-Dinitrophenol	ND	132	265	ug/kg dry	4	529	ND		10-137%	---	---	Q-31, Q-01
4,6-Dinitro-2-methylphenol	ND	132	265	ug/kg dry	4	529	ND		29-132%	---	---	Q-01
2-Methylphenol	343	13.2	26.5	ug/kg dry	4	529	ND	65	32-122%	---	---	
3+4-Methylphenol(s)	322	13.2	26.5	ug/kg dry	4	529	ND	61	34-120%	---	---	
2-Nitrophenol	247	52.8	106	ug/kg dry	4	529	ND	47	36-123%	---	---	
4-Nitrophenol	61.3	52.8	106	ug/kg dry	4	529	ND	12	30-132%	---	---	Q-01, J
Pentachlorophenol (PCP)	55.9	52.8	106	ug/kg dry	4	529	ND	11	25-133%	---	---	Q-01, J
Phenol	303	10.6	21.2	ug/kg dry	4	529	ND	57	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	77.6	26.5	52.8	ug/kg dry	4	529	ND	15	44-125%	---	---	Q-01
2,3,5,6-Tetrachlorophenol	55.2	26.5	52.8	ug/kg dry	4	529	ND	10	40-120%	---	---	Q-01
2,4,5-Trichlorophenol	151	26.5	52.8	ug/kg dry	4	529	ND	28	41-124%	---	---	Q-01
Nitrobenzene	390	52.8	106	ug/kg dry	4	529	ND	74	34-122%	---	---	
2,4,6-Trichlorophenol	203	26.5	52.8	ug/kg dry	4	529	ND	38	39-126%	---	---	Q-01
Bis(2-ethylhexyl)phthalate	857	79.4	159	ug/kg dry	4	529	335	99	51-133%	---	---	
Butyl benzyl phthalate	490	52.8	106	ug/kg dry	4	529	ND	93	48-132%	---	---	
Diethylphthalate	391	52.8	106	ug/kg dry	4	529	ND	74	50-124%	---	---	
Dimethylphthalate	360	52.8	106	ug/kg dry	4	529	ND	68	48-124%	---	---	
Di-n-butylphthalate	455	52.8	106	ug/kg dry	4	529	ND	86	51-128%	---	---	
Di-n-octyl phthalate	587	52.8	106	ug/kg dry	4	529	ND	111	45-140%	---	---	

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Matrix Spike (22D1068-MS2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 18:14						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
N-Nitrosodimethylamine	267	13.2	26.5	ug/kg dry	4	529	ND	50	23-120%	---	---	
N-Nitroso-di-n-propylamine	370	13.2	26.5	ug/kg dry	4	529	ND	70	36-120%	---	---	
N-Nitrosodiphenylamine	448	13.2	26.5	ug/kg dry	4	529	ND	82	38-127%	---	---	
Bis(2-Chloroethoxy) methane	370	13.2	26.5	ug/kg dry	4	529	ND	70	36-121%	---	---	
Bis(2-Chloroethyl) ether	349	13.2	26.5	ug/kg dry	4	529	ND	66	31-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	433	13.2	26.5	ug/kg dry	4	529	ND	82	39-120%	---	---	Q-41
Hexachlorobenzene	381	5.28	10.6	ug/kg dry	4	529	ND	72	45-122%	---	---	
Hexachlorobutadiene	337	13.2	26.5	ug/kg dry	4	529	ND	64	32-123%	---	---	
Hexachlorocyclopentadiene	218	26.5	52.8	ug/kg dry	4	529	ND	41	10-140%	---	---	
Hexachloroethane	366	13.2	26.5	ug/kg dry	4	529	ND	69	28-120%	---	---	
2-Chloronaphthalene	377	5.28	10.6	ug/kg dry	4	529	ND	71	41-120%	---	---	
1,2,4-Trichlorobenzene	361	13.2	26.5	ug/kg dry	4	529	ND	68	34-120%	---	---	
4-Bromophenyl phenyl ether	398	13.2	26.5	ug/kg dry	4	529	ND	75	46-124%	---	---	
4-Chlorophenyl phenyl ether	361	13.2	26.5	ug/kg dry	4	529	ND	68	45-121%	---	---	
Aniline	110	26.5	52.8	ug/kg dry	4	529	ND	21	10-120%	---	---	
4-Chloroaniline	223	13.2	26.5	ug/kg dry	4	529	ND	42	17-120%	---	---	
2-Nitroaniline	372	106	212	ug/kg dry	4	529	ND	70	44-127%	---	---	
3-Nitroaniline	343	106	212	ug/kg dry	4	529	ND	65	33-120%	---	---	
4-Nitroaniline	248	106	212	ug/kg dry	4	529	ND	47	51-125%	---	---	Q-01
2,4-Dinitrotoluene	363	52.8	106	ug/kg dry	4	529	ND	69	48-126%	---	---	
2,6-Dinitrotoluene	392	52.8	106	ug/kg dry	4	529	ND	74	46-124%	---	---	
Benzoic acid	ND	663	1320	ug/kg dry	4	1060	ND		10-140%	---	---	Q-31, Q-01
Benzyl alcohol	299	26.5	52.8	ug/kg dry	4	529	ND	56	29-122%	---	---	
Isophorone	366	13.2	26.5	ug/kg dry	4	529	ND	69	30-122%	---	---	
Azobenzene (1,2-DPH)	458	13.2	26.5	ug/kg dry	4	529	ND	86	39-125%	---	---	Q-41
Bis(2-Ethylhexyl) adipate	473	132	265	ug/kg dry	4	529	ND	89	61-121%	---	---	
3,3'-Dichlorobenzidine	711	106	212	ug/kg dry	4	1060	ND	67	22-121%	---	---	Q-41
1,2-Dinitrobenzene	375	132	265	ug/kg dry	4	529	ND	71	44-120%	---	---	
1,3-Dinitrobenzene	337	132	265	ug/kg dry	4	529	ND	64	43-127%	---	---	
1,4-Dinitrobenzene	363	132	265	ug/kg dry	4	529	ND	68	37-132%	---	---	
Pyridine	ND	26.5	52.8	ug/kg dry	4	529	ND		10-120%	---	---	Q-01
1,2-Dichlorobenzene	336	13.2	26.5	ug/kg dry	4	529	ND	64	33-120%	---	---	
1,3-Dichlorobenzene	333	13.2	26.5	ug/kg dry	4	529	ND	63	30-120%	---	---	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1068 - EPA 3546						Soil						
Matrix Spike (22D1068-MS2)						Prepared: 04/28/22 07:28 Analyzed: 04/28/22 18:14						PRO
QC Source Sample: DU-01 (A2D0663-24RE1)												
1,4-Dichlorobenzene	336	13.2	26.5	ug/kg dry	4	529	ND	64	31-120%	---	---	
<i>Surr: Nitrobenzene-d5 (Surr)</i>		<i>Recovery: 76 %</i>		<i>Limits: 37-122 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>73 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>58 %</i>		<i>33-122 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>78 %</i>		<i>54-127 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>47 %</i>		<i>35-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>48 %</i>		<i>39-132 %</i>		<i>"</i>						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1163 - EPA 3051A						Soil						
Blank (22D1163-BLK1)						Prepared: 04/30/22 16:10 Analyzed: 05/02/22 16:32						
<u>EPA 6020B</u>												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
LCS (22D1163-BS1)						Prepared: 04/30/22 16:10 Analyzed: 05/02/22 16:45						
<u>EPA 6020B</u>												
Arsenic	47.3	0.500	1.00	mg/kg wet	10	50.0	---	95	80-120%	---	---	
Barium	48.4	0.500	1.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Cadmium	47.7	0.100	0.200	mg/kg wet	10	50.0	---	95	80-120%	---	---	
Chromium	49.1	0.500	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Lead	46.5	0.100	0.200	mg/kg wet	10	50.0	---	93	80-120%	---	---	
Mercury	0.875	0.0400	0.0800	mg/kg wet	10	1.00	---	88	80-120%	---	---	
Selenium	22.7	0.500	1.00	mg/kg wet	10	25.0	---	91	80-120%	---	---	
Silver	24.7	0.100	0.200	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Duplicate (22D1163-DUP1)						Prepared: 04/30/22 16:10 Analyzed: 05/02/22 16:55						
<u>QC Source Sample: SB01-0.5-3 (A2D0663-01)</u>												
<u>EPA 6020B</u>												
Arsenic	2.71	0.624	1.25	mg/kg dry	10	---	2.62	---	---	3	20%	
Barium	11.3	0.624	1.25	mg/kg dry	10	---	13.6	---	---	19	20%	
Cadmium	ND	0.125	0.250	mg/kg dry	10	---	0.137	---	---	***	20%	
Chromium	8.21	0.624	1.25	mg/kg dry	10	---	10.9	---	---	28	20%	Q-17
Lead	1.27	0.125	0.250	mg/kg dry	10	---	1.72	---	---	30	20%	Q-17
Mercury	ND	0.0499	0.0999	mg/kg dry	10	---	ND	---	---	---	20%	
Selenium	ND	0.624	1.25	mg/kg dry	10	---	ND	---	---	---	20%	
Silver	ND	0.125	0.250	mg/kg dry	10	---	ND	---	---	---	20%	
Matrix Spike (22D1163-MS1)						Prepared: 04/30/22 16:10 Analyzed: 05/02/22 17:00						

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Philip Nerenberg, Lab Director



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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1163 - EPA 3051A						Soil						
Matrix Spike (22D1163-MS1)						Prepared: 04/30/22 16:10 Analyzed: 05/02/22 17:00						
QC Source Sample: SB01-0.5-3 (A2D0663-01)												
EPA 6020B												
Arsenic	64.3	0.642	1.28	mg/kg dry	10	64.2	2.62	96	75-125%	---	---	
Barium	85.1	0.642	1.28	mg/kg dry	10	64.2	13.6	111	75-125%	---	---	
Cadmium	63.6	0.128	0.257	mg/kg dry	10	64.2	0.137	99	75-125%	---	---	
Chromium	79.6	0.642	1.28	mg/kg dry	10	64.2	10.9	107	75-125%	---	---	
Lead	61.3	0.128	0.257	mg/kg dry	10	64.2	1.72	93	75-125%	---	---	
Mercury	1.14	0.0514	0.103	mg/kg dry	10	1.28	ND	89	75-125%	---	---	
Selenium	28.7	0.642	1.28	mg/kg dry	10	32.1	ND	89	75-125%	---	---	
Silver	32.5	0.128	0.257	mg/kg dry	10	32.1	ND	101	75-125%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1164 - EPA 3051A						Soil						
Blank (22D1164-BLK1)			Prepared: 05/02/22 15:00 Analyzed: 05/03/22 16:38									
<u>EPA 6020B</u>												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	0.104	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	B-02, J
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
<hr/>												
LCS (22D1164-BS1)			Prepared: 05/02/22 15:00 Analyzed: 05/03/22 16:48									
<u>EPA 6020B</u>												
Arsenic	48.6	0.500	1.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Barium	48.6	0.500	1.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Cadmium	48.2	0.100	0.200	mg/kg wet	10	50.0	---	96	80-120%	---	---	
Chromium	48.4	0.500	1.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Lead	48.1	0.100	0.200	mg/kg wet	10	50.0	---	96	80-120%	---	---	B-02
Mercury	0.935	0.0400	0.0800	mg/kg wet	10	1.00	---	93	80-120%	---	---	
Selenium	21.7	0.500	1.00	mg/kg wet	10	25.0	---	87	80-120%	---	---	
Silver	23.7	0.100	0.200	mg/kg wet	10	25.0	---	95	80-120%	---	---	
<hr/>												
Duplicate (22D1164-DUP1)			Prepared: 05/02/22 15:00 Analyzed: 05/03/22 17:19									
<u>QC Source Sample: Non-SDG (A2D0871-02)</u>												
Arsenic	5.60	0.557	1.11	mg/kg dry	10	---	5.05	---	---	10	20%	PRO
Barium	171	0.557	1.11	mg/kg dry	10	---	177	---	---	3	20%	PRO
Cadmium	0.112	0.111	0.223	mg/kg dry	10	---	0.176	---	---	44	20%	PRO, J
Chromium	19.6	0.557	1.11	mg/kg dry	10	---	18.6	---	---	5	20%	PRO
Lead	18.0	0.111	0.223	mg/kg dry	10	---	18.3	---	---	2	20%	PRO, B-02
Mercury	ND	0.0446	0.0892	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Selenium	ND	0.557	1.11	mg/kg dry	10	---	ND	---	---	---	20%	PRO
Silver	ND	0.111	0.223	mg/kg dry	10	---	ND	---	---	---	20%	PRO
<hr/>												
Matrix Spike (22D1164-MS1)			Prepared: 05/02/22 15:00 Analyzed: 05/03/22 17:24									

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1164 - EPA 3051A						Soil						
Matrix Spike (22D1164-MS1)						Prepared: 05/02/22 15:00 Analyzed: 05/03/22 17:24						
QC Source Sample: Non-SDG (A2D0871-02)												
EPA 6020B												
Arsenic	57.2	0.526	1.05	mg/kg dry	10	52.6	5.05	99	75-125%	---	---	PRO
Barium	229	0.526	1.05	mg/kg dry	10	52.6	177	99	75-125%	---	---	PRO
Cadmium	53.5	0.105	0.210	mg/kg dry	10	52.6	0.176	101	75-125%	---	---	PRO
Chromium	73.6	0.526	1.05	mg/kg dry	10	52.6	18.6	104	75-125%	---	---	PRO
Lead	70.1	0.105	0.210	mg/kg dry	10	52.6	18.3	98	75-125%	---	---	PRO,B-02
Mercury	1.03	0.0421	0.0842	mg/kg dry	10	1.05	ND	97	75-125%	---	---	PRO
Selenium	22.9	0.526	1.05	mg/kg dry	10	26.3	ND	87	75-125%	---	---	PRO
Silver	26.6	0.105	0.210	mg/kg dry	10	26.3	ND	101	75-125%	---	---	PRO

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22E0126 - EPA 3015A						Water						
Blank (22E0126-BLK1)			Prepared: 05/04/22 09:20 Analyzed: 05/06/22 01:09									
EPA 6020B												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	0.110	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22E0126-BS1)												
										Prepared: 05/04/22 09:20 Analyzed: 05/06/22 01:14		
EPA 6020B												
Arsenic	53.7	0.500	1.00	ug/L	1	55.6	---	97	80-120%	---	---	
Barium	54.7	1.00	2.00	ug/L	1	55.6	---	98	80-120%	---	---	
Cadmium	53.3	0.100	0.200	ug/L	1	55.6	---	96	80-120%	---	---	
Chromium	54.7	1.00	2.00	ug/L	1	55.6	---	99	80-120%	---	---	
Lead	54.0	0.110	0.200	ug/L	1	55.6	---	97	80-120%	---	---	
Mercury	1.04	0.0400	0.0800	ug/L	1	1.11	---	94	80-120%	---	---	
Selenium	24.6	0.500	1.00	ug/L	1	27.8	---	88	80-120%	---	---	
Silver	27.0	0.100	0.200	ug/L	1	27.8	---	97	80-120%	---	---	
Duplicate (22E0126-DUP1)												
										Prepared: 05/04/22 09:20 Analyzed: 05/06/22 01:24		
QC Source Sample: SB-1 (A2D0663-13)												
EPA 6020B												
Arsenic	8.44	0.500	1.00	ug/L	1	---	8.62	---	---	2	20%	
Barium	12.0	1.00	2.00	ug/L	1	---	12.3	---	---	3	20%	
Cadmium	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Chromium	2.97	1.00	2.00	ug/L	1	---	3.00	---	---	1	20%	
Lead	0.566	0.110	0.200	ug/L	1	---	0.597	---	---	5	20%	
Mercury	ND	0.0400	0.0800	ug/L	1	---	ND	---	---	---	20%	
Selenium	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Silver	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (22E0126-MS1)												
										Prepared: 05/04/22 09:20 Analyzed: 05/06/22 01:29		

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Philip Nerenberg

Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22E0126 - EPA 3015A						Water						
Matrix Spike (22E0126-MS1)						Prepared: 05/04/22 09:20 Analyzed: 05/06/22 01:29						
QC Source Sample: SB-1 (A2D0663-13)												
EPA 6020B												
Arsenic	63.3	0.500	1.00	ug/L	1	55.6	8.62	98	75-125%	---	---	
Barium	66.8	1.00	2.00	ug/L	1	55.6	12.3	98	75-125%	---	---	
Cadmium	54.3	0.100	0.200	ug/L	1	55.6	ND	98	75-125%	---	---	
Chromium	58.7	1.00	2.00	ug/L	1	55.6	3.00	100	75-125%	---	---	
Lead	54.2	0.110	0.200	ug/L	1	55.6	0.597	96	75-125%	---	---	
Mercury	1.01	0.0400	0.0800	ug/L	1	1.11	ND	91	75-125%	---	---	
Selenium	25.9	0.500	1.00	ug/L	1	27.8	ND	93	75-125%	---	---	
Silver	27.1	0.100	0.200	ug/L	1	27.8	ND	98	75-125%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22E0222 - EPA 3015A						Water						
Blank (22E0222-BLK1)						Prepared: 05/06/22 12:00 Analyzed: 05/06/22 16:51						
<u>EPA 6020B</u>												
Barium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	0.110	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Blank (22E0222-BLK4)						Prepared: 05/06/22 12:00 Analyzed: 05/09/22 14:46						
<u>EPA 6020B</u>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-16
LCS (22E0222-BS1)						Prepared: 05/06/22 12:00 Analyzed: 05/06/22 16:56						
<u>EPA 6020B</u>												
Barium	54.0	1.00	2.00	ug/L	1	55.6	---	97	80-120%	---	---	
Cadmium	53.7	0.100	0.200	ug/L	1	55.6	---	97	80-120%	---	---	
Chromium	53.8	1.00	2.00	ug/L	1	55.6	---	97	80-120%	---	---	
Lead	55.6	0.110	0.200	ug/L	1	55.6	---	100	80-120%	---	---	
Mercury	1.05	0.0400	0.0800	ug/L	1	1.11	---	95	80-120%	---	---	
Selenium	25.1	0.500	1.00	ug/L	1	27.8	---	91	80-120%	---	---	
Silver	27.1	0.100	0.200	ug/L	1	27.8	---	98	80-120%	---	---	
LCS (22E0222-BS4)						Prepared: 05/06/22 12:00 Analyzed: 05/09/22 14:52						
<u>EPA 6020B</u>												
Arsenic	52.7	0.500	1.00	ug/L	1	55.6	---	95	80-120%	---	---	Q-16
Duplicate (22E0222-DUP1)						Prepared: 05/06/22 12:00 Analyzed: 05/06/22 17:33						
<u>QC Source Sample: Non-SDG (A2D0865-01RE1)</u>												
Barium	68.7	50.0	100	ug/L	50	---	66.9	---	---	3	20%	J
Cadmium	ND	5.00	10.0	ug/L	50	---	ND	---	---	---	20%	
Chromium	ND	50.0	100	ug/L	50	---	ND	---	---	---	20%	
Lead	ND	5.50	10.0	ug/L	50	---	ND	---	---	---	20%	

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22E0222 - EPA 3015A												
Water												
Duplicate (22E0222-DUP1) Prepared: 05/06/22 12:00 Analyzed: 05/06/22 17:33												
<u>QC Source Sample: Non-SDG (A2D0865-01RE1)</u>												
Mercury	ND	2.00	4.00	ug/L	50	---	ND	---	---	---	20%	
Selenium	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	20%	
Silver	ND	5.00	10.0	ug/L	50	---	ND	---	---	---	20%	
Duplicate (22E0222-DUP4) Prepared: 05/06/22 12:00 Analyzed: 05/09/22 15:02												
<u>QC Source Sample: Non-SDG (A2D0865-01RE4)</u>												
Arsenic	ND	25.0	50.0	ug/L	50	---	ND	---	---	---	20%	Q-16
Matrix Spike (22E0222-MS1) Prepared: 05/06/22 12:00 Analyzed: 05/06/22 17:53												
<u>QC Source Sample: Non-SDG (A2D0865-01RE1)</u>												
<u>EPA 6020B</u>												
Barium	121	50.0	100	ug/L	50	55.6	66.9	98	75-125%	---	---	
Cadmium	53.6	5.00	10.0	ug/L	50	55.6	ND	96	75-125%	---	---	
Chromium	56.6	50.0	100	ug/L	50	55.6	ND	102	75-125%	---	---	J
Lead	57.7	5.50	10.0	ug/L	50	55.6	ND	104	75-125%	---	---	
Mercury	ND	2.00	4.00	ug/L	50	1.11	ND		75-125%	---	---	Q-11
Selenium	30.0	25.0	50.0	ug/L	50	27.8	ND	108	75-125%	---	---	J
Silver	28.3	5.00	10.0	ug/L	50	27.8	ND	102	75-125%	---	---	
Matrix Spike (22E0222-MS4) Prepared: 05/06/22 12:00 Analyzed: 05/09/22 15:07												
<u>QC Source Sample: Non-SDG (A2D0865-01RE4)</u>												
<u>EPA 6020B</u>												
Arsenic	54.6	25.0	50.0	ug/L	50	55.6	ND	98	75-125%	---	---	Q-16

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0782 - Matrix Matched Direct Inject												
Water												
Blank (22D0782-BLK1)												
						Prepared: 04/20/22 12:40 Analyzed: 04/21/22 12:17						
<u>EPA 6020B (Diss)</u>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22D0782-BS1)												
						Prepared: 04/20/22 12:40 Analyzed: 04/21/22 12:23						
<u>EPA 6020B (Diss)</u>												
Arsenic	51.3	0.500	1.00	ug/L	1	55.6	---	92	80-120%	---	---	
Barium	53.8	0.500	1.00	ug/L	1	55.6	---	97	80-120%	---	---	
Cadmium	51.4	0.100	0.200	ug/L	1	55.6	---	93	80-120%	---	---	
Chromium	55.6	1.00	2.00	ug/L	1	55.6	---	100	80-120%	---	---	
Lead	52.5	0.100	0.200	ug/L	1	55.6	---	94	80-120%	---	---	
Mercury	0.988	0.0400	0.0800	ug/L	1	1.11	---	89	80-120%	---	---	
Selenium	24.5	0.500	1.00	ug/L	1	27.8	---	88	80-120%	---	---	
Silver	27.0	0.100	0.200	ug/L	1	27.8	---	97	80-120%	---	---	
Duplicate (22D0782-DUP1)												
						Prepared: 04/20/22 12:40 Analyzed: 04/21/22 18:22						
<u>QC Source Sample: SB-1 (A2D0663-13)</u>												
<u>EPA 6020B (Diss)</u>												
Arsenic	6.31	0.500	1.00	ug/L	1	---	6.47	---	---	3	20%	
Barium	10.7	0.500	1.00	ug/L	1	---	11.5	---	---	7	20%	
Cadmium	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Chromium	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	20%	
Lead	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Mercury	ND	0.0400	0.0800	ug/L	1	---	ND	---	---	---	20%	
Selenium	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Silver	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (22D0782-MS1)												
						Prepared: 04/20/22 12:40 Analyzed: 04/21/22 18:32						

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0782 - Matrix Matched Direct Inject						Water						
Matrix Spike (22D0782-MS1)						Prepared: 04/20/22 12:40 Analyzed: 04/21/22 18:32						
QC Source Sample: SB-2 (A2D0663-14)												
EPA 6020B (Diss)												
Arsenic	53.9	0.500	1.00	ug/L	1	55.6	ND	97	75-125%	---	---	
Barium	59.5	0.500	1.00	ug/L	1	55.6	3.34	101	75-125%	---	---	
Cadmium	54.4	0.100	0.200	ug/L	1	55.6	ND	98	75-125%	---	---	
Chromium	59.8	1.00	2.00	ug/L	1	55.6	ND	108	75-125%	---	---	
Lead	54.3	0.100	0.200	ug/L	1	55.6	ND	98	75-125%	---	---	
Mercury	1.05	0.0400	0.0800	ug/L	1	1.11	ND	95	75-125%	---	---	
Selenium	25.2	0.500	1.00	ug/L	1	27.8	ND	91	75-125%	---	---	
Silver	25.2	0.100	0.200	ug/L	1	27.8	ND	91	75-125%	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1142 - Matrix Matched Direct Inject						Water						
Blank (22D1142-BLK1)						Prepared: 04/29/22 13:16 Analyzed: 05/01/22 01:28						
<u>EPA 6020B (Diss)</u>												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Chromium	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	ug/L	1	---	---	---	---	---	---	
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
LCS (22D1142-BS1)						Prepared: 04/29/22 13:16 Analyzed: 05/01/22 01:33						
<u>EPA 6020B (Diss)</u>												
Arsenic	52.3	0.500	1.00	ug/L	1	55.6	---	94	80-120%	---	---	
Barium	53.5	0.500	1.00	ug/L	1	55.6	---	96	80-120%	---	---	
Cadmium	51.3	0.100	0.200	ug/L	1	55.6	---	92	80-120%	---	---	
Chromium	54.8	1.00	2.00	ug/L	1	55.6	---	99	80-120%	---	---	
Lead	54.0	0.100	0.200	ug/L	1	55.6	---	97	80-120%	---	---	
Mercury	1.09	0.0400	0.0800	ug/L	1	1.11	---	98	80-120%	---	---	
Selenium	25.6	0.500	1.00	ug/L	1	27.8	---	92	80-120%	---	---	
Silver	27.6	0.100	0.200	ug/L	1	27.8	---	99	80-120%	---	---	Q-41
Duplicate (22D1142-DUP1)						Prepared: 04/29/22 13:16 Analyzed: 05/01/22 01:42						
<u>QC Source Sample: SB-4 (A2D0663-16)</u>												
<u>EPA 6020B (Diss)</u>												
Arsenic	1.40	0.500	1.00	ug/L	1	---	1.30	---	---	7	20%	
Barium	62.7	0.500	1.00	ug/L	1	---	62.7	---	---	0.08	20%	
Cadmium	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Chromium	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	20%	
Lead	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Mercury	ND	0.0400	0.0800	ug/L	1	---	ND	---	---	---	20%	
Selenium	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Silver	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (22D1142-MS1)						Prepared: 04/29/22 13:16 Analyzed: 05/01/22 01:52						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D1142 - Matrix Matched Direct Inject						Water						
Matrix Spike (22D1142-MS1)						Prepared: 04/29/22 13:16 Analyzed: 05/01/22 01:52						
QC Source Sample: SB-5 (A2D0663-17)												
EPA 6020B (Diss)												
Arsenic	56.8	0.500	1.00	ug/L	1	55.6	ND	102	75-125%	---	---	
Barium	66.2	0.500	1.00	ug/L	1	55.6	12.8	96	75-125%	---	---	
Cadmium	54.1	0.100	0.200	ug/L	1	55.6	ND	97	75-125%	---	---	
Chromium	57.0	1.00	2.00	ug/L	1	55.6	ND	103	75-125%	---	---	
Lead	53.6	0.100	0.200	ug/L	1	55.6	0.182	96	75-125%	---	---	
Mercury	1.06	0.0400	0.0800	ug/L	1	1.11	ND	95	75-125%	---	---	
Selenium	28.1	0.500	1.00	ug/L	1	27.8	ND	101	75-125%	---	---	
Silver	27.4	0.100	0.200	ug/L	1	27.8	ND	99	75-125%	---	---	Q-41

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 22D0779 - Total Solids (Dry Weight)						Soil						
Duplicate (22D0779-DUP1)			Prepared: 04/20/22 12:14 Analyzed: 04/21/22 09:45									
<u>QC Source Sample: Non-SDG (A2D0374-03)</u>												
% Solids	87.2	1.00	1.00	%	1	---	87.0	---	---	0.3	10%	
Duplicate (22D0779-DUP2)			Prepared: 04/20/22 12:14 Analyzed: 04/21/22 09:45									
<u>QC Source Sample: SB03-3-5 (A2D0663-05)</u>												
<u>EPA 8000D</u>												
% Solids	85.3	1.00	1.00	%	1	---	86.3	---	---	1	10%	
Duplicate (22D0779-DUP3)			Prepared: 04/20/22 12:14 Analyzed: 04/21/22 09:45									
<u>QC Source Sample: DU-02 (A2D0663-25)</u>												
<u>EPA 8000D</u>												
% Solids	86.5	1.00	1.00	%	1	---	89.5	---	---	3	10%	
Duplicate (22D0779-DUP4)			Prepared: 04/20/22 12:14 Analyzed: 04/21/22 09:45									
<u>QC Source Sample: Non-SDG (A2D0715-01)</u>												
% Solids	77.8	1.00	1.00	%	1	---	77.5	---	---	0.5	10%	
Duplicate (22D0779-DUP5)			Prepared: 04/20/22 19:12 Analyzed: 04/21/22 09:45									
<u>QC Source Sample: Non-SDG (A2D0798-01)</u>												
% Solids	82.8	1.00	1.00	%	1	---	82.4	---	---	0.6	10%	
Duplicate (22D0779-DUP6)			Prepared: 04/20/22 19:12 Analyzed: 04/21/22 09:45									
<u>QC Source Sample: Non-SDG (A2D0801-01)</u>												
% Solids	81.4	1.00	1.00	%	1	---	81.3	---	---	0.1	10%	

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

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ANALYTICAL REPORT

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503-718-2323
ORELAP ID: OR100062

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 22D0991 - Total Solids (Dry Weight)						Soil							
Duplicate (22D0991-DUP1)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A1K0461-49)</u>													
% Solids	98.8	1.00	1.00	%	1	---	98.9	---	---	0.2	10%		
Duplicate (22D0991-DUP2)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-02)</u>													
% Solids	98.3	1.00	1.00	%	1	---	98.5	---	---	0.2	10%		
Duplicate (22D0991-DUP3)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-04)</u>													
% Solids	98.5	1.00	1.00	%	1	---	98.7	---	---	0.1	10%		
Duplicate (22D0991-DUP4)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-06)</u>													
% Solids	98.9	1.00	1.00	%	1	---	98.9	---	---	0.04	10%		
Duplicate (22D0991-DUP5)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-08)</u>													
% Solids	98.8	1.00	1.00	%	1	---	98.8	---	---	0.04	10%		
Duplicate (22D0991-DUP6)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-10)</u>													
% Solids	98.5	1.00	1.00	%	1	---	98.6	---	---	0.07	10%		
Duplicate (22D0991-DUP7)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-12)</u>													
% Solids	98.0	1.00	1.00	%	1	---	98.1	---	---	0.1	10%		
Duplicate (22D0991-DUP8)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-14)</u>													
% Solids	97.4	1.00	1.00	%	1	---	97.6	---	---	0.2	10%		

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 22D0991 - Total Solids (Dry Weight)						Soil							
Duplicate (22D0991-DUP9)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-16)</u>													
% Solids	98.1	1.00	1.00	%	1	---	98.2	---	---	0.07	10%		
Duplicate (22D0991-DUPA)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D0561-18)</u>													
% Solids	98.2	1.00	1.00	%	1	---	98.3	---	---	0.1	10%		
Duplicate (22D0991-DUPB)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: DU-01 (A2D0663-24)</u>													
<u>EPA 8000D</u>													
% Solids	99.0	1.00	1.00	%	1	---	99.0	---	---	0.04	10%		
Duplicate (22D0991-DUPC)			Prepared: 04/26/22 11:15 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: DU-02 (A2D0663-26)</u>													
<u>EPA 8000D</u>													
% Solids	98.9	1.00	1.00	%	1	---	98.9	---	---	0.06	10%		
Duplicate (22D0991-DUPD)			Prepared: 04/26/22 16:50 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D1022-01)</u>													
% Solids	91.4	1.00	1.00	%	1	---	88.4	---	---	3	10%		
Duplicate (22D0991-DUPE)			Prepared: 04/26/22 16:50 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D1030-01)</u>													
% Solids	89.4	1.00	1.00	%	1	---	89.4	---	---	0.01	10%		
Duplicate (22D0991-DUPF)			Prepared: 04/26/22 18:58 Analyzed: 04/27/22 09:10						PRO				
<u>QC Source Sample: Non-SDG (A2D1031-04)</u>													
% Solids	82.9	1.00	1.00	%	1	---	83.0	---	---	0.02	10%		

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

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Philip Nerenberg, Lab Director

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Table with project details: Stantec Portland, Project: Ko' Kuel Wharf, Project Number: 185751418, Project Manager: Graeme Taylor, Report ID: A2D0663 - 05 17 22 1412

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Table for EPA 3510C (Fuels/Acid Ext.) with columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Includes batches 22D0823 and 22D0975.

Table for EPA 3546 (Fuels) with columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Includes batches 22D0836, 22D0860, 22D0944, 22D0958, 22D0971, and 22D1021.

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Philip Nerenberg (signature)

Philip Nerenberg, Lab Director



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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2D0663-28	Soil	NWTPH-Dx	04/13/22 11:50	04/27/22 07:09	10.49g/5mL	10g/5mL	0.95
A2D0663-34	Soil	NWTPH-Dx	04/13/22 16:30	04/27/22 07:09	10.57g/5mL	10g/5mL	0.95
<u>Batch: 22D1071</u>							
A2D0663-24	Soil	NWTPH-Dx	04/14/22 12:00	04/28/22 07:37	10.36g/5mL	10g/5mL	0.97
A2D0663-32	Soil	NWTPH-Dx	04/14/22 11:00	04/28/22 07:37	10.39g/5mL	10g/5mL	0.96
A2D0663-40	Soil	NWTPH-Dx	04/14/22 13:00	04/28/22 07:37	10.48g/5mL	10g/5mL	0.95
A2D0663-42	Soil	NWTPH-Dx	04/14/22 14:00	04/28/22 07:37	10.19g/5mL	10g/5mL	0.98
<u>Batch: 22D1114</u>							
A2D0663-30	Soil	NWTPH-Dx	04/15/22 12:00	04/29/22 07:21	10.03g/5mL	10g/5mL	1.00
A2D0663-36	Soil	NWTPH-Dx	04/15/22 13:00	04/29/22 07:21	10.84g/5mL	10g/5mL	0.92
A2D0663-38	Soil	NWTPH-Dx	04/16/22 08:20	04/29/22 07:21	10.88g/5mL	10g/5mL	0.92

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

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 22D0741</u>							
A2D0663-44	Water	NWTPH-Gx (MS)	04/11/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-45	Water	NWTPH-Gx (MS)	04/12/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-46	Water	NWTPH-Gx (MS)	04/13/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-47	Water	NWTPH-Gx (MS)	04/13/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-48	Water	NWTPH-Gx (MS)	04/14/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-49	Water	NWTPH-Gx (MS)	04/15/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-50	Water	NWTPH-Gx (MS)	04/16/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-51	Water	NWTPH-Gx (MS)	04/16/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-52	Water	NWTPH-Gx (MS)	04/16/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
<u>Batch: 22D0770</u>							
A2D0663-13RE1	Water	NWTPH-Gx (MS)	04/12/22 10:00	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-14RE1	Water	NWTPH-Gx (MS)	04/13/22 11:30	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-15RE1	Water	NWTPH-Gx (MS)	04/12/22 11:30	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-16RE1	Water	NWTPH-Gx (MS)	04/12/22 13:00	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-17RE1	Water	NWTPH-Gx (MS)	04/12/22 14:15	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-18RE1	Water	NWTPH-Gx (MS)	04/12/22 15:20	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-19RE1	Water	NWTPH-Gx (MS)	04/12/22 16:45	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-20RE1	Water	NWTPH-Gx (MS)	04/13/22 09:30	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-22RE1	Water	NWTPH-Gx (MS)	04/13/22 09:45	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00

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SAMPLE PREPARATION INFORMATION

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

Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A2D0663-43RE1	Water	NWTPH-Gx (MS)	04/13/22 12:00	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00

Prep: EPA 5035A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor

Batch: 22D0773							
A2D0663-01	Soil	NWTPH-Gx (MS)	04/11/22 10:20	04/11/22 10:20	6.22g/5mL	5g/5mL	0.80
A2D0663-02	Soil	NWTPH-Gx (MS)	04/12/22 16:45	04/12/22 16:45	4.99g/5mL	5g/5mL	1.00
A2D0663-03	Soil	NWTPH-Gx (MS)	04/12/22 17:00	04/12/22 17:00	5.19g/5mL	5g/5mL	0.96
A2D0663-04	Soil	NWTPH-Gx (MS)	04/11/22 11:20	04/11/22 11:20	4.58g/5mL	5g/5mL	1.09
A2D0663-05	Soil	NWTPH-Gx (MS)	04/11/22 11:25	04/11/22 11:25	3.58g/5mL	5g/5mL	1.40
A2D0663-06	Soil	NWTPH-Gx (MS)	04/11/22 16:30	04/19/22 10:32	5.56g/5mL	5g/5mL	0.90
A2D0663-07	Soil	NWTPH-Gx (MS)	04/11/22 12:25	04/11/22 12:25	5.81g/5mL	5g/5mL	0.86
A2D0663-08	Soil	NWTPH-Gx (MS)	04/11/22 12:30	04/11/22 12:30	5.14g/5mL	5g/5mL	0.97
A2D0663-09	Soil	NWTPH-Gx (MS)	04/11/22 15:00	04/11/22 15:00	6.74g/5mL	5g/5mL	0.74
A2D0663-10	Soil	NWTPH-Gx (MS)	04/11/22 13:20	04/11/22 13:20	5.06g/5mL	5g/5mL	0.99
A2D0663-11	Soil	NWTPH-Gx (MS)	04/11/22 13:25	04/11/22 13:25	6.11g/5mL	5g/5mL	0.82
A2D0663-12	Soil	NWTPH-Gx (MS)	04/11/22 15:45	04/11/22 15:45	6.01g/5mL	5g/5mL	0.83
A2D0663-21	Soil	NWTPH-Gx (MS)	04/11/22 00:00	04/19/22 10:32	5.57g/5mL	5g/5mL	0.90

Batch: 22D0831							
A2D0663-23	Soil	NWTPH-Gx (MS)	04/14/22 12:00	04/14/22 12:00	204.47g/250mL	5g/5mL	1.22
A2D0663-25	Soil	NWTPH-Gx (MS)	04/12/22 15:00	04/12/22 15:00	246.57g/250mL	5g/5mL	1.01
A2D0663-27	Soil	NWTPH-Gx (MS)	04/13/22 11:50	04/13/22 11:50	242.42g/250mL	5g/5mL	1.03
A2D0663-29	Soil	NWTPH-Gx (MS)	04/15/22 12:00	04/15/22 12:00	247.18g/250mL	5g/5mL	1.01
A2D0663-31	Soil	NWTPH-Gx (MS)	04/14/22 11:00	04/14/22 11:00	273.34g/250mL	5g/5mL	0.92
A2D0663-33	Soil	NWTPH-Gx (MS)	04/13/22 16:30	04/13/22 16:30	249.22g/250mL	5g/5mL	1.00
A2D0663-35	Soil	NWTPH-Gx (MS)	04/15/22 13:00	04/15/22 13:00	172.99g/250mL	5g/5mL	1.45
A2D0663-37	Soil	NWTPH-Gx (MS)	04/16/22 08:20	04/16/22 08:20	223.58g/250mL	5g/5mL	1.12
A2D0663-39	Soil	NWTPH-Gx (MS)	04/14/22 13:00	04/14/22 13:00	189.5g/250mL	5g/5mL	1.32
A2D0663-41	Soil	NWTPH-Gx (MS)	04/14/22 14:00	04/14/22 14:00	183.14g/250mL	5g/5mL	1.37

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030B					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 22D0741							
A2D0663-44	Water	EPA 8260D	04/11/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-45	Water	EPA 8260D	04/12/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00

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SAMPLE PREPARATION INFORMATION

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2D0663-46	Water	EPA 8260D	04/13/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-47	Water	EPA 8260D	04/13/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-48	Water	EPA 8260D	04/14/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-49	Water	EPA 8260D	04/15/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-50	Water	EPA 8260D	04/16/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-51	Water	EPA 8260D	04/16/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00
A2D0663-52	Water	EPA 8260D	04/16/22 00:00	04/19/22 15:52	5mL/5mL	5mL/5mL	1.00

Batch: 22D0770

A2D0663-13RE1	Water	EPA 8260D	04/12/22 10:00	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-14RE1	Water	EPA 8260D	04/13/22 11:30	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-15RE1	Water	EPA 8260D	04/12/22 11:30	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-16RE1	Water	EPA 8260D	04/12/22 13:00	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-17RE1	Water	EPA 8260D	04/12/22 14:15	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-18RE1	Water	EPA 8260D	04/12/22 15:20	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-19RE1	Water	EPA 8260D	04/12/22 16:45	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-20RE1	Water	EPA 8260D	04/13/22 09:30	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-22RE1	Water	EPA 8260D	04/13/22 09:45	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00
A2D0663-43RE1	Water	EPA 8260D	04/13/22 12:00	04/20/22 15:57	5mL/5mL	5mL/5mL	1.00

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2D0663-01	Soil	5035A/8260D	04/11/22 10:20	04/11/22 10:20	6.22g/5mL	5g/5mL	0.80
A2D0663-02	Soil	5035A/8260D	04/12/22 16:45	04/12/22 16:45	4.99g/5mL	5g/5mL	1.00
A2D0663-03	Soil	5035A/8260D	04/12/22 17:00	04/12/22 17:00	5.19g/5mL	5g/5mL	0.96
A2D0663-04	Soil	5035A/8260D	04/11/22 11:20	04/11/22 11:20	4.58g/5mL	5g/5mL	1.09
A2D0663-05	Soil	5035A/8260D	04/11/22 11:25	04/11/22 11:25	3.58g/5mL	5g/5mL	1.40
A2D0663-06	Soil	5035A/8260D	04/11/22 16:30	04/19/22 10:32	5.56g/5mL	5g/5mL	0.90
A2D0663-07	Soil	5035A/8260D	04/11/22 12:25	04/11/22 12:25	5.81g/5mL	5g/5mL	0.86
A2D0663-08	Soil	5035A/8260D	04/11/22 12:30	04/11/22 12:30	5.14g/5mL	5g/5mL	0.97
A2D0663-09	Soil	5035A/8260D	04/11/22 15:00	04/11/22 15:00	6.74g/5mL	5g/5mL	0.74
A2D0663-10	Soil	5035A/8260D	04/11/22 13:20	04/11/22 13:20	5.06g/5mL	5g/5mL	0.99
A2D0663-11	Soil	5035A/8260D	04/11/22 13:25	04/11/22 13:25	6.11g/5mL	5g/5mL	0.82
A2D0663-12	Soil	5035A/8260D	04/11/22 15:45	04/11/22 15:45	6.01g/5mL	5g/5mL	0.83
A2D0663-21	Soil	5035A/8260D	04/11/22 00:00	04/19/22 10:32	5.57g/5mL	5g/5mL	0.90

Batch: 22D0831

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Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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SAMPLE PREPARATION INFORMATION

Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A2D0663-23	Soil	5035A/8260D	04/14/22 12:00	04/14/22 12:00	204.47g/250mL	5g/5mL	1.22
A2D0663-25	Soil	5035A/8260D	04/12/22 15:00	04/12/22 15:00	246.57g/250mL	5g/5mL	1.01
A2D0663-27	Soil	5035A/8260D	04/13/22 11:50	04/13/22 11:50	242.42g/250mL	5g/5mL	1.03
A2D0663-29	Soil	5035A/8260D	04/15/22 12:00	04/15/22 12:00	247.18g/250mL	5g/5mL	1.01
A2D0663-31	Soil	5035A/8260D	04/14/22 11:00	04/14/22 11:00	273.34g/250mL	5g/5mL	0.92
A2D0663-33	Soil	5035A/8260D	04/13/22 16:30	04/13/22 16:30	249.22g/250mL	5g/5mL	1.00
A2D0663-35	Soil	5035A/8260D	04/15/22 13:00	04/15/22 13:00	172.99g/250mL	5g/5mL	1.45
A2D0663-37	Soil	5035A/8260D	04/16/22 08:20	04/16/22 08:20	223.58g/250mL	5g/5mL	1.12
A2D0663-39	Soil	5035A/8260D	04/14/22 13:00	04/14/22 13:00	189.5g/250mL	5g/5mL	1.32
A2D0663-41	Soil	5035A/8260D	04/14/22 14:00	04/14/22 14:00	183.14g/250mL	5g/5mL	1.37

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 22D1025							
A2D0663-07	Soil	EPA 8082A	04/11/22 12:25	04/27/22 11:09	10.14g/5mL	10g/5mL	0.99
A2D0663-08	Soil	EPA 8082A	04/11/22 12:30	04/27/22 11:09	10.05g/5mL	10g/5mL	1.00
A2D0663-09	Soil	EPA 8082A	04/11/22 15:00	04/27/22 11:09	10.24g/5mL	10g/5mL	0.98
A2D0663-10	Soil	EPA 8082A	04/11/22 13:20	04/27/22 11:09	10.61g/5mL	10g/5mL	0.94
A2D0663-11	Soil	EPA 8082A	04/11/22 13:25	04/27/22 11:09	10.16g/5mL	10g/5mL	0.98
A2D0663-12	Soil	EPA 8082A	04/11/22 15:45	04/27/22 11:09	10.2g/5mL	10g/5mL	0.98
A2D0663-21	Soil	EPA 8082A	04/11/22 00:00	04/27/22 11:09	10.59g/5mL	10g/5mL	0.94

Batch: 22D1069

A2D0663-01	Soil	EPA 8082A	04/11/22 10:20	04/28/22 10:47	10.73g/5mL	10g/5mL	0.93
A2D0663-02	Soil	EPA 8082A	04/12/22 16:45	04/28/22 10:47	10.64g/5mL	10g/5mL	0.94
A2D0663-03	Soil	EPA 8082A	04/12/22 17:00	04/28/22 10:47	10.75g/5mL	10g/5mL	0.93
A2D0663-04	Soil	EPA 8082A	04/11/22 11:20	04/28/22 10:47	10.18g/5mL	10g/5mL	0.98
A2D0663-05	Soil	EPA 8082A	04/11/22 11:25	04/28/22 10:47	10.4g/5mL	10g/5mL	0.96
A2D0663-06	Soil	EPA 8082A	04/11/22 16:30	04/28/22 10:47	10.36g/5mL	10g/5mL	0.97
A2D0663-24	Soil	EPA 8082A	04/14/22 12:00	04/28/22 10:47	10.74g/5mL	10g/5mL	0.93
A2D0663-26	Soil	EPA 8082A	04/12/22 15:00	04/28/22 10:47	10.03g/5mL	10g/5mL	1.00
A2D0663-28	Soil	EPA 8082A	04/13/22 11:50	04/28/22 10:47	10.42g/5mL	10g/5mL	0.96
A2D0663-30	Soil	EPA 8082A	04/15/22 12:00	04/28/22 10:47	10.95g/5mL	10g/5mL	0.91
A2D0663-32	Soil	EPA 8082A	04/14/22 11:00	04/28/22 10:47	10.88g/5mL	10g/5mL	0.92
A2D0663-34	Soil	EPA 8082A	04/13/22 16:30	04/28/22 10:47	10.28g/5mL	10g/5mL	0.97
A2D0663-36	Soil	EPA 8082A	04/15/22 13:00	04/28/22 10:47	10.63g/5mL	10g/5mL	0.94

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SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

<u>Prep: EPA 3546</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A2D0663-38	Soil	EPA 8082A	04/16/22 08:20	04/28/22 10:47	10.23g/5mL	10g/5mL	0.98
A2D0663-40	Soil	EPA 8082A	04/14/22 13:00	04/28/22 10:47	10.48g/5mL	10g/5mL	0.95
A2D0663-42	Soil	EPA 8082A	04/14/22 14:00	04/28/22 10:47	10.81g/5mL	10g/5mL	0.93

Semivolatile Organic Compounds by EPA 8270E

<u>Prep: EPA 3510C (Acid/Base Neutral)</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 22D0716</u>							
A2D0663-13	Water	EPA 8270E	04/12/22 10:00	04/19/22 12:02	950mL/1mL	1000mL/1mL	1.05
A2D0663-14	Water	EPA 8270E	04/13/22 11:30	04/19/22 12:02	1000mL/1mL	1000mL/1mL	1.00
A2D0663-14RE1	Water	EPA 8270E	04/13/22 11:30	04/19/22 12:02	1000mL/1mL	1000mL/1mL	1.00
A2D0663-15	Water	EPA 8270E	04/12/22 11:30	04/19/22 12:02	850mL/1mL	1000mL/1mL	1.18
A2D0663-15RE1	Water	EPA 8270E	04/12/22 11:30	04/19/22 12:02	850mL/1mL	1000mL/1mL	1.18
A2D0663-16	Water	EPA 8270E	04/12/22 13:00	04/19/22 12:02	940mL/1mL	1000mL/1mL	1.06
A2D0663-16RE1	Water	EPA 8270E	04/12/22 13:00	04/19/22 12:02	940mL/1mL	1000mL/1mL	1.06
A2D0663-17	Water	EPA 8270E	04/12/22 14:15	04/19/22 12:02	930mL/1mL	1000mL/1mL	1.08
A2D0663-17RE1	Water	EPA 8270E	04/12/22 14:15	04/19/22 12:02	930mL/1mL	1000mL/1mL	1.08
A2D0663-18RE1	Water	EPA 8270E	04/12/22 15:20	04/19/22 12:02	980mL/1mL	1000mL/1mL	1.02
A2D0663-18RE2	Water	EPA 8270E	04/12/22 15:20	04/19/22 12:02	980mL/1mL	1000mL/1mL	1.02
A2D0663-19RE1	Water	EPA 8270E	04/12/22 16:45	04/19/22 12:02	680mL/1mL	1000mL/1mL	1.47
A2D0663-19RE2	Water	EPA 8270E	04/12/22 16:45	04/19/22 12:02	680mL/1mL	1000mL/1mL	1.47
A2D0663-20RE1	Water	EPA 8270E	04/13/22 09:30	04/19/22 12:02	1010mL/1mL	1000mL/1mL	0.99
A2D0663-20RE2	Water	EPA 8270E	04/13/22 09:30	04/19/22 12:02	1010mL/1mL	1000mL/1mL	0.99
A2D0663-22RE1	Water	EPA 8270E	04/13/22 09:45	04/19/22 12:02	910mL/1mL	1000mL/1mL	1.10
A2D0663-22RE2	Water	EPA 8270E	04/13/22 09:45	04/19/22 12:02	910mL/1mL	1000mL/1mL	1.10
A2D0663-43	Water	EPA 8270E	04/13/22 12:00	04/19/22 12:02	910mL/1mL	1000mL/1mL	1.10
A2D0663-43RE1	Water	EPA 8270E	04/13/22 12:00	04/19/22 12:02	910mL/1mL	1000mL/1mL	1.10

<u>Prep: EPA 3546</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 22D0861</u>							
A2D0663-01RE1	Soil	EPA 8270E	04/11/22 10:20	04/22/22 06:56	15.79g/2mL	15g/2mL	0.95
A2D0663-02	Soil	EPA 8270E	04/12/22 16:45	04/22/22 06:56	15.69g/2mL	15g/2mL	0.96
A2D0663-03RE1	Soil	EPA 8270E	04/12/22 17:00	04/22/22 06:56	15.83g/2mL	15g/2mL	0.95
A2D0663-04RE1	Soil	EPA 8270E	04/11/22 11:20	04/22/22 06:56	15.31g/2mL	15g/2mL	0.98
A2D0663-05	Soil	EPA 8270E	04/11/22 11:25	04/22/22 06:56	15.09g/2mL	15g/2mL	0.99

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SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A2D0663-06RE1	Soil	EPA 8270E	04/11/22 16:30	04/22/22 06:56	15.25g/2mL	15g/2mL	0.98
A2D0663-07	Soil	EPA 8270E	04/11/22 12:25	04/22/22 06:56	15.29g/2mL	15g/2mL	0.98
A2D0663-08RE1	Soil	EPA 8270E	04/11/22 12:30	04/22/22 06:56	15.53g/2mL	15g/2mL	0.97
A2D0663-09	Soil	EPA 8270E	04/11/22 15:00	04/22/22 06:56	15.89g/2mL	15g/2mL	0.94
A2D0663-10RE1	Soil	EPA 8270E	04/11/22 13:20	04/22/22 06:56	15.38g/2mL	15g/2mL	0.98
A2D0663-11RE1	Soil	EPA 8270E	04/11/22 13:25	04/22/22 06:56	15.66g/2mL	15g/2mL	0.96
A2D0663-12RE2	Soil	EPA 8270E	04/11/22 15:45	04/22/22 06:56	15.54g/2mL	15g/2mL	0.97
A2D0663-21RE1	Soil	EPA 8270E	04/11/22 00:00	04/22/22 06:56	15.45g/2mL	15g/2mL	0.97
Batch: 22D0935							
A2D0663-26RE1	Soil	EPA 8270E	04/12/22 15:00	04/25/22 11:47	15.2g/2mL	15g/2mL	0.99
A2D0663-28RE1	Soil	EPA 8270E	04/13/22 11:50	04/25/22 11:47	15.01g/2mL	15g/2mL	1.00
A2D0663-34RE1	Soil	EPA 8270E	04/13/22 16:30	04/25/22 11:47	15.41g/2mL	15g/2mL	0.97
Batch: 22D1068							
A2D0663-24RE1	Soil	EPA 8270E	04/14/22 12:00	04/28/22 07:28	15.8g/2mL	15g/2mL	0.95
A2D0663-30	Soil	EPA 8270E	04/15/22 12:00	04/28/22 10:46	15.58g/2mL	15g/2mL	0.96
A2D0663-32	Soil	EPA 8270E	04/14/22 11:00	04/28/22 07:28	15.75g/2mL	15g/2mL	0.95
A2D0663-36	Soil	EPA 8270E	04/15/22 13:00	04/28/22 10:46	15.29g/2mL	15g/2mL	0.98
A2D0663-38	Soil	EPA 8270E	04/16/22 08:20	04/28/22 10:46	15.84g/2mL	15g/2mL	0.95
A2D0663-40	Soil	EPA 8270E	04/14/22 13:00	04/28/22 07:28	15.31g/2mL	15g/2mL	0.98
A2D0663-42	Soil	EPA 8270E	04/14/22 14:00	04/28/22 07:28	15.04g/2mL	15g/2mL	1.00

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 22E0126							
A2D0663-13	Water	EPA 6020B	04/12/22 10:00	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
A2D0663-14	Water	EPA 6020B	04/13/22 11:30	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
A2D0663-15	Water	EPA 6020B	04/12/22 11:30	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
A2D0663-16	Water	EPA 6020B	04/12/22 13:00	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
A2D0663-17	Water	EPA 6020B	04/12/22 14:15	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
A2D0663-18	Water	EPA 6020B	04/12/22 15:20	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
A2D0663-19	Water	EPA 6020B	04/12/22 16:45	05/04/22 09:20	45mL/50mL	45mL/50mL	1.00
Batch: 22E0222							
A2D0663-20	Water	EPA 6020B	04/13/22 09:30	05/06/22 12:00	45mL/50mL	45mL/50mL	1.00
A2D0663-22	Water	EPA 6020B	04/13/22 09:45	05/06/22 12:00	45mL/50mL	45mL/50mL	1.00

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SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A2D0663-43	Water	EPA 6020B	04/13/22 12:00	05/06/22 12:00	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor

Batch: 22D1163							
A2D0663-01	Soil	EPA 6020B	04/11/22 10:20	04/30/22 16:10	0.455g/50mL	0.5g/50mL	1.10
A2D0663-02	Soil	EPA 6020B	04/12/22 16:45	04/30/22 16:10	0.505g/50mL	0.5g/50mL	0.99
A2D0663-03	Soil	EPA 6020B	04/12/22 17:00	04/30/22 16:10	0.501g/50mL	0.5g/50mL	1.00
A2D0663-04	Soil	EPA 6020B	04/11/22 11:20	04/30/22 16:10	0.508g/50mL	0.5g/50mL	0.98
A2D0663-05	Soil	EPA 6020B	04/11/22 11:25	04/30/22 16:10	0.481g/50mL	0.5g/50mL	1.04
A2D0663-06	Soil	EPA 6020B	04/11/22 16:30	04/30/22 16:10	0.506g/50mL	0.5g/50mL	0.99
A2D0663-07	Soil	EPA 6020B	04/11/22 12:25	04/30/22 16:10	0.498g/50mL	0.5g/50mL	1.00
A2D0663-08	Soil	EPA 6020B	04/11/22 12:30	04/30/22 16:10	0.491g/50mL	0.5g/50mL	1.02
A2D0663-09	Soil	EPA 6020B	04/11/22 15:00	04/30/22 16:10	0.5g/50mL	0.5g/50mL	1.00
A2D0663-10	Soil	EPA 6020B	04/11/22 13:20	04/30/22 16:10	0.476g/50mL	0.5g/50mL	1.05
A2D0663-11	Soil	EPA 6020B	04/11/22 13:25	04/30/22 16:10	0.475g/50mL	0.5g/50mL	1.05
A2D0663-12	Soil	EPA 6020B	04/11/22 15:45	04/30/22 16:10	0.464g/50mL	0.5g/50mL	1.08
A2D0663-21	Soil	EPA 6020B	04/11/22 00:00	04/30/22 16:10	0.499g/50mL	0.5g/50mL	1.00
A2D0663-24	Soil	EPA 6020B	04/14/22 12:00	04/30/22 16:10	0.498g/50mL	0.5g/50mL	1.00
A2D0663-26	Soil	EPA 6020B	04/12/22 15:00	04/30/22 16:10	0.495g/50mL	0.5g/50mL	1.01
A2D0663-28	Soil	EPA 6020B	04/13/22 11:50	04/30/22 16:10	0.513g/50mL	0.5g/50mL	0.98
A2D0663-30	Soil	EPA 6020B	04/15/22 12:00	04/30/22 16:10	0.481g/50mL	0.5g/50mL	1.04
A2D0663-32	Soil	EPA 6020B	04/14/22 11:00	04/30/22 16:10	0.47g/50mL	0.5g/50mL	1.06
A2D0663-34	Soil	EPA 6020B	04/13/22 16:30	04/30/22 16:10	0.511g/50mL	0.5g/50mL	0.98

Batch: 22D1164							
A2D0663-36	Soil	EPA 6020B	04/15/22 13:00	05/02/22 15:00	0.514g/50mL	0.5g/50mL	0.97
A2D0663-38	Soil	EPA 6020B	04/16/22 08:20	05/02/22 15:00	0.499g/50mL	0.5g/50mL	1.00
A2D0663-40	Soil	EPA 6020B	04/14/22 13:00	05/02/22 15:00	0.455g/50mL	0.5g/50mL	1.10
A2D0663-42	Soil	EPA 6020B	04/14/22 14:00	05/02/22 15:00	0.519g/50mL	0.5g/50mL	0.96

Dissolved Metals by EPA 6020B (ICPMS)

Prep: Matrix Matched Direct Inject					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 22D0782							
A2D0663-13	Water	EPA 6020B (Diss)	04/12/22 10:00	04/20/22 12:40	45mL/50mL	45mL/50mL	1.00
A2D0663-14	Water	EPA 6020B (Diss)	04/13/22 11:30	04/20/22 12:40	45mL/50mL	45mL/50mL	1.00

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SAMPLE PREPARATION INFORMATION

Dissolved Metals by EPA 6020B (ICPMS)

<u>Prep: Matrix Matched Direct Inject</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
A2D0663-15	Water	EPA 6020B (Diss)	04/12/22 11:30	04/20/22 12:40	45mL/50mL	45mL/50mL	1.00
A2D0663-18	Water	EPA 6020B (Diss)	04/12/22 15:20	04/20/22 12:40	45mL/50mL	45mL/50mL	1.00
<u>Batch: 22D1142</u>							
A2D0663-16	Water	EPA 6020B (Diss)	04/12/22 13:00	04/29/22 13:16	45mL/50mL	45mL/50mL	1.00
A2D0663-17	Water	EPA 6020B (Diss)	04/12/22 14:15	04/29/22 13:16	45mL/50mL	45mL/50mL	1.00
A2D0663-19	Water	EPA 6020B (Diss)	04/12/22 16:45	04/29/22 13:16	45mL/50mL	45mL/50mL	1.00
A2D0663-20	Water	EPA 6020B (Diss)	04/13/22 09:30	04/29/22 13:16	45mL/50mL	45mL/50mL	1.00
A2D0663-22	Water	EPA 6020B (Diss)	04/13/22 09:45	04/29/22 13:16	45mL/50mL	45mL/50mL	1.00
A2D0663-43	Water	EPA 6020B (Diss)	04/13/22 12:00	04/29/22 13:16	45mL/50mL	45mL/50mL	1.00

Percent Dry Weight

<u>Prep: Total Solids (Dry Weight)</u>					Sample	Default	RL Prep
Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
<u>Batch: 22D0779</u>							
A2D0663-01	Soil	EPA 8000D	04/11/22 10:20	04/20/22 12:14			NA
A2D0663-02	Soil	EPA 8000D	04/12/22 16:45	04/20/22 12:14			NA
A2D0663-03	Soil	EPA 8000D	04/12/22 17:00	04/20/22 12:14			NA
A2D0663-04	Soil	EPA 8000D	04/11/22 11:20	04/20/22 12:14			NA
A2D0663-05	Soil	EPA 8000D	04/11/22 11:25	04/20/22 12:14			NA
A2D0663-06	Soil	EPA 8000D	04/11/22 16:30	04/20/22 12:14			NA
A2D0663-07	Soil	EPA 8000D	04/11/22 12:25	04/20/22 12:14			NA
A2D0663-08	Soil	EPA 8000D	04/11/22 12:30	04/20/22 12:14			NA
A2D0663-09	Soil	EPA 8000D	04/11/22 15:00	04/20/22 12:14			NA
A2D0663-10	Soil	EPA 8000D	04/11/22 13:20	04/20/22 12:14			NA
A2D0663-11	Soil	EPA 8000D	04/11/22 13:25	04/20/22 12:14			NA
A2D0663-12	Soil	EPA 8000D	04/11/22 15:45	04/20/22 12:14			NA
A2D0663-21	Soil	EPA 8000D	04/11/22 00:00	04/20/22 12:14			NA
A2D0663-23	Soil	EPA 8000D	04/14/22 12:00	04/20/22 12:14			NA
A2D0663-25	Soil	EPA 8000D	04/12/22 15:00	04/20/22 12:14			NA
A2D0663-27	Soil	EPA 8000D	04/13/22 11:50	04/20/22 12:14			NA
A2D0663-29	Soil	EPA 8000D	04/15/22 12:00	04/20/22 12:14			NA
A2D0663-31	Soil	EPA 8000D	04/14/22 11:00	04/20/22 12:14			NA
A2D0663-33	Soil	EPA 8000D	04/13/22 16:30	04/20/22 12:14			NA
A2D0663-35	Soil	EPA 8000D	04/15/22 13:00	04/20/22 12:14			NA
A2D0663-37	Soil	EPA 8000D	04/16/22 08:20	04/20/22 12:14			NA
A2D0663-39	Soil	EPA 8000D	04/14/22 13:00	04/20/22 12:14			NA

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Table with project details: Stantec Portland, Project: Ko' Kuel Wharf, Project Number: 185751418, Project Manager: Graeme Taylor, Report ID: A2D0663 - 05 17 22 1412

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Table with columns: Lab Number, Matrix, Method, Sampled, Prepared, Sample Initial/Final, Default Initial/Final, RL Prep Factor. Includes data for various lab numbers and a batch summary.

Apex Laboratories

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Handwritten signature of Philip Nerenberg

Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

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

Project: **Ko' Kuel Wharf**
Project Number: **185751418**
Project Manager: **Graeme Taylor**

Report ID:
A2D0663 - 05 17 22 1412

QUALIFIER DEFINITIONS

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

Apex Laboratories

- A-01** Due to preparation error, not all Batch QC samples were analyzed. The batch is accepted based on the recoveries of the Blank Spike (BS).
- B-02** Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- 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.
- E** Estimated Value. The result is above the calibration range of the instrument.
- F-03** The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
- F-11** The hydrocarbon pattern indicates possible weathered diesel, mineral oil, or a contribution from a related component.
- F-13** The chromatographic pattern does not resemble the fuel standard used for quantitation
- F-26** Result for Diesel (Diesel Range Organics, C12-C18) is due to overlap from Gasoline or a Gasoline Range product.
- ICV-01** Estimated Result. Initial Calibration Verification (ICV) failed high. There is no effect on non-detect results.
- ICV-02** Estimated Result. Initial Calibration Verification (ICV) failed low.
- J** Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
- M-05** Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
- P-12** Result estimated due to the presence of multiple PCB Aroclors and/or PCB congeners not defined as Aroclors.
- PRO** Sample has undergone sample processing prior to extraction and analysis.
- Q-01** Spike recovery and/or RPD is outside acceptance limits.
- Q-03** Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
- Q-04** Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-11** Spike recovery cannot be accurately quantified due to sample dilution required for high analyte concentration and/or matrix interference.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-17** RPD between original and duplicate sample is outside of established control limits.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-31** Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-37** Sample is non-homogenous. Sample results are less than MRL and duplicate results have hits greater than the MRL. See Duplicate results.

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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- 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.)
- Q-52** Due to known erratic recoveries, the result and reporting levels for this analyte are reported as Estimated Values. This analyte may not have passed all QC requirements for this method.
- Q-54** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +119%. The results are reported as Estimated Values.
- Q-54a** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +156%. The results are reported as Estimated Values.
- Q-54b** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +6%. The results are reported as Estimated Values.
- Q-54c** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +66%. The results are reported as Estimated Values.
- Q-54d** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.
- Q-54e** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -12%. The results are reported as Estimated Values.
- Q-54f** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -14%. The results are reported as Estimated Values.
- Q-54g** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -16%. The results are reported as Estimated Values.
- Q-54h** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -5%. The results are reported as Estimated Values.
- Q-54i** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -8%. The results are reported as Estimated Values.
- Q-54j** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -9%. The results are reported as Estimated Values.
- Q-55** Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
- Q-56** Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- S-03** Sample re-extract, or the analysis of an associated Batch QC sample, confirms surrogate failure due to sample matrix effect.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- S-06** Surrogate recovery is outside of established control limits.
- V-16** Sample aliquot was subsampled from the sample container in the laboratory. The subsampled aliquot was not preserved within 48 hours of sampling.

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

<u>Stantec Portland</u> 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	<u>Report ID:</u> A2D0663 - 05 17 22 1412
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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: <u>Ko' Kuel Wharf</u> Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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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) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

- " --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- " *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

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

Apex Laboratories

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Table with 3 columns: Client (Stantec Portland), Project (Ko' Kuel Wharf), and Report ID (A2D0663 - 05 17 22 1412)

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.

Handwritten signature of Philip Nerenberg



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Table with 3 columns: Client info (Stantec Portland), Project info (Ko' Kuel Wharf), and Report ID (A2D0663 - 05 17 22 1412).

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Table header with columns: 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 provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Handwritten signature of Philip Nerenberg

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Philip Nerenberg, Lab Director

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

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

CHAIN OF CUSTODY

Company: Stantec Project Mgr: [Signature]
 Address: SEE PAGE 1 Phone: _____ Email: _____

Lab # ADD 0663 COC 2 of 5

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ANALYSIS REQUEST													RECEIVED BY: Signature: _____ Date: _____																				
						NWTPH-HCID	NWTPH-DX	NWTPH-CX	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pest	RCA Metals (8)	Priority Metals (13)		Al, Sb, As, Ba, Bi, Br, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Ni, P, Se, Ag, Na, Ti, V, Zn	TOTAL DISS. TCLP	TCLP Metals (8)	Dioxins + Furans 1613	RCA Metals (8)															
SB07-3-6		4/11/22	1305	Soil	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
SB08-0-3		4/11/22	1545	Soil	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SB-1		4/12/22	1600	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
SB-2		4/13/22	1130	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SB-3		4/12/22	1130	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SB-4		4/12/22	1300	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SB-5		4/12/22	1415	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SB-6		4/12/22	1520	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SB-7		4/12/22	1645	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SB-8		4/13/22	0820	GW	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Normal Turn Around Time (TAT) = 10 Business Days

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

RELINQUISHED BY:
 Signature: [Signature] Date: 4/14/22
 Printed Name: Paul Somers Time: 1500
 Company: Stantec

RECEIVED BY:
 Signature: [Signature] Date: 4/18/22
 Printed Name: [Signature] Time: 1500
 Company: Apex

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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

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

Project: Ko' Kuel Wharf

Project Number: 185751418

Project Manager: Graeme Taylor

Report ID:

A2D0663 - 05 17 22 1412

Lab # 100063 COC 3 of 5

CHAIN OF CUSTODY

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

Form containing project details, analysis request table with columns for Lab ID, Date, Time, Matrix, # of Containers, and various chemical tests (e.g., WTPH-HCID, WTPH-GX, 8260 BTEX, 8260 RBDM VOCs, etc.), and a signature section for Relinquished and Received by.

Philip Nerenberg

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.

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

Project: **Ko' Kuel Wharf**
Project Number: **185751418**
Project Manager: **Graeme Taylor**

Report ID:
A2D0663 - 05 17 22 1412

CHAIN OF CUSTODY

APEX LABS

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

Lab # ADDONDS of 5
COC # 4

Company: <u>Stantec</u>		Project Name:		Project #:	
Address:		Phone:		PO #:	
Project Mgr:		Email:			

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-CID	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, Bi, Bz, Cd, Cr, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TOTAL DISS. TCLP	TCLP Metals (8)	Dioxins/Furans 1613	Archive
DU-Dup		4/14/22	1300	SA	3	X	X					X	X	X	X	X	X				X	
DU-TOP		4/14/22	1400	SA	3	X	X					X	X	X	X	X	X				X	
FB-041302		4/13/22	1200	GW	8	X	X					X	X	X	X	X	X				X	
TB-01		4/14/22		GW	1	X						X										
TB-02		4/14/22		GW	1	X						X										
TB-03		4/13/22		GW	1	X						X										
TB-04		4/13/22		GW	1	X						X										
TB-05		4/14/22		GW	1	X						X										
TB-06		4/15/22		GW	1	X						X										
TB-07		4/14/22		GW	1	X						X										

Normal Turn Around Time (TAT) = 10 Business Days				
TAT Requested (circle)	1 Day	2 Day	3 Day	Other:
			<u>(5D)</u>	

SAMPLES ARE HELD FOR 30 DAYS				
RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:	
Signature: <u>Philip Nerenberg</u>	Signature: <u>Paul Terry</u>	Signature:	Signature:	
Date: <u>4/14/22</u>	Date: <u>4/18/22</u>	Date:	Date:	
Printed Name: <u>Philip Nerenberg</u>	Printed Name: <u>Paul Terry</u>	Printed Name:	Printed Name:	
Time: <u>1500</u>	Time: <u>1500</u>	Time:	Time:	
Company: <u>Stantec</u>	Company: <u>Apex</u>	Company:	Company:	

Philip Nerenberg

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
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	WO# <i>A2D0663</i>
COC/Container Discrepancies	
COC Reads	Container Reads/Comments
SB02-03, SB02-3-7, SB04-0-3, SB05-0-5-3, SB05-3-10	1 of 2 jars received with loose lid and inudated with water into sample
SB08-0-3	2 of 2 jars received with loose lids and inudated with water into sample from cooler
SB04-0-3 4/11/22 @ 1630	no MeOH VAS labeled for this sample. Re-extracted in house as field MeOH VAS cannot be distinguished (4 provided with no info on labels)
SB-1 4/12/22 1000	labels rubbed off ^{on} 7 of 9 containers _{was 4/19/22}
SB-2 4/12/22 1130 - 4 containers	10 provided was 4/19/22
SB-3 4/12/22 1130	1 container reads SB-2, matched by date
SB-6 4/12/22 @ 1520	1 container reads date of 2-12-22.
SB-7 4/12/22 @ 1645	no time on 2 containers
DUP-01 4/11/22 no time	no time on containers. no MeOH VAS labeled for this sample - re-extracted in house.
DUP-X 4/13/22 @ 945	containers read ID of SB-X. Matched by date, time, matrix.
DU-01 4/14/22 @ 1700	no date or time on all containers.
DU-04 4/15/22 @ 1700	no time on 1 gallon jar
DU-07 4/15/22 @ 1300	containers read DU-7.
DU-08 4/14/22 @ 820	jar reads DU-8





ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	---

APEX LABS COOLER RECEIPT FORM

Client: Stantec Element WO#: A2 DD/163

Project/Project #: Ko' Kuel Wharf 185751418

Delivery Info:
 Date/time received: 4/18/22 @ 1500 By: WMS
 Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 4/18/22 @ 1500 By: WMS

Chain of Custody included? Yes No Custody seals? Yes No

Signed/dated by client? Yes No

Signed/dated by Apex? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>4.8</u>	<u>4.6</u>	<u>3.7</u>	<u>2.3</u>	<u>0.9</u>	<u>0.8</u>	<u>0.0</u>
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition:	<u>Good</u>						

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

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 4/19/22 @ 835 By: HAS

All samples intact? Yes No Comments: _____

Bottle labels/COCs agree? Yes No Comments: see discrepancies form

COC/container discrepancies form initiated? Yes No

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

Do VOA vials have visible headspace? Yes No NA

Comments: TP# 3081, SB-1, SB-7, SB-8: 1 of 3 headspace. SB-3, SB-4, DUP-X: 2 of 3 headspace.

Water samples: pH checked: Yes No NA pH appropriate? Yes No NA SB-7: 3 of 5 3rd unit.

Comments: _____

Additional information:

Labeled by: KRS Witness: [Signature] Cooler Inspected by: KRS

Philip Nerenberg



ANALYTICAL REPORT

Apex Laboratories, LLC

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

Stantec Portland 601 SW 2nd Ave Suite 1400 Portland, OR 97204	Project: Ko' Kuel Wharf Project Number: 185751418 Project Manager: Graeme Taylor	Report ID: A2D0663 - 05 17 22 1412
--	---	--

APEX LABS COOLER RECEIPT FORM

Client: stantec Element WO#: A2 D0663

Project/Project #: Ko' Kuel Wharf | 185751418

Delivery Info:
Date/time received: 4/18/22 @ 1500 By: ls
Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Date/time inspected: 4/18/22 @ 1500 By: ls

Chain of Custody included? Yes No Custody seals? Yes No

Signed/dated by client? Yes No

Signed/dated by Apex? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>2.1</u>	<u>1.7</u>	<u>0.9</u>				
Received on ice? (Y/N)	<u>Y</u>	<u>Y</u>	<u>Y</u>				
Temp. blanks? (Y/N)	<u>Y</u>	<u>Y</u>	<u>Y</u>				
Ice type: (Gel/Real/Other)	<u>Real</u>	<u>Real</u>	<u>Real</u>				
Condition:	<u>Good</u>	<u>Good</u>	<u>Good</u>				

Cooler out of temp? Possible reason why: _____

Green dots applied to out of temperature samples? Yes No

Out of temperature samples form initiated? Yes No

Sample Inspection: Date/time inspected: 4/19/22 @ 835 By: HAS

All samples intact? Yes No Comments: _____

Bottle labels/COCs agree? Yes No Comments: SEE FIRST CRF

COC/container discrepancies form initiated? Yes No

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

Do VOA vials have visible headspace? Yes No NA

Comments: _____

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

Comments: _____

Additional information: *see CRF #1*

Labeled by: KRS Witness: HAS 4/19/22 Cooler Inspected by: HAS

June 24, 2022

Mr. Philip Nerenburg
Apex Laboratories
6700 SW Sandburg Street
Portland, Oregon 97223

Re: 2022 IDIQ DXN & PCB
Work Order: 19712
SDG: A2D0663

Dear Mr. Nerenburg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 26, 2022. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins
Project Manager

Enclosures

SUBCONTRACT ORDER

Apex Laboratories

AS 4/19/22

A2D0663

CFA WO#19712

SENDING LABORATORY:

Apex Laboratories
 6700 S.W. Sandburg Street
 Tigard, OR 97223
 Phone: (503) 718-2323
 Fax: (503) 336-0745
 Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
 3306 Kitty Hawk Rd Suite 120
 Wilmington, NC 28405
 Phone : (910) 795-0421
 Fax: -

(AS)

Sample Name: SB01-0.5-3 Soil Sampled: 04/11/22 10:20 (A2D0663-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 10:20	
<i>Containers Supplied:</i> (B)4 oz Glass Jar			

8oz Jar was received with loose lids and inudat

Sample Name: SB02-0-3 Soil Sampled: 04/12/22 16:45 (A2D0663-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/12/23 16:45	
<i>Containers Supplied:</i> (B)4 oz Glass Jar			

4oz Jar was received with loose lids and inudat

Sample Name: SB02-3-7 Soil Sampled: 04/12/22 17:00 (A2D0663-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/12/23 17:00	
<i>Containers Supplied:</i> (B)4 oz Glass Jar			

Sample Name: SB03-0.5-3 Soil Sampled: 04/11/22 11:20 (A2D0663-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 11:20	
<i>Containers Supplied:</i> (B)4 oz Glass Jar			

standard TAT

Temp. = 4.0°C

<i>[Signature]</i>	<i>4/25/22</i>	Fed Ex (Shipper)	
Released By	Date	Received By	Date
Fed Ex (Shipper)		<i>[Signature]</i>	<i>4/29/22 10:49</i>
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

AB 4/11/22 A2D0663

CFA NO#19712

Analysis	Due	Expires	Comments
Sample Name: SB03-3-5 Soil Sampled: 04/11/22 11:25 (A2D0663-05)			
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 11:25	
Containers Supplied: (B)4 oz Glass Jar			

4oz Jar was received with loose lids and inudat

Analysis	Due	Expires	Comments
Sample Name: SB04-0-3 Soil Sampled: 04/11/22 16:30 (A2D0663-06)			
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 16:30	
Containers Supplied: (B)4 oz Glass Jar			

8oz Jar was received with loose lids and inudat

Analysis	Due	Expires	Comments
Sample Name: SB05-0.5-3 Soil Sampled: 04/11/22 12:25 (A2D0663-07)			
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 12:25	
Containers Supplied: (B)4 oz Glass Jar			

8oz Jar was received with loose lids and inudat

Analysis	Due	Expires	Comments
Sample Name: SB05-3-10 Soil Sampled: 04/11/22 12:30 (A2D0663-08)			
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 12:30	
Containers Supplied: (B)4 oz Glass Jar			

Analysis	Due	Expires	Comments
Sample Name: SB06-0-3 Soil Sampled: 04/11/22 15:00 (A2D0663-09)			
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 15:00	
Containers Supplied: (B)4 oz Glass Jar			

Analysis	Due	Expires	Comments
Sample Name: SB07-0.5-3 Soil Sampled: 04/11/22 13:20 (A2D0663-10)			
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 13:20	
Containers Supplied: (B)4 oz Glass Jar			

Standard TAT

temp. = 4.0°C

Released By <i>[Signature]</i>	Date <i>4/25/22</i>	Received By <i>[Signature]</i>	Date <i>4/24/22 10:49</i>
Fed Ex (Shipper)		Fed Ex (Shipper)	

SUBCONTRACT ORDER

Apex Laboratories

AB 4/19/22 A2D0663

CFA WO#19712

Analysis	Due	Expires	Soil	Sampled:	Comments
Sample Name: SB07-3-6					
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 13:25		04/11/22 13:25	(A2D0663-11)
Containers Supplied: (B)4 oz Glass Jar					

Analysis	Due	Expires	Soil	Sampled:	Comments
Sample Name: SB08-0-3					
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 15:45		04/11/22 15:45	(A2D0663-12)
Containers Supplied: (B)4 oz Glass Jar					
2/2 Jars received loose lids were inudated with					

Analysis	Due	Expires	Soil	Sampled:	Comments
Sample Name: DUP-01					
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/11/23 00:00		04/11/22 00:00	(A2D0663-21)
Containers Supplied: (B)4 oz Glass Jar					
No T on Conts. No info on MeOH Voas, in-hous					

Analysis	Due	Expires	Soil	Sampled:	Comments
Sample Name: DU-01					
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/14/23 12:00		04/14/22 12:00	(A2D0663-24)
Containers Supplied: (B)4 oz Glass Jar					
After Processing					

Analysis	Due	Expires	Soil	Sampled:	Comments
Sample Name: DU-02					
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/12/23 15:00		04/12/22 15:00	(A2D0663-26)
Containers Supplied: (B)4 oz Glass Jar					
After Processing					

Analysis	Due	Expires	Soil	Sampled:	Comments
Sample Name: DU-03					
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/12/23 11:50		04/12/22 11:50	(A2D0663-28)
Containers Supplied: (B)4 oz Glass Jar					
After Processing					

Standard TAT

Temp. = 4.0°C

Released By: [Signature] Date: 4/25/22

Received By: [Signature] Date: 4/24/22 10:49

Fed Ex (Shipper)

SUBCONTRACT ORDER

Apex Laboratories

OB 4/19/22 A2D0663

CFA WO#19712

Sample Name: DU-04		After Processing	
Analysis	Due	Soil Expires	Sampled: 04/15/22 12:00 (A2D0663-30)
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/15/23 12:00	
Containers Supplied: (B)4 oz Glass Jar			

Sample Name: DU-05		After Processing	
Analysis	Due	Soil Expires	Sampled: 04/14/22 11:00 (A2D0663-32)
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/14/23 11:00	
Containers Supplied: (B)4 oz Glass Jar			

Sample Name: DU-06		After Processing	
Analysis	Due	Soil Expires	Sampled: 04/13/22 16:30 (A2D0663-34)
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/13/23 16:30	
Containers Supplied: (B)4 oz Glass Jar			

Sample Name: DU-07		After Processing	
Analysis	Due	Soil Expires	Sampled: 04/15/22 13:00 (A2D0663-36)
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/15/23 13:00	
Containers Supplied: (B)4 oz Glass Jar			

Sample Name: DU-08		After Processing	
Analysis	Due	Soil Expires	Sampled: 04/16/22 08:20 (A2D0663-38)
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/16/23 08:20	
Containers Supplied: (B)4 oz Glass Jar			

Sample Name: DU-DUP		After Processing	
Analysis	Due	Soil Expires	Sampled: 04/14/22 13:00 (A2D0663-40)
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/14/23 13:00	
Containers Supplied: (B)4 oz Glass Jar			

Standard TAT

temp = 4.0°

Released By: [Signature] Date: 4/25/22

Received By: [Signature] Date: 4/26/22 10:49

Fed Ex (Shipper)

SUBCONTRACT ORDER

Apex Laboratories

OB 4/19/22 A2D0663

CFA WO #19712

Sample Name: DU-TRIP	After Processing		
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	05/02/22 17:00	04/14/23 14:00	Soil Sampled: 04/14/22 14:00 (A2D0663-42)
Containers Supplied: (B)4 oz Glass Jar			

Standard TAT

Temp = 4.0°

Released By *[Signature]* Date *4/29/22* Received By *[Signature]* Date *4/26/22 10:49*

Released By *[Signature]* Date *4/29/22* Received By *[Signature]* Date *4/26/22 10:49*

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: <u>Apex</u>	Work Order: <u>19712</u>
Shipping Company: <u>FedEx</u>	Date/Time Received: <u>4/26/22 10:49</u>

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			/
Samples identified as Foreign Soil?			/

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			/
Samples < 2x background?			/

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			/

Air Witness: _____

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	/			Circle Applicable: seals broken damaged container leaking container other(describe)
2 Custody seal/s present on cooler?			/	Seal intact? Yes No
3 Chain of Custody documents included with shipment?	/			
4 Samples requiring cold preservation within 0-6°C?	/			Preservation Method: ice bags loose ice blue ice dry ice none other (describe) Temperature Blank present: Yes <u>No</u> <u>4.1-0.1 = 4.00</u>
5 Aqueous samples found to have visible solids?			/	Sample IDs, containers affected:
5 Samples requiring chemical preservation at proper pH?			/	Sample IDs, containers affected and pH observed: If preservative added, Lot#:
7 Samples requiring preservation have no residual chlorine?			/	Sample IDs, containers affected: If preservative added, Lot#:
8 Samples received within holding time?	/			Sample IDs, tests affected: <u>A 20063-24-42 all have after processing on label</u>
9 Sample IDs on COC match IDs on containers?			/	Sample IDs, containers affected: <u>no 4/26/22</u>
10 Date & time of COC match date & time on containers?			/	Sample IDs, containers affected: <u>D4-03 date from signature label = 4/12/22</u>
11 Number of containers received match number indicated on COC?	/			List type and number of containers / Sample IDs, containers affected: <u>received 23-402 clear</u>
12 COC form is properly signed in relinquished/received sections?	/			

Comments:

High Resolution Dioxins and Furans Analysis

Case Narrative

**HDOX Case Narrative
Apex Laboratories (APEX)
SDG A2D0663
Work Order 19712**

Method/Analysis Information

Product: Dioxins/Furans by EPA Method 1613B in Solids
Analytical Method: EPA Method 1613B
Extraction Method: SW846 3540C
Analytical Batch Number: 49956, 49988
Clean Up Batch Number: 49951, 49987
Extraction Batch Number: 49950, 49986

Sample Analysis

Samples were received within temperature requirements at 4.0°C (19712001, 19712002, 19712003, 19712004, 19712005, 19712006, 19712007, 19712008, 19712009, 19712010, 19712011, 19712012, 19712013, 19712014, 19712015, 19712016, 19712017, 19712018, 19712019, 19712020, 19712021, 19712022, 19712023). The following samples were analyzed using the analytical protocol as established in EPA Method 1613B:

Sample ID	Client ID
12031929	Method Blank (MB)
12031930	Laboratory Control Sample (LCS)
12031931	Laboratory Control Sample Duplicate (LCSD)
12031956	Method Blank (MB)
12031957	Laboratory Control Sample (LCS)
12031958	Laboratory Control Sample Duplicate (LCSD)
12031959	19712011(SB07-3-6) Matrix Spike (MS)
12031960	19712011(SB07-3-6) Matrix Spike Duplicate (MSD)
19712001	SB01-0.5-3
19712002	SB02-0-3
19712003	SB02-3-7
19712004	SB03-0.5-3
19712005	SB03-3-5
19712006	SB04-0-3
19712007	SB05-0.5-3
19712008	SB05-3-10
19712009	SB06-0-3
19712010	SB07-0.5-3
19712011	SB07-3-6
19712012	SB08-0-3
19712013	DUP-01

19712014	DU-01
19712015	DU-02
19712016	DU-03
19712017	DU-04
19712018	DU-05
19712019	DU-06
19712020	DU-07
19712021	DU-08
19712022	DU-DUP
19712023	DU-TRIP

The samples in this SDG were analyzed on a "dry weight" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 20.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (CVS) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

Sample 19712011 (SB07-3-6)- Batch 49988 was selected for analysis as the matrix spike and matrix spike duplicate.

Matrix Spike (MS) Recovery Statement

The MS recoveries were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The relative percent differences (RPD) between each MS 12031959 (SB07-3-6) and MSD 12031960 (SB07-3-6)- Batch 49988 were not within the required acceptance limits. Sample data is validated based on acceptable LCS/LCSD results.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

For the reporting of 2,3,7,8-TCDF results, detections above the PQL are confirmed and reported from a secondary column. 2,3,7,8-TCDF was detected above the PQL in sample 19712013 (DUP-01)- Batch 49988, but produced a result below a high EDL resulting in a non-detect. The sample was confirmed on a secondary column and accepted by the lab based on an acceptable EDL in the confirmation analysis. Both analyses have been included in the report.

Miscellaneous Information

Manual Integrations

Certain standards and QC samples required manual integrations to correctly position the baseline

as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

Sample Preparation

No difficulties were encountered during sample preparation.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP750_2	Primary Dioxin Analysis	Dioxin Analysis	DB-5MS	60m x 0.25mm, 0.25um
HRP757_3	Confirmation Analysis	TCDF Confirmation	DB-225	30m x 0.25mm, 0.25um

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report for

APEX001 Apex Laboratories

Client SDG: A2D0663 CFA Work Order: 19712

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.

- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Alexis Finks

Date: 24 JUN 2022

Title: Data Validator

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712001	Date Collected: 04/11/2022 10:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 20.8
Client ID: SB01-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 13:45	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-2		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.94 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.114	pg/g	0.114	0.975
40321-76-4	1,2,3,7,8-PeCDD	U	0.180	pg/g	0.180	4.88
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.209	pg/g	0.209	4.88
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.205	pg/g	0.205	4.88
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.211	pg/g	0.211	4.88
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.808	pg/g	0.410	4.88
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJ	4.52	pg/g	1.13	9.75
51207-31-9	2,3,7,8-TCDF	U	0.132	pg/g	0.132	0.975
57117-41-6	1,2,3,7,8-PeCDF	U	0.155	pg/g	0.155	4.88
57117-31-4	2,3,4,7,8-PeCDF	U	0.148	pg/g	0.148	4.88
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.339	pg/g	0.183	4.88
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.187	pg/g	0.187	4.88
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.180	pg/g	0.180	4.88
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.279	pg/g	0.279	4.88
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJK	0.615	pg/g	0.230	4.88
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.404	pg/g	0.404	4.88
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	0.597	pg/g	0.416	9.75
41903-57-5	Total TeCDD	JK	0.263	pg/g	0.114	0.975
36088-22-9	Total PeCDD	JK	0.499	pg/g	0.180	4.88
34465-46-8	Total HxCDD	JK	1.23	pg/g	0.205	4.88
37871-00-4	Total HpCDD	J	1.84	pg/g	0.410	4.88
30402-14-3	Total TeCDF	JK	0.179	pg/g	0.132	0.975
30402-15-4	Total PeCDF	BJK	0.384	pg/g	0.0706	4.88
55684-94-1	Total HxCDF	BJ	0.339	pg/g	0.180	4.88
38998-75-3	Total HpCDF	BJK	0.615	pg/g	0.230	4.88
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0497	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.293	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		182	195	pg/g	93.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		176	195	pg/g	90.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	195	pg/g	83.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		164	195	pg/g	83.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		164	195	pg/g	84.0	(23%-140%)
13C-OCDD		273	390	pg/g	70.0	(17%-157%)
13C-2,3,7,8-TCDF		182	195	pg/g	93.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		170	195	pg/g	86.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		168	195	pg/g	86.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		160	195	pg/g	82.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		164	195	pg/g	83.8	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		171	195	pg/g	87.5	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	195	pg/g	81.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712001	Date Collected: 04/11/2022 10:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 20.8
Client ID: SB01-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 13:45	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-2		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.94 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			152	195	pg/g	77.8 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			148	195	pg/g	76.1 (26%-138%)
37Cl-2,3,7,8-TCDD			21.6	19.5	pg/g	111 (35%-197%)

Comments:

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712002	Date Collected: 04/12/2022 16:45	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 11.8
Client ID: SB02-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 14:35	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-3		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.42 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.195	pg/g	0.195	0.913
40321-76-4	1,2,3,7,8-PeCDD	JK	0.281	pg/g	0.186	4.57
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.352	pg/g	0.352	4.57
57653-85-7	1,2,3,6,7,8-HxCDD	JK	0.791	pg/g	0.327	4.57
19408-74-3	1,2,3,7,8,9-HxCDD	J	0.539	pg/g	0.343	4.57
35822-46-9	1,2,3,4,6,7,8-HpCDD		14.9	pg/g	1.09	4.57
3268-87-9	1,2,3,4,6,7,8,9-OCDD		105	pg/g	0.738	9.13
51207-31-9	2,3,7,8-TCDF	J	0.305	pg/g	0.214	0.913
57117-41-6	1,2,3,7,8-PeCDF	JK	0.257	pg/g	0.182	4.57
57117-31-4	2,3,4,7,8-PeCDF	J	0.267	pg/g	0.177	4.57
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.422	pg/g	0.210	4.57
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.349	pg/g	0.214	4.57
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.239	pg/g	0.219	4.57
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.312	pg/g	0.312	4.57
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK	3.37	pg/g	0.174	4.57
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.287	pg/g	0.287	4.57
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	7.73	pg/g	0.404	9.13
41903-57-5	Total TeCDD	JK	4.29	pg/g	0.195	0.913
36088-22-9	Total PeCDD	JK	5.47	pg/g	0.186	4.57
34465-46-8	Total HxCDD	JK	10.8	pg/g	0.327	4.57
37871-00-4	Total HpCDD		64.2	pg/g	1.09	4.57
30402-14-3	Total TeCDF	JK	2.22	pg/g	0.214	0.913
30402-15-4	Total PeCDF	BJK	2.73	pg/g	0.0467	4.57
55684-94-1	Total HxCDF	J	4.48	pg/g	0.210	4.57
38998-75-3	Total HpCDF	JK	9.43	pg/g	0.174	4.57
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.850	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.982	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		162	183	pg/g	88.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		171	183	pg/g	93.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		146	183	pg/g	80.0	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		146	183	pg/g	79.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		147	183	pg/g	80.5	(23%-140%)
13C-OCDD		268	365	pg/g	73.3	(17%-157%)
13C-2,3,7,8-TCDF		158	183	pg/g	86.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		159	183	pg/g	87.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		157	183	pg/g	86.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		139	183	pg/g	76.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		143	183	pg/g	78.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	183	pg/g	81.9	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	183	pg/g	77.6	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712002	Date Collected: 04/12/2022 16:45	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 11.8
Client ID: SB02-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 14:35	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-3		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.42 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			133	183	pg/g	72.8 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			136	183	pg/g	74.7 (26%-138%)
37Cl-2,3,7,8-TCDD			21.0	18.3	pg/g	115 (35%-197%)

- Comments:**
- B** The target analyte was detected in the associated blank.
 - J** Value is estimated
 - K** Estimated Maximum Possible Concentration
 - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712003	Date Collected: 04/12/2022 17:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 22.4
Client ID: SB02-3-7		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	Instrument: HRP750
Run Date: 05/27/2022 15:25	Analyst: CLP	Dilution: 1
Data File: A23MAY22B_10-4		
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 13.44 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.247	pg/g	0.247	0.959
40321-76-4	1,2,3,7,8-PeCDD	U	0.374	pg/g	0.374	4.80
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.437	pg/g	0.437	4.80
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.39	pg/g	0.430	4.80
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.439	pg/g	0.439	4.80
35822-46-9	1,2,3,4,6,7,8-HpCDD		19.0	pg/g	0.955	4.80
3268-87-9	1,2,3,4,6,7,8,9-OCDD		109	pg/g	1.15	9.59
51207-31-9	2,3,7,8-TCDF	J	0.491	pg/g	0.363	0.959
57117-41-6	1,2,3,7,8-PeCDF	JK	0.453	pg/g	0.366	4.80
57117-31-4	2,3,4,7,8-PeCDF	JK	0.595	pg/g	0.343	4.80
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.549	pg/g	0.378	4.80
57117-44-9	1,2,3,6,7,8-HxCDF	JK	0.435	pg/g	0.368	4.80
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.600	pg/g	0.363	4.80
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.602	pg/g	0.602	4.80
67562-39-4	1,2,3,4,6,7,8-HpCDF		5.80	pg/g	0.512	4.80
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.790	pg/g	0.790	4.80
39001-02-0	1,2,3,4,6,7,8,9-OCDF	K	9.86	pg/g	0.930	9.59
41903-57-5	Total TeCDD	JK	8.01	pg/g	0.247	0.959
36088-22-9	Total PeCDD	JK	9.66	pg/g	0.374	4.80
34465-46-8	Total HxCDD	JK	15.9	pg/g	0.430	4.80
37871-00-4	Total HpCDD		62.5	pg/g	0.955	4.80
30402-14-3	Total TeCDF	JK	4.92	pg/g	0.363	0.959
30402-15-4	Total PeCDF	JK	8.45	pg/g	0.0689	4.80
55684-94-1	Total HxCDF	JK	9.85	pg/g	0.363	4.80
38998-75-3	Total HpCDF		14.6	pg/g	0.512	4.80
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.822	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.21	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	192	pg/g	88.5	(25%-164%)
13C-1,2,3,7,8-PeCDD		175	192	pg/g	91.4	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		155	192	pg/g	80.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		156	192	pg/g	81.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		150	192	pg/g	78.4	(23%-140%)
13C-OCDD		274	384	pg/g	71.5	(17%-157%)
13C-2,3,7,8-TCDF		169	192	pg/g	88.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		161	192	pg/g	83.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		163	192	pg/g	84.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	192	pg/g	77.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		153	192	pg/g	79.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	192	pg/g	79.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		146	192	pg/g	76.4	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712003	Date Collected: 04/12/2022 17:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 22.4
Client ID: SB02-3-7		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 15:25	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-4		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 13.44 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			140	192	pg/g	72.8 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			138	192	pg/g	71.9 (26%-138%)
37Cl-2,3,7,8-TCDD			21.9	19.2	pg/g	114 (35%-197%)

Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712004	Date Collected: 04/11/2022 11:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 14.5
Client ID: SB03-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 16:15	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-5		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.39 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.158	pg/g	0.158	0.944
40321-76-4	1,2,3,7,8-PeCDD	U	0.285	pg/g	0.285	4.72
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.446	pg/g	0.446	4.72
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.451	pg/g	0.451	4.72
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.455	pg/g	0.455	4.72
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK	1.37	pg/g	0.587	4.72
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	7.62	pg/g	0.903	9.44
51207-31-9	2,3,7,8-TCDF	U	0.153	pg/g	0.153	0.944
57117-41-6	1,2,3,7,8-PeCDF	U	0.219	pg/g	0.219	4.72
57117-31-4	2,3,4,7,8-PeCDF	U	0.208	pg/g	0.208	4.72
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.300	pg/g	0.176	4.72
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.173	pg/g	0.173	4.72
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.175	pg/g	0.175	4.72
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.270	pg/g	0.270	4.72
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	0.234	pg/g	0.234	4.72
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.368	pg/g	0.368	4.72
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	0.948	pg/g	0.470	9.44
41903-57-5	Total TeCDD	J	0.807	pg/g	0.158	0.944
36088-22-9	Total PeCDD	J	1.68	pg/g	0.285	4.72
34465-46-8	Total HxCDD	J	1.01	pg/g	0.446	4.72
37871-00-4	Total HpCDD	JK	5.09	pg/g	0.587	4.72
30402-14-3	Total TeCDF	JK	0.366	pg/g	0.153	0.944
30402-15-4	Total PeCDF	BJK	0.523	pg/g	0.0565	4.72
55684-94-1	Total HxCDF	BJK	0.761	pg/g	0.173	4.72
38998-75-3	Total HpCDF	BJ	1.40	pg/g	0.234	4.72
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0463	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.412	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		181	189	pg/g	95.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		193	189	pg/g	102	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	189	pg/g	79.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		159	189	pg/g	83.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		153	189	pg/g	81.0	(23%-140%)
13C-OCDD		279	378	pg/g	73.8	(17%-157%)
13C-2,3,7,8-TCDF		167	189	pg/g	88.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		178	189	pg/g	94.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		175	189	pg/g	92.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		148	189	pg/g	78.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		150	189	pg/g	79.2	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		158	189	pg/g	83.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	189	pg/g	75.4	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712004	Date Collected: 04/11/2022 11:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 14.5
Client ID: SB03-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 16:15	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-5		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.39 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			143	189	pg/g	75.8 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			139	189	pg/g	73.7 (26%-138%)
37Cl-2,3,7,8-TCDD			21.5	18.9	pg/g	114 (35%-197%)

Comments:

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712005	Date Collected: 04/11/2022 11:25	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 19.3
Client ID: SB03-3-5		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 17:04	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-6		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.13 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.194	pg/g	0.194	1.02
40321-76-4	1,2,3,7,8-PeCDD	U	0.241	pg/g	0.241	5.10
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.374	pg/g	0.374	5.10
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.365	pg/g	0.365	5.10
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.374	pg/g	0.374	5.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.91	pg/g	0.643	5.10
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	8.53	pg/g	0.702	10.2
51207-31-9	2,3,7,8-TCDF	U	0.149	pg/g	0.149	1.02
57117-41-6	1,2,3,7,8-PeCDF	U	0.208	pg/g	0.208	5.10
57117-31-4	2,3,4,7,8-PeCDF	U	0.197	pg/g	0.197	5.10
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.132	pg/g	0.132	5.10
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.133	pg/g	0.133	5.10
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.167	pg/g	0.141	5.10
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.214	pg/g	0.214	5.10
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJK	0.629	pg/g	0.148	5.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.243	pg/g	0.243	5.10
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.513	pg/g	0.513	10.2
41903-57-5	Total TeCDD	JK	2.76	pg/g	0.194	1.02
36088-22-9	Total PeCDD	JK	3.57	pg/g	0.241	5.10
34465-46-8	Total HxCDD	JK	4.01	pg/g	0.365	5.10
37871-00-4	Total HpCDD	J	6.61	pg/g	0.643	5.10
30402-14-3	Total TeCDF	J	0.180	pg/g	0.149	1.02
30402-15-4	Total PeCDF	BJK	0.739	pg/g	0.0937	5.10
55684-94-1	Total HxCDF	BJK	0.562	pg/g	0.132	5.10
38998-75-3	Total HpCDF	BJK	0.629	pg/g	0.148	5.10
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0447	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.383	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		200	204	pg/g	98.1	(25%-164%)
13C-1,2,3,7,8-PeCDD		220	204	pg/g	108	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	204	pg/g	82.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	204	pg/g	86.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		176	204	pg/g	86.2	(23%-140%)
13C-OCDD		320	408	pg/g	78.3	(17%-157%)
13C-2,3,7,8-TCDF		188	204	pg/g	91.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		203	204	pg/g	99.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		199	204	pg/g	97.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		168	204	pg/g	82.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		171	204	pg/g	83.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		170	204	pg/g	83.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		166	204	pg/g	81.4	(29%-147%)

**Hi-Res Dioxins/Furans
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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712005	Date Collected: 04/11/2022 11:25	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 19.3
Client ID: SB03-3-5		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 17:04	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-6		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.13 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
		Acceptable Limits				
13C-1,2,3,4,6,7,8-HpCDF			159	204	pg/g	78.0
13C-1,2,3,4,7,8,9-HpCDF			160	204	pg/g	78.2
37Cl-2,3,7,8-TCDD			24.9	20.4	pg/g	122
						(28%-143%)
						(26%-138%)
						(35%-197%)

Comments:

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712006	Date Collected: 04/11/2022 16:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 26.5
Client ID: SB04-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 17:54	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-7		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 14.43 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.583	pg/g	0.445	0.943
40321-76-4	1,2,3,7,8-PeCDD	JK	2.49	pg/g	0.802	4.72
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.877	pg/g	0.877	4.72
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.17	pg/g	0.872	4.72
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.80	pg/g	0.887	4.72
35822-46-9	1,2,3,4,6,7,8-HpCDD	K	14.8	pg/g	0.949	4.72
3268-87-9	1,2,3,4,6,7,8,9-OCDD		64.6	pg/g	1.75	9.43
51207-31-9	2,3,7,8-TCDF		9.04	pg/g	1.03	0.943
57117-41-6	1,2,3,7,8-PeCDF	J	3.02	pg/g	0.977	4.72
57117-31-4	2,3,4,7,8-PeCDF	J	3.17	pg/g	0.930	4.72
70648-26-9	1,2,3,4,7,8-HxCDF		6.00	pg/g	0.843	4.72
57117-44-9	1,2,3,6,7,8-HxCDF	JK	2.22	pg/g	0.834	4.72
60851-34-5	2,3,4,6,7,8-HxCDF	JK	1.41	pg/g	0.887	4.72
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.35	pg/g	1.35	4.72
67562-39-4	1,2,3,4,6,7,8-HpCDF		13.4	pg/g	0.453	4.72
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.745	pg/g	0.745	4.72
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	6.93	pg/g	1.37	9.43
41903-57-5	Total TeCDD	JK	84.7	pg/g	0.445	0.943
36088-22-9	Total PeCDD	JK	70.6	pg/g	0.802	4.72
34465-46-8	Total HxCDD	J	58.4	pg/g	0.872	4.72
37871-00-4	Total HpCDD	K	32.8	pg/g	0.949	4.72
30402-14-3	Total TeCDF	K	120	pg/g	1.03	0.943
30402-15-4	Total PeCDF	JK	60.0	pg/g	0.114	4.72
55684-94-1	Total HxCDF	JK	23.8	pg/g	0.834	4.72
38998-75-3	Total HpCDF		20.1	pg/g	0.453	4.72
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		6.55	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		6.67	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		177	189	pg/g	93.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	189	pg/g	97.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		151	189	pg/g	80.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		155	189	pg/g	82.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		156	189	pg/g	82.6	(23%-140%)
13C-OCDD		283	377	pg/g	75.0	(17%-157%)
13C-2,3,7,8-TCDF		163	189	pg/g	86.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		168	189	pg/g	89.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		175	189	pg/g	92.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		147	189	pg/g	78.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		155	189	pg/g	82.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		156	189	pg/g	82.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		145	189	pg/g	76.9	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712006	Date Collected: 04/11/2022 16:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 26.5
Client ID: SB04-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 17:54	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-7		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 14.43 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			148	189	pg/g	78.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			142	189	pg/g	75.4 (26%-138%)
37Cl-2,3,7,8-TCDD			20.4	18.9	pg/g	108 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712006	Date Collected: 04/11/2022 16:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 26.5
Client ID: SB04-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 06/01/2022 21:18	Analyst: MJC	Instrument: HRP757
Data File: e01jun22a-15		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 14.43 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		7.74	pg/g	0.685	0.943

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712007	Date Collected: 04/11/2022 12:25	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 14.8
Client ID: SB05-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 18:44	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-8		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.12 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.217	pg/g	0.217	0.969
40321-76-4	1,2,3,7,8-PeCDD	U	0.527	pg/g	0.527	4.84
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.08	pg/g	1.08	4.84
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.47	pg/g	1.06	4.84
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.08	pg/g	1.08	4.84
35822-46-9	1,2,3,4,6,7,8-HpCDD		89.3	pg/g	2.58	4.84
3268-87-9	1,2,3,4,6,7,8,9-OCDD		670	pg/g	3.33	9.69
51207-31-9	2,3,7,8-TCDF	J	0.393	pg/g	0.391	0.969
57117-41-6	1,2,3,7,8-PeCDF	U	0.502	pg/g	0.502	4.84
57117-31-4	2,3,4,7,8-PeCDF	J	0.478	pg/g	0.473	4.84
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.701	pg/g	0.571	4.84
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.583	pg/g	0.583	4.84
60851-34-5	2,3,4,6,7,8-HxCDF	JK	0.661	pg/g	0.595	4.84
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.941	pg/g	0.941	4.84
67562-39-4	1,2,3,4,6,7,8-HpCDF		9.08	pg/g	0.602	4.84
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.967	pg/g	0.967	4.84
39001-02-0	1,2,3,4,6,7,8,9-OCDF		45.0	pg/g	1.83	9.69
41903-57-5	Total TeCDD	JK	5.84	pg/g	0.217	0.969
36088-22-9	Total PeCDD	J	7.56	pg/g	0.527	4.84
34465-46-8	Total HxCDD	J	44.4	pg/g	1.06	4.84
37871-00-4	Total HpCDD	K	610	pg/g	2.58	4.84
30402-14-3	Total TeCDF	JK	2.12	pg/g	0.391	0.969
30402-15-4	Total PeCDF	JK	4.09	pg/g	0.0883	4.84
55684-94-1	Total HxCDF	JK	12.4	pg/g	0.571	4.84
38998-75-3	Total HpCDF		42.4	pg/g	0.602	4.84
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		1.66	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		2.23	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		186	194	pg/g	96.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		202	194	pg/g	104	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	194	pg/g	87.5	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		180	194	pg/g	93.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		181	194	pg/g	93.6	(23%-140%)
13C-OCDD		327	387	pg/g	84.5	(17%-157%)
13C-2,3,7,8-TCDF		179	194	pg/g	92.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		182	194	pg/g	94.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		178	194	pg/g	92.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		169	194	pg/g	87.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	194	pg/g	89.0	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		173	194	pg/g	89.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		164	194	pg/g	84.8	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712007	Date Collected: 04/11/2022 12:25	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 14.8
Client ID: SB05-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 18:44	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-8		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.12 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			168	194	pg/g	86.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			160	194	pg/g	82.4 (26%-138%)
37Cl-2,3,7,8-TCDD			19.9	19.4	pg/g	103 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712008	Date Collected: 04/11/2022 12:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 13.3
Client ID: SB05-3-10		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 19:34	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-9		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.06 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.150	pg/g	0.150	0.957
40321-76-4	1,2,3,7,8-PeCDD	U	0.268	pg/g	0.268	4.78
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.297	pg/g	0.297	4.78
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.279	pg/g	0.279	4.78
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.291	pg/g	0.291	4.78
35822-46-9	1,2,3,4,6,7,8-HpCDD	JK	0.555	pg/g	0.377	4.78
3268-87-9	1,2,3,4,6,7,8,9-OCDD	BJK	3.89	pg/g	0.676	9.57
51207-31-9	2,3,7,8-TCDF	U	0.188	pg/g	0.188	0.957
57117-41-6	1,2,3,7,8-PeCDF	U	0.174	pg/g	0.174	4.78
57117-31-4	2,3,4,7,8-PeCDF	U	0.160	pg/g	0.160	4.78
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.785	pg/g	0.224	4.78
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.291	pg/g	0.220	4.78
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.220	pg/g	0.220	4.78
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.335	pg/g	0.335	4.78
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	1.58	pg/g	0.182	4.78
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.287	pg/g	0.287	4.78
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	0.735	pg/g	0.448	9.57
41903-57-5	Total TeCDD	JK	0.398	pg/g	0.150	0.957
36088-22-9	Total PeCDD	U	0.268	pg/g	0.268	4.78
34465-46-8	Total HxCDD	JK	0.360	pg/g	0.279	4.78
37871-00-4	Total HpCDD	JK	1.12	pg/g	0.377	4.78
30402-14-3	Total TeCDF	U	0.188	pg/g	0.188	0.957
30402-15-4	Total PeCDF	BJK	0.400	pg/g	0.0614	4.78
55684-94-1	Total HxCDF	BJK	1.54	pg/g	0.220	4.78
38998-75-3	Total HpCDF	BJ	2.10	pg/g	0.182	4.78
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.130	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.448	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		189	191	pg/g	98.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		216	191	pg/g	113	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	191	pg/g	85.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	191	pg/g	92.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		183	191	pg/g	95.5	(23%-140%)
13C-OCDD		323	383	pg/g	84.3	(17%-157%)
13C-2,3,7,8-TCDF		188	191	pg/g	98.4	(24%-169%)
13C-1,2,3,7,8-PeCDF		194	191	pg/g	101	(24%-185%)
13C-2,3,4,7,8-PeCDF		195	191	pg/g	102	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	191	pg/g	86.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		165	191	pg/g	86.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		175	191	pg/g	91.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		168	191	pg/g	87.8	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712008	Date Collected: 04/11/2022 12:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 13.3
Client ID: SB05-3-10		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 19:34	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-9		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.06 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			166	191	pg/g	87.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			164	191	pg/g	85.7 (26%-138%)
37Cl-2,3,7,8-TCDD			20.8	19.1	pg/g	109 (35%-197%)

Comments:

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712009	Date Collected: 04/11/2022 15:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 16.8
Client ID: SB06-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 20:24	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-10		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.18 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.278	pg/g	0.278	0.987
40321-76-4	1,2,3,7,8-PeCDD	U	0.671	pg/g	0.671	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.780	pg/g	0.780	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.87	pg/g	0.754	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.54	pg/g	0.778	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		28.7	pg/g	1.32	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		205	pg/g	3.18	9.87
51207-31-9	2,3,7,8-TCDF	U	0.302	pg/g	0.302	0.987
57117-41-6	1,2,3,7,8-PeCDF	J	0.442	pg/g	0.338	4.93
57117-31-4	2,3,4,7,8-PeCDF	J	0.444	pg/g	0.330	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.760	pg/g	0.515	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.472	pg/g	0.472	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.596	pg/g	0.596	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.847	pg/g	0.847	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF		5.91	pg/g	0.752	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.26	pg/g	1.26	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	9.20	pg/g	2.86	9.87
41903-57-5	Total TeCDD	JK	1.14	pg/g	0.278	0.987
36088-22-9	Total PeCDD	JK	3.52	pg/g	0.671	4.93
34465-46-8	Total HxCDD	JK	15.8	pg/g	0.754	4.93
37871-00-4	Total HpCDD		62.8	pg/g	1.32	4.93
30402-14-3	Total TeCDF	JK	1.26	pg/g	0.302	0.987
30402-15-4	Total PeCDF	JK	6.52	pg/g	0.0880	4.93
55684-94-1	Total HxCDF	J	10.4	pg/g	0.472	4.93
38998-75-3	Total HpCDF		14.5	pg/g	0.752	4.93
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.975	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		1.61	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		191	197	pg/g	96.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		193	197	pg/g	97.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		169	197	pg/g	85.6	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		165	197	pg/g	83.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		141	197	pg/g	71.7	(23%-140%)
13C-OCDD		179	395	pg/g	45.2	(17%-157%)
13C-2,3,7,8-TCDF		180	197	pg/g	91.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	197	pg/g	89.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		171	197	pg/g	86.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	197	pg/g	84.1	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		171	197	pg/g	86.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		154	197	pg/g	77.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		154	197	pg/g	78.2	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712009	Date Collected: 04/11/2022 15:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 16.8
Client ID: SB06-0-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 20:24	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-10		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.18 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			145	197	pg/g	73.5 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			139	197	pg/g	70.3 (26%-138%)
37Cl-2,3,7,8-TCDD			21.0	19.7	pg/g	106 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712010	Date Collected: 04/11/2022 13:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 11.7
Client ID: SB07-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 21:14	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-11		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.06 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.250	pg/g	0.250	0.939
40321-76-4	1,2,3,7,8-PeCDD	U	0.488	pg/g	0.488	4.70
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.644	pg/g	0.644	4.70
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.605	pg/g	0.605	4.70
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.633	pg/g	0.633	4.70
35822-46-9	1,2,3,4,6,7,8-HpCDD		6.10	pg/g	1.22	4.70
3268-87-9	1,2,3,4,6,7,8,9-OCDD		72.3	pg/g	1.41	9.39
51207-31-9	2,3,7,8-TCDF	U	0.246	pg/g	0.246	0.939
57117-41-6	1,2,3,7,8-PeCDF	U	0.314	pg/g	0.314	4.70
57117-31-4	2,3,4,7,8-PeCDF	U	0.308	pg/g	0.308	4.70
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.235	pg/g	0.235	4.70
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.227	pg/g	0.227	4.70
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.246	pg/g	0.246	4.70
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.396	pg/g	0.396	4.70
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJK	1.31	pg/g	0.475	4.70
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.808	pg/g	0.808	4.70
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.78	pg/g	0.791	9.39
41903-57-5	Total TeCDD	K	3.15	pg/g	0.250	0.939
36088-22-9	Total PeCDD	JK	4.10	pg/g	0.488	4.70
34465-46-8	Total HxCDD	JK	4.18	pg/g	0.605	4.70
37871-00-4	Total HpCDD		13.8	pg/g	1.22	4.70
30402-14-3	Total TeCDF	JK	0.344	pg/g	0.246	0.939
30402-15-4	Total PeCDF	BJK	0.693	pg/g	0.0808	4.70
55684-94-1	Total HxCDF	BJK	1.28	pg/g	0.227	4.70
38998-75-3	Total HpCDF	JK	3.00	pg/g	0.475	4.70
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0964	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.682	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		177	188	pg/g	94.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		189	188	pg/g	101	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	188	pg/g	85.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		161	188	pg/g	85.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	188	pg/g	86.4	(23%-140%)
13C-OCDD		289	376	pg/g	77.0	(17%-157%)
13C-2,3,7,8-TCDF		169	188	pg/g	90.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		171	188	pg/g	90.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		163	188	pg/g	87.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		157	188	pg/g	83.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		159	188	pg/g	84.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		164	188	pg/g	87.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		153	188	pg/g	81.2	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712010	Date Collected: 04/11/2022 13:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 11.7
Client ID: SB07-0.5-3		Prep Basis: Dry Weight
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 21:14	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_10-11		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 12.06 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
	13C-1,2,3,4,6,7,8-HpCDF		150	188	pg/g	80.0 (28%-143%)
	13C-1,2,3,4,7,8,9-HpCDF		143	188	pg/g	76.2 (26%-138%)
	37Cl-2,3,7,8-TCDD		21.1	18.8	pg/g	112 (35%-197%)

Comments:

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712011	Date Collected: 04/11/2022 13:25	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 22.9
Client ID: SB07-3-6		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 13:51	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-3		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.15 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.235	pg/g	0.235	0.986
40321-76-4	1,2,3,7,8-PeCDD	U	0.686	pg/g	0.686	4.93
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.503	pg/g	0.503	4.93
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.463	pg/g	0.463	4.93
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.487	pg/g	0.487	4.93
35822-46-9	1,2,3,4,6,7,8-HpCDD		6.56	pg/g	0.911	4.93
3268-87-9	1,2,3,4,6,7,8,9-OCDD		38.1	pg/g	1.70	9.86
51207-31-9	2,3,7,8-TCDF	BJ	0.712	pg/g	0.363	0.986
57117-41-6	1,2,3,7,8-PeCDF	U	0.304	pg/g	0.304	4.93
57117-31-4	2,3,4,7,8-PeCDF	JK	0.552	pg/g	0.294	4.93
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.379	pg/g	0.379	4.93
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.375	pg/g	0.375	4.93
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.385	pg/g	0.385	4.93
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.653	pg/g	0.653	4.93
67562-39-4	1,2,3,4,6,7,8-HpCDF	BJ	2.39	pg/g	0.333	4.93
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.584	pg/g	0.584	4.93
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	5.31	pg/g	0.998	9.86
41903-57-5	Total TeCDD	JK	11.8	pg/g	0.235	0.986
36088-22-9	Total PeCDD	J	9.38	pg/g	0.686	4.93
34465-46-8	Total HxCDD	JK	13.5	pg/g	0.463	4.93
37871-00-4	Total HpCDD		22.7	pg/g	0.911	4.93
30402-14-3	Total TeCDF	JK	9.47	pg/g	0.363	0.986
30402-15-4	Total PeCDF	BJK	5.57	pg/g	0.0828	4.93
55684-94-1	Total HxCDF	BJ	3.39	pg/g	0.375	4.93
38998-75-3	Total HpCDF	J	6.67	pg/g	0.333	4.93
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.339	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.969	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	197	pg/g	85.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		171	197	pg/g	86.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		154	197	pg/g	78.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	197	pg/g	84.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		153	197	pg/g	77.7	(23%-140%)
13C-OCDD		269	394	pg/g	68.2	(17%-157%)
13C-2,3,7,8-TCDF		158	197	pg/g	80.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		160	197	pg/g	81.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		154	197	pg/g	77.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		140	197	pg/g	70.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		159	197	pg/g	80.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		153	197	pg/g	77.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		143	197	pg/g	72.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712011	Date Collected: 04/11/2022 13:25	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 22.9
Client ID: SB07-3-6		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 13:51	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-3		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.15 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
	13C-1,2,3,4,6,7,8-HpCDF		144	197	pg/g	73.2 (28%-143%)
	13C-1,2,3,4,7,8,9-HpCDF		135	197	pg/g	68.3 (26%-138%)
	37Cl-2,3,7,8-TCDD		19.6	19.7	pg/g	99.3 (35%-197%)

- Comments:**
- B** The target analyte was detected in the associated blank.
 - J** Value is estimated
 - K** Estimated Maximum Possible Concentration
 - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712012	Date Collected: 04/11/2022 15:45	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 24.6
Client ID: SB08-0-3		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 14:41	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-4		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.03 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.366	pg/g	0.366	1.02
40321-76-4	1,2,3,7,8-PeCDD	JK	4.99	pg/g	0.623	5.09
39227-28-6	1,2,3,4,7,8-HxCDD		12.6	pg/g	1.66	5.09
57653-85-7	1,2,3,6,7,8-HxCDD		30.3	pg/g	1.62	5.09
19408-74-3	1,2,3,7,8,9-HxCDD		12.6	pg/g	1.66	5.09
35822-46-9	1,2,3,4,6,7,8-HpCDD		674	pg/g	4.40	5.09
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5350	pg/g	6.47	10.2
51207-31-9	2,3,7,8-TCDF		2.10	pg/g	0.665	1.02
57117-41-6	1,2,3,7,8-PeCDF	J	2.37	pg/g	0.816	5.09
57117-31-4	2,3,4,7,8-PeCDF	J	4.17	pg/g	0.739	5.09
70648-26-9	1,2,3,4,7,8-HxCDF	J	5.08	pg/g	0.820	5.09
57117-44-9	1,2,3,6,7,8-HxCDF	J	4.72	pg/g	0.794	5.09
60851-34-5	2,3,4,6,7,8-HxCDF		6.64	pg/g	0.877	5.09
72918-21-9	1,2,3,7,8,9-HxCDF	J	2.24	pg/g	1.30	5.09
67562-39-4	1,2,3,4,6,7,8-HpCDF		104	pg/g	1.40	5.09
55673-89-7	1,2,3,4,7,8,9-HpCDF		5.67	pg/g	2.30	5.09
39001-02-0	1,2,3,4,6,7,8,9-OCDF		211	pg/g	2.34	10.2
41903-57-5	Total TeCDD	JK	47.0	pg/g	0.366	1.02
36088-22-9	Total PeCDD	JK	74.9	pg/g	0.623	5.09
34465-46-8	Total HxCDD	JK	256	pg/g	1.62	5.09
37871-00-4	Total HpCDD		1640	pg/g	4.40	5.09
30402-14-3	Total TeCDF	JK	39.0	pg/g	0.665	1.02
30402-15-4	Total PeCDF	JK	80.7	pg/g	0.0893	5.09
55684-94-1	Total HxCDF	J	190	pg/g	0.794	5.09
38998-75-3	Total HpCDF	JK	330	pg/g	1.40	5.09
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		23.5	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		23.6	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		189	203	pg/g	92.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		191	203	pg/g	94.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		163	203	pg/g	80.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	203	pg/g	86.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		180	203	pg/g	88.3	(23%-140%)
13C-OCDD		346	407	pg/g	85.0	(17%-157%)
13C-2,3,7,8-TCDF		173	203	pg/g	84.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		179	203	pg/g	88.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	203	pg/g	86.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		153	203	pg/g	75.3	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		161	203	pg/g	79.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		161	203	pg/g	79.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	203	pg/g	76.8	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712012	Date Collected: 04/11/2022 15:45	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 24.6
Client ID: SB08-0-3		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 14:41	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-4		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.03 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL	
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
	13C-1,2,3,4,6,7,8-HpCDF		154	203	pg/g	75.5	(28%-143%)
	13C-1,2,3,4,7,8,9-HpCDF		154	203	pg/g	75.7	(26%-138%)
	37Cl-2,3,7,8-TCDD		20.2	20.3	pg/g	99.3	(35%-197%)

Comments:

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712012	Date Collected: 04/11/2022 15:45	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 24.6
Client ID: SB08-0-3		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/10/2022 11:22	Analyst: MJC	Instrument: HRP757
Data File: e10jun22a-5		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.03 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		2.06	pg/g	0.262	1.02

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712013	Date Collected: 04/11/2022 00:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 25.1
Client ID: DUP-01		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/07/2022 23:27	Analyst: CLP	Instrument: HRP750
Data File: A07JUN22B-10		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.13 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.850	pg/g	0.671	1.02
40321-76-4	1,2,3,7,8-PeCDD	JK	4.55	pg/g	1.04	5.08
39227-28-6	1,2,3,4,7,8-HxCDD	JK	2.47	pg/g	1.48	5.08
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.04	pg/g	1.30	5.08
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.30	pg/g	1.40	5.08
35822-46-9	1,2,3,4,6,7,8-HpCDD		37.4	pg/g	1.83	5.08
3268-87-9	1,2,3,4,6,7,8,9-OCDD		155	pg/g	2.81	10.2
51207-31-9	2,3,7,8-TCDF	U	2.48	pg/g	2.48	1.02
57117-41-6	1,2,3,7,8-PeCDF		30.1	pg/g	1.55	5.08
57117-31-4	2,3,4,7,8-PeCDF	J	4.43	pg/g	1.37	5.08
70648-26-9	1,2,3,4,7,8-HxCDF		12.0	pg/g	1.23	5.08
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.89	pg/g	1.27	5.08
60851-34-5	2,3,4,6,7,8-HxCDF	JK	2.56	pg/g	1.32	5.08
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.77	pg/g	1.77	5.08
67562-39-4	1,2,3,4,6,7,8-HpCDF		30.3	pg/g	0.919	5.08
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.51	pg/g	1.51	5.08
39001-02-0	1,2,3,4,6,7,8,9-OCDF		17.3	pg/g	2.01	10.2
41903-57-5	Total TeCDD	JK	125	pg/g	0.671	1.02
36088-22-9	Total PeCDD	JK	121	pg/g	1.04	5.08
34465-46-8	Total HxCDD	JK	115	pg/g	1.30	5.08
37871-00-4	Total HpCDD		74.0	pg/g	1.83	5.08
30402-14-3	Total TeCDF	K	123	pg/g	2.48	1.02
30402-15-4	Total PeCDF	JK	96.9	pg/g	0.122	5.08
55684-94-1	Total HxCDF	JK	44.0	pg/g	1.23	5.08
38998-75-3	Total HpCDF		44.0	pg/g	0.919	5.08
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		11.9	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		12.0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		178	203	pg/g	87.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		179	203	pg/g	88.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		170	203	pg/g	83.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		178	203	pg/g	87.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		175	203	pg/g	85.9	(23%-140%)
13C-OCDD		332	407	pg/g	81.6	(17%-157%)
13C-2,3,7,8-TCDF		173	203	pg/g	84.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		179	203	pg/g	87.9	(24%-185%)
13C-2,3,4,7,8-PeCDF		179	203	pg/g	87.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		166	203	pg/g	81.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		172	203	pg/g	84.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		176	203	pg/g	86.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		170	203	pg/g	83.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712013	Date Collected: 04/11/2022 00:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 25.1
Client ID: DUP-01		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/07/2022 23:27	Analyst: CLP	Instrument: HRP750
Data File: A07JUN22B-10		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.13 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
	13C-1,2,3,4,6,7,8-HpCDF		162	203	pg/g	79.8 (28%-143%)
	13C-1,2,3,4,7,8,9-HpCDF		161	203	pg/g	79.4 (26%-138%)
	37Cl-2,3,7,8-TCDD		19.1	20.3	pg/g	94.0 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712013	Date Collected: 04/11/2022 00:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 25.1
Client ID: DUP-01		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 04:35	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-5		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.13 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		7.00	pg/g	0.405	1.02

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663
Lab Sample ID: 19712014
Client Sample: 1613B Soil
Client ID: DU-01
Batch ID: 49988
Run Date: 06/05/2022 16:21
Data File: A05JUN22A-6
Prep Batch: 49986
Prep Date: 31-MAY-22

Client: APEX001
Date Collected: 04/14/2022 12:00
Date Received: 04/26/2022 10:49
Method: EPA Method 1613B
Analyst: CLP
Prep Method: SW846 3540C
Prep Aliquot: 10.17 g

Project: APEX00122
Matrix: SOIL
%Moisture: .8
Prep Basis: Dry Weight
Instrument: HRP750
Dilution: 1

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.674	pg/g	0.373	0.991
40321-76-4	1,2,3,7,8-PeCDD	JK	2.21	pg/g	0.684	4.95
39227-28-6	1,2,3,4,7,8-HxCDD	J	3.45	pg/g	1.18	4.95
57653-85-7	1,2,3,6,7,8-HxCDD		8.26	pg/g	1.15	4.95
19408-74-3	1,2,3,7,8,9-HxCDD	J	4.22	pg/g	1.18	4.95
35822-46-9	1,2,3,4,6,7,8-HpCDD		108	pg/g	3.05	4.95
3268-87-9	1,2,3,4,6,7,8,9-OCDD		826	pg/g	5.01	9.91
51207-31-9	2,3,7,8-TCDF		3.19	pg/g	0.680	0.991
57117-41-6	1,2,3,7,8-PeCDF	J	2.52	pg/g	1.05	4.95
57117-31-4	2,3,4,7,8-PeCDF	J	2.63	pg/g	0.926	4.95
70648-26-9	1,2,3,4,7,8-HxCDF	J	4.37	pg/g	0.708	4.95
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.19	pg/g	0.743	4.95
60851-34-5	2,3,4,6,7,8-HxCDF	JK	1.69	pg/g	0.773	4.95
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.20	pg/g	1.20	4.95
67562-39-4	1,2,3,4,6,7,8-HpCDF		25.2	pg/g	0.783	4.95
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.50	pg/g	1.18	4.95
39001-02-0	1,2,3,4,6,7,8,9-OCDF		54.2	pg/g	1.75	9.91
41903-57-5	Total TeCDD	JK	99.4	pg/g	0.373	0.991
36088-22-9	Total PeCDD	JK	105	pg/g	0.684	4.95
34465-46-8	Total HxCDD	J	143	pg/g	1.15	4.95
37871-00-4	Total HpCDD		235	pg/g	3.05	4.95
30402-14-3	Total TeCDF	JK	44.3	pg/g	0.680	0.991
30402-15-4	Total PeCDF	J	28.7	pg/g	0.113	4.95
55684-94-1	Total HxCDF	JK	38.4	pg/g	0.708	4.95
38998-75-3	Total HpCDF	JK	83.6	pg/g	0.783	4.95
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		8.03	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		8.09	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		183	198	pg/g	92.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		187	198	pg/g	94.2	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	198	pg/g	80.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		177	198	pg/g	89.1	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		172	198	pg/g	86.8	(23%-140%)
13C-OCDD		296	396	pg/g	74.7	(17%-157%)
13C-2,3,7,8-TCDF		173	198	pg/g	87.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		173	198	pg/g	87.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		173	198	pg/g	87.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		142	198	pg/g	71.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		162	198	pg/g	81.7	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		158	198	pg/g	79.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		152	198	pg/g	76.7	(29%-147%)

**Hi-Res Dioxins/Furans
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Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712014	Date Collected: 04/14/2022 12:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-01		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 16:21	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-6		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.17 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			150	198	pg/g	75.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			147	198	pg/g	74.0 (26%-138%)
37Cl-2,3,7,8-TCDD			19.6	19.8	pg/g	98.7 (35%-197%)

Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712014	Date Collected: 04/14/2022 12:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-01		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 05:01	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-6		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.17 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		2.63	pg/g	0.299	0.991

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712015	Date Collected: 04/12/2022 15:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .9
Client ID: DU-02		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 17:11	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-7		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.51 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.571	pg/g	0.334	0.961
40321-76-4	1,2,3,7,8-PeCDD	JK	2.97	pg/g	0.455	4.80
39227-28-6	1,2,3,4,7,8-HxCDD	J	3.01	pg/g	1.57	4.80
57653-85-7	1,2,3,6,7,8-HxCDD		8.56	pg/g	1.48	4.80
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.49	pg/g	1.54	4.80
35822-46-9	1,2,3,4,6,7,8-HpCDD		156	pg/g	2.19	4.80
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1420	pg/g	4.50	9.61
51207-31-9	2,3,7,8-TCDF		3.16	pg/g	0.542	0.961
57117-41-6	1,2,3,7,8-PeCDF	J	3.78	pg/g	0.484	4.80
57117-31-4	2,3,4,7,8-PeCDF	J	3.28	pg/g	0.478	4.80
70648-26-9	1,2,3,4,7,8-HxCDF		7.93	pg/g	0.563	4.80
57117-44-9	1,2,3,6,7,8-HxCDF	J	3.87	pg/g	0.592	4.80
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.76	pg/g	0.590	4.80
72918-21-9	1,2,3,7,8,9-HxCDF	JK	1.04	pg/g	0.991	4.80
67562-39-4	1,2,3,4,6,7,8-HpCDF		52.2	pg/g	0.924	4.80
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.24	pg/g	1.49	4.80
39001-02-0	1,2,3,4,6,7,8,9-OCDF		138	pg/g	1.70	9.61
41903-57-5	Total TeCDD	JK	63.0	pg/g	0.334	0.961
36088-22-9	Total PeCDD	JK	73.4	pg/g	0.455	4.80
34465-46-8	Total HxCDD	J	109	pg/g	1.48	4.80
37871-00-4	Total HpCDD	JK	343	pg/g	2.19	4.80
30402-14-3	Total TeCDF	JK	43.3	pg/g	0.542	0.961
30402-15-4	Total PeCDF	JK	39.6	pg/g	0.0730	4.80
55684-94-1	Total HxCDF	JK	69.7	pg/g	0.563	4.80
38998-75-3	Total HpCDF	JK	200	pg/g	0.924	4.80
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		10.5	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		10.5	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		180	192	pg/g	93.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		190	192	pg/g	98.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		158	192	pg/g	82.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	192	pg/g	88.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		179	192	pg/g	93.3	(23%-140%)
13C-OCDD		343	384	pg/g	89.2	(17%-157%)
13C-2,3,7,8-TCDF		171	192	pg/g	89.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	192	pg/g	91.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		175	192	pg/g	91.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		149	192	pg/g	77.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	192	pg/g	81.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		161	192	pg/g	83.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		155	192	pg/g	80.9	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712015	Date Collected: 04/12/2022 15:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .9
Client ID: DU-02		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 17:11	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-7		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.51 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			158	192	pg/g	82.5 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			161	192	pg/g	83.6 (26%-138%)
37Cl-2,3,7,8-TCDD			18.7	19.2	pg/g	97.2 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712015	Date Collected: 04/12/2022 15:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .9
Client ID: DU-02		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 05:27	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-7		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.51 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		2.41	pg/g	0.263	0.961

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712016	Date Collected: 04/13/2022 11:50	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-03		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 18:01	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-8		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.387	pg/g	0.293	0.998
40321-76-4	1,2,3,7,8-PeCDD	J	1.69	pg/g	0.621	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	J	4.38	pg/g	1.23	4.99
57653-85-7	1,2,3,6,7,8-HxCDD	K	15.0	pg/g	1.12	4.99
19408-74-3	1,2,3,7,8,9-HxCDD		5.65	pg/g	1.18	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		361	pg/g	3.19	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2570	pg/g	5.19	9.98
51207-31-9	2,3,7,8-TCDF		2.02	pg/g	0.329	0.998
57117-41-6	1,2,3,7,8-PeCDF	JK	2.28	pg/g	0.349	4.99
57117-31-4	2,3,4,7,8-PeCDF	J	2.30	pg/g	0.323	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	J	3.98	pg/g	0.643	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.78	pg/g	0.664	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	J	3.32	pg/g	0.716	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.03	pg/g	1.03	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF		90.6	pg/g	1.21	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	4.43	pg/g	1.84	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF		229	pg/g	1.74	9.98
41903-57-5	Total TeCDD	JK	40.9	pg/g	0.293	0.998
36088-22-9	Total PeCDD	JK	59.0	pg/g	0.621	4.99
34465-46-8	Total HxCDD	JK	164	pg/g	1.12	4.99
37871-00-4	Total HpCDD		1200	pg/g	3.19	4.99
30402-14-3	Total TeCDF	JK	26.3	pg/g	0.329	0.998
30402-15-4	Total PeCDF	JK	40.2	pg/g	0.0619	4.99
55684-94-1	Total HxCDF	J	115	pg/g	0.643	4.99
38998-75-3	Total HpCDF	J	330	pg/g	1.21	4.99
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		11.9	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		12.0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		188	200	pg/g	94.3	(25%-164%)
13C-1,2,3,7,8-PeCDD		199	200	pg/g	99.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		172	200	pg/g	86.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		180	200	pg/g	90.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		186	200	pg/g	93.3	(23%-140%)
13C-OCDD		355	399	pg/g	88.9	(17%-157%)
13C-2,3,7,8-TCDF		184	200	pg/g	92.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		183	200	pg/g	91.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		186	200	pg/g	93.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		161	200	pg/g	80.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		166	200	pg/g	83.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		170	200	pg/g	85.2	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		167	200	pg/g	83.5	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712016	Date Collected: 04/13/2022 11:50	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-03		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 18:01	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-8		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			160	200	pg/g	80.2 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			171	200	pg/g	85.7 (26%-138%)
37Cl-2,3,7,8-TCDD			20.8	20.0	pg/g	104 (35%-197%)

- Comments:**
- B** The target analyte was detected in the associated blank.
 - J** Value is estimated
 - K** Estimated Maximum Possible Concentration
 - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712016	Date Collected: 04/13/2022 11:50	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-03		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 05:52	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-8		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	B	1.96	pg/g	0.202	0.998

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- B** The target analyte was detected in the associated blank.
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
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Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712017	Date Collected: 04/15/2022 12:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1
Client ID: DU-04		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 18:51	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-9		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.56 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.708	pg/g	0.344	0.956
40321-76-4	1,2,3,7,8-PeCDD	J	3.32	pg/g	0.524	4.78
39227-28-6	1,2,3,4,7,8-HxCDD	J	3.27	pg/g	1.57	4.78
57653-85-7	1,2,3,6,7,8-HxCDD		10.6	pg/g	1.46	4.78
19408-74-3	1,2,3,7,8,9-HxCDD		6.17	pg/g	1.53	4.78
35822-46-9	1,2,3,4,6,7,8-HpCDD		364	pg/g	4.05	4.78
3268-87-9	1,2,3,4,6,7,8,9-OCDD		3050	pg/g	4.28	9.56
51207-31-9	2,3,7,8-TCDF		3.43	pg/g	0.713	0.956
57117-41-6	1,2,3,7,8-PeCDF		4.87	pg/g	0.461	4.78
57117-31-4	2,3,4,7,8-PeCDF	J	3.07	pg/g	0.421	4.78
70648-26-9	1,2,3,4,7,8-HxCDF		16.2	pg/g	0.562	4.78
57117-44-9	1,2,3,6,7,8-HxCDF		5.69	pg/g	0.570	4.78
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.96	pg/g	0.585	4.78
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.24	pg/g	0.951	4.78
67562-39-4	1,2,3,4,6,7,8-HpCDF		111	pg/g	1.04	4.78
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK	3.77	pg/g	1.62	4.78
39001-02-0	1,2,3,4,6,7,8,9-OCDF		231	pg/g	2.33	9.56
41903-57-5	Total TeCDD	JK	81.5	pg/g	0.344	0.956
36088-22-9	Total PeCDD	JK	94.0	pg/g	0.524	4.78
34465-46-8	Total HxCDD	JK	222	pg/g	1.46	4.78
37871-00-4	Total HpCDD	E	2170	pg/g	4.05	4.78
30402-14-3	Total TeCDF	K	53.5	pg/g	0.713	0.956
30402-15-4	Total PeCDF	JK	41.7	pg/g	0.0952	4.78
55684-94-1	Total HxCDF	JK	88.8	pg/g	0.562	4.78
38998-75-3	Total HpCDF	JK	296	pg/g	1.04	4.78
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		15.8	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		15.8	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		157	191	pg/g	82.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		169	191	pg/g	88.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		140	191	pg/g	73.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		145	191	pg/g	75.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		155	191	pg/g	81.1	(23%-140%)
13C-OCDD		281	383	pg/g	73.3	(17%-157%)
13C-2,3,7,8-TCDF		148	191	pg/g	77.3	(24%-169%)
13C-1,2,3,7,8-PeCDF		154	191	pg/g	80.3	(24%-185%)
13C-2,3,4,7,8-PeCDF		156	191	pg/g	81.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		130	191	pg/g	67.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	191	pg/g	72.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		136	191	pg/g	71.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		137	191	pg/g	71.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712017	Date Collected: 04/15/2022 12:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1
Client ID: DU-04		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 18:51	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-9		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.56 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL	
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
	13C-1,2,3,4,6,7,8-HpCDF		131	191	pg/g	68.3	(28%-143%)
	13C-1,2,3,4,7,8,9-HpCDF		140	191	pg/g	73.3	(26%-138%)
	37Cl-2,3,7,8-TCDD		17.2	19.1	pg/g	89.9	(35%-197%)

Comments:

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712017	Date Collected: 04/15/2022 12:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1
Client ID: DU-04		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 06:18	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-9		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.56 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		3.29	pg/g	0.287	0.956

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712018	Date Collected: 04/14/2022 11:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1.4
Client ID: DU-05		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 19:41	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-10		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.25 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.905	pg/g	0.228	0.990
40321-76-4	1,2,3,7,8-PeCDD	J	3.68	pg/g	0.715	4.95
39227-28-6	1,2,3,4,7,8-HxCDD		14.8	pg/g	1.98	4.95
57653-85-7	1,2,3,6,7,8-HxCDD		43.1	pg/g	1.96	4.95
19408-74-3	1,2,3,7,8,9-HxCDD		12.3	pg/g	2.00	4.95
35822-46-9	1,2,3,4,6,7,8-HpCDD		1120	pg/g	5.05	4.95
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	8000	pg/g	6.25	9.90
51207-31-9	2,3,7,8-TCDF		4.17	pg/g	0.764	0.990
57117-41-6	1,2,3,7,8-PeCDF	JK	2.72	pg/g	0.564	4.95
57117-31-4	2,3,4,7,8-PeCDF		5.11	pg/g	0.536	4.95
70648-26-9	1,2,3,4,7,8-HxCDF		5.22	pg/g	0.790	4.95
57117-44-9	1,2,3,6,7,8-HxCDF	J	4.90	pg/g	0.812	4.95
60851-34-5	2,3,4,6,7,8-HxCDF		6.25	pg/g	0.843	4.95
72918-21-9	1,2,3,7,8,9-HxCDF	JK	2.01	pg/g	1.22	4.95
67562-39-4	1,2,3,4,6,7,8-HpCDF		133	pg/g	1.46	4.95
55673-89-7	1,2,3,4,7,8,9-HpCDF		7.25	pg/g	2.41	4.95
39001-02-0	1,2,3,4,6,7,8,9-OCDF		542	pg/g	2.53	9.90
41903-57-5	Total TeCDD	JK	126	pg/g	0.228	0.990
36088-22-9	Total PeCDD	J	123	pg/g	0.715	4.95
34465-46-8	Total HxCDD	JK	431	pg/g	1.96	4.95
37871-00-4	Total HpCDD	E	4730	pg/g	5.05	4.95
30402-14-3	Total TeCDF	JK	75.4	pg/g	0.764	0.990
30402-15-4	Total PeCDF	JK	79.7	pg/g	0.114	4.95
55684-94-1	Total HxCDF	JK	191	pg/g	0.790	4.95
38998-75-3	Total HpCDF	JK	579	pg/g	1.46	4.95
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		30.5	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		30.5	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		147	198	pg/g	74.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		154	198	pg/g	77.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		140	198	pg/g	70.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		140	198	pg/g	70.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		156	198	pg/g	78.9	(23%-140%)
13C-OCDD		307	396	pg/g	77.6	(17%-157%)
13C-2,3,7,8-TCDF		137	198	pg/g	69.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		140	198	pg/g	70.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		139	198	pg/g	70.1	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		127	198	pg/g	64.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		134	198	pg/g	67.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		134	198	pg/g	67.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		138	198	pg/g	69.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712018	Date Collected: 04/14/2022 11:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1.4
Client ID: DU-05		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 19:41	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-10		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.25 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			135	198	pg/g	68.1 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			135	198	pg/g	68.2 (26%-138%)
37Cl-2,3,7,8-TCDD			20.0	19.8	pg/g	101 (35%-197%)

Comments:
E Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712018	Date Collected: 04/14/2022 11:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1.4
Client ID: DU-05		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 06:43	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-10		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.25 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		3.48	pg/g	0.214	0.990

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663
Lab Sample ID: 19712019
Client Sample: 1613B Soil
Client ID: DU-06
Batch ID: 49988
Run Date: 06/05/2022 20:31
Data File: A05JUN22A-11
Prep Batch: 49986
Prep Date: 31-MAY-22

Client: APEX001
Date Collected: 04/13/2022 16:30
Date Received: 04/26/2022 10:49
Method: EPA Method 1613B
Analyst: CLP
Prep Method: SW846 3540C
Prep Aliquot: 10.16 g

Project: APEX00122
Matrix: SOIL
%Moisture: .9
Prep Basis: Dry Weight
Instrument: HRP750
Dilution: 1

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.907	pg/g	0.306	0.993
40321-76-4	1,2,3,7,8-PeCDD	J	3.78	pg/g	1.19	4.96
39227-28-6	1,2,3,4,7,8-HxCDD		13.3	pg/g	2.26	4.96
57653-85-7	1,2,3,6,7,8-HxCDD		21.1	pg/g	2.06	4.96
19408-74-3	1,2,3,7,8,9-HxCDD		8.63	pg/g	2.18	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		593	pg/g	5.42	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD	E	5660	pg/g	8.08	9.93
51207-31-9	2,3,7,8-TCDF	K	2.11	pg/g	0.810	0.993
57117-41-6	1,2,3,7,8-PeCDF	BJK	1.87	pg/g	0.528	4.96
57117-31-4	2,3,4,7,8-PeCDF	J	2.27	pg/g	0.498	4.96
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	3.18	pg/g	1.04	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	J	2.86	pg/g	1.01	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	J	3.94	pg/g	1.06	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.54	pg/g	1.54	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		129	pg/g	1.55	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF		7.08	pg/g	2.36	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		577	pg/g	3.22	9.93
41903-57-5	Total TeCDD	J	64.1	pg/g	0.306	0.993
36088-22-9	Total PeCDD	JK	86.0	pg/g	1.19	4.96
34465-46-8	Total HxCDD	JK	265	pg/g	2.06	4.96
37871-00-4	Total HpCDD	E	2330	pg/g	5.42	4.96
30402-14-3	Total TeCDF	JK	31.3	pg/g	0.810	0.993
30402-15-4	Total PeCDF	JK	41.0	pg/g	0.0899	4.96
55684-94-1	Total HxCDF	JK	129	pg/g	1.01	4.96
38998-75-3	Total HpCDF	JK	514	pg/g	1.55	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		20.1	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		20.1	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		154	199	pg/g	77.8	(25%-164%)
13C-1,2,3,7,8-PeCDD		160	199	pg/g	80.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		142	199	pg/g	71.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		151	199	pg/g	75.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		162	199	pg/g	81.8	(23%-140%)
13C-OCDD		300	397	pg/g	75.6	(17%-157%)
13C-2,3,7,8-TCDF		147	199	pg/g	73.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		150	199	pg/g	75.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		155	199	pg/g	77.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		134	199	pg/g	67.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		139	199	pg/g	70.3	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		141	199	pg/g	71.0	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		142	199	pg/g	71.7	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712019	Date Collected: 04/13/2022 16:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .9
Client ID: DU-06		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 20:31	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-11		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.16 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			140	199	pg/g	70.3 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			141	199	pg/g	71.0 (26%-138%)
37Cl-2,3,7,8-TCDD			19.6	19.9	pg/g	98.6 (35%-197%)

Comments:

- B** The target analyte was detected in the associated blank.
- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712019	Date Collected: 04/13/2022 16:30	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .9
Client ID: DU-06		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 07:09	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-11		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.16 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF	BK	1.89	pg/g	0.411	0.993

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- B** The target analyte was detected in the associated blank.
- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712020	Date Collected: 04/15/2022 13:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1
Client ID: DU-07		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 21:21	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-12		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.11 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.354	pg/g	0.354	0.999
40321-76-4	1,2,3,7,8-PeCDD	J	0.827	pg/g	0.388	4.99
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.943	pg/g	0.943	4.99
57653-85-7	1,2,3,6,7,8-HxCDD		6.46	pg/g	0.913	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.46	pg/g	0.941	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		154	pg/g	2.52	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1350	pg/g	5.41	9.99
51207-31-9	2,3,7,8-TCDF	BJK	0.745	pg/g	0.318	0.999
57117-41-6	1,2,3,7,8-PeCDF	BJK	0.779	pg/g	0.579	4.99
57117-31-4	2,3,4,7,8-PeCDF	J	1.30	pg/g	0.573	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	1.49	pg/g	0.611	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	JK	1.25	pg/g	0.591	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.61	pg/g	0.637	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.911	pg/g	0.911	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF		23.5	pg/g	0.813	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.35	pg/g	1.35	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF		65.8	pg/g	1.42	9.99
41903-57-5	Total TeCDD	JK	18.5	pg/g	0.354	0.999
36088-22-9	Total PeCDD	JK	20.9	pg/g	0.388	4.99
34465-46-8	Total HxCDD	JK	58.2	pg/g	0.913	4.99
37871-00-4	Total HpCDD		548	pg/g	2.52	4.99
30402-14-3	Total TeCDF	JK	11.9	pg/g	0.318	0.999
30402-15-4	Total PeCDF	JK	16.0	pg/g	0.0819	4.99
55684-94-1	Total HxCDF	JK	41.1	pg/g	0.591	4.99
38998-75-3	Total HpCDF	JK	88.4	pg/g	0.813	4.99
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		4.74	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		5.02	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		181	200	pg/g	90.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		187	200	pg/g	93.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		165	200	pg/g	82.4	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		166	200	pg/g	82.9	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		171	200	pg/g	85.3	(23%-140%)
13C-OCDD		303	400	pg/g	75.9	(17%-157%)
13C-2,3,7,8-TCDF		172	200	pg/g	85.9	(24%-169%)
13C-1,2,3,7,8-PeCDF		175	200	pg/g	87.6	(24%-185%)
13C-2,3,4,7,8-PeCDF		174	200	pg/g	87.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	200	pg/g	75.6	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		162	200	pg/g	81.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		161	200	pg/g	80.4	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712020	Date Collected: 04/15/2022 13:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: 1
Client ID: DU-07		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 21:21	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-12		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.11 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
	13C-1,2,3,4,6,7,8-HpCDF		154	200	pg/g	77.1 (28%-143%)
	13C-1,2,3,4,7,8,9-HpCDF		152	200	pg/g	76.3 (26%-138%)
	37Cl-2,3,7,8-TCDD		19.7	20.0	pg/g	98.4 (35%-197%)

- Comments:**
- B** The target analyte was detected in the associated blank.
 - J** Value is estimated
 - K** Estimated Maximum Possible Concentration
 - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712021	Date Collected: 04/16/2022 08:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-08		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 22:10	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-13		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		1.68	pg/g	0.335	0.998
40321-76-4	1,2,3,7,8-PeCDD	J	3.39	pg/g	0.912	4.99
39227-28-6	1,2,3,4,7,8-HxCDD		12.3	pg/g	1.37	4.99
57653-85-7	1,2,3,6,7,8-HxCDD		10.6	pg/g	1.39	4.99
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.88	pg/g	1.40	4.99
35822-46-9	1,2,3,4,6,7,8-HpCDD		221	pg/g	3.11	4.99
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1950	pg/g	5.65	9.98
51207-31-9	2,3,7,8-TCDF	BJ	0.696	pg/g	0.543	0.998
57117-41-6	1,2,3,7,8-PeCDF	BJK	1.07	pg/g	0.399	4.99
57117-31-4	2,3,4,7,8-PeCDF	J	1.39	pg/g	0.387	4.99
70648-26-9	1,2,3,4,7,8-HxCDF	BJ	1.73	pg/g	0.750	4.99
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.39	pg/g	0.764	4.99
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.86	pg/g	0.786	4.99
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.24	pg/g	1.24	4.99
67562-39-4	1,2,3,4,6,7,8-HpCDF		34.6	pg/g	0.862	4.99
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.45	pg/g	1.44	4.99
39001-02-0	1,2,3,4,6,7,8,9-OCDF		77.1	pg/g	1.98	9.98
41903-57-5	Total TeCDD	JK	14.5	pg/g	0.335	0.998
36088-22-9	Total PeCDD	JK	46.4	pg/g	0.912	4.99
34465-46-8	Total HxCDD	JK	109	pg/g	1.37	4.99
37871-00-4	Total HpCDD		547	pg/g	3.11	4.99
30402-14-3	Total TeCDF	JK	5.51	pg/g	0.543	0.998
30402-15-4	Total PeCDF	JK	17.6	pg/g	0.0848	4.99
55684-94-1	Total HxCDF	JK	57.1	pg/g	0.750	4.99
38998-75-3	Total HpCDF	J	116	pg/g	0.862	4.99
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		11.9	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		12.0	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		180	200	pg/g	90.2	(25%-164%)
13C-1,2,3,7,8-PeCDD		190	200	pg/g	95.0	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		160	200	pg/g	80.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		172	200	pg/g	86.4	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		172	200	pg/g	86.1	(23%-140%)
13C-OCDD		321	399	pg/g	80.5	(17%-157%)
13C-2,3,7,8-TCDF		173	200	pg/g	86.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		174	200	pg/g	87.0	(24%-185%)
13C-2,3,4,7,8-PeCDF		177	200	pg/g	88.5	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	200	pg/g	75.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		157	200	pg/g	78.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		159	200	pg/g	79.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		156	200	pg/g	78.3	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712021	Date Collected: 04/16/2022 08:20	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .8
Client ID: DU-08		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 22:10	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-13		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.1 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			155	200	pg/g	77.9 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			156	200	pg/g	78.0 (26%-138%)
37Cl-2,3,7,8-TCDD			20.5	20.0	pg/g	103 (35%-197%)

- Comments:**
- B** The target analyte was detected in the associated blank.
 - J** Value is estimated
 - K** Estimated Maximum Possible Concentration
 - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712022	Date Collected: 04/14/2022 13:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .7
Client ID: DU-DUP		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 23:00	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-14		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.18 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	0.781	pg/g	0.334	0.989
40321-76-4	1,2,3,7,8-PeCDD	JK	3.03	pg/g	0.831	4.94
39227-28-6	1,2,3,4,7,8-HxCDD		9.98	pg/g	1.71	4.94
57653-85-7	1,2,3,6,7,8-HxCDD		16.1	pg/g	1.64	4.94
19408-74-3	1,2,3,7,8,9-HxCDD	K	6.28	pg/g	1.70	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		386	pg/g	3.36	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2680	pg/g	5.02	9.89
51207-31-9	2,3,7,8-TCDF		3.76	pg/g	0.718	0.989
57117-41-6	1,2,3,7,8-PeCDF	J	2.87	pg/g	0.665	4.94
57117-31-4	2,3,4,7,8-PeCDF	J	2.76	pg/g	0.625	4.94
70648-26-9	1,2,3,4,7,8-HxCDF		5.03	pg/g	0.574	4.94
57117-44-9	1,2,3,6,7,8-HxCDF	JK	3.11	pg/g	0.599	4.94
60851-34-5	2,3,4,6,7,8-HxCDF	JK	2.60	pg/g	0.601	4.94
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.920	pg/g	0.920	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		60.1	pg/g	1.10	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	3.11	pg/g	1.77	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		165	pg/g	1.66	9.89
41903-57-5	Total TeCDD	JK	104	pg/g	0.334	0.989
36088-22-9	Total PeCDD	JK	115	pg/g	0.831	4.94
34465-46-8	Total HxCDD	JK	229	pg/g	1.64	4.94
37871-00-4	Total HpCDD	JK	1560	pg/g	3.36	4.94
30402-14-3	Total TeCDF	K	51.3	pg/g	0.718	0.989
30402-15-4	Total PeCDF	JK	42.4	pg/g	0.116	4.94
55684-94-1	Total HxCDF	JK	87.1	pg/g	0.574	4.94
38998-75-3	Total HpCDF	JK	237	pg/g	1.10	4.94
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		14.7	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		14.7	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		167	198	pg/g	84.4	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	198	pg/g	87.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		151	198	pg/g	76.2	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		159	198	pg/g	80.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		166	198	pg/g	84.0	(23%-140%)
13C-OCDD		316	396	pg/g	79.9	(17%-157%)
13C-2,3,7,8-TCDF		159	198	pg/g	80.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		159	198	pg/g	80.5	(24%-185%)
13C-2,3,4,7,8-PeCDF		165	198	pg/g	83.4	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		144	198	pg/g	72.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		147	198	pg/g	74.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		149	198	pg/g	75.4	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		149	198	pg/g	75.1	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712022	Date Collected: 04/14/2022 13:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .7
Client ID: DU-DUP		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/05/2022 23:00	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A-14		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.18 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			144	198	pg/g	73.0 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			150	198	pg/g	76.1 (26%-138%)
37Cl-2,3,7,8-TCDD			18.9	19.8	pg/g	95.7 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712022	Date Collected: 04/14/2022 13:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .7
Client ID: DU-DUP		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/09/2022 07:35	Analyst: MJC	Instrument: HRP757
Data File: e08jun22c_2-12		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.18 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		3.00	pg/g	0.184	0.989

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 2

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712023	Date Collected: 04/14/2022 14:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .6
Client ID: DU-TRIP		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/06/2022 01:37	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A_2-2		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.15 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK	0.720	pg/g	0.359	0.992
40321-76-4	1,2,3,7,8-PeCDD	JK	2.57	pg/g	0.654	4.96
39227-28-6	1,2,3,4,7,8-HxCDD	J	3.26	pg/g	1.52	4.96
57653-85-7	1,2,3,6,7,8-HxCDD		9.06	pg/g	1.49	4.96
19408-74-3	1,2,3,7,8,9-HxCDD	J	4.73	pg/g	1.52	4.96
35822-46-9	1,2,3,4,6,7,8-HpCDD		350	pg/g	4.80	4.96
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2460	pg/g	5.71	9.92
51207-31-9	2,3,7,8-TCDF		4.09	pg/g	0.803	0.992
57117-41-6	1,2,3,7,8-PeCDF	J	3.39	pg/g	0.432	4.96
57117-31-4	2,3,4,7,8-PeCDF	J	2.93	pg/g	0.397	4.96
70648-26-9	1,2,3,4,7,8-HxCDF		5.86	pg/g	0.938	4.96
57117-44-9	1,2,3,6,7,8-HxCDF	JK	2.46	pg/g	0.914	4.96
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.98	pg/g	0.958	4.96
72918-21-9	1,2,3,7,8,9-HxCDF	U	1.49	pg/g	1.49	4.96
67562-39-4	1,2,3,4,6,7,8-HpCDF		50.9	pg/g	1.01	4.96
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.55	pg/g	1.84	4.96
39001-02-0	1,2,3,4,6,7,8,9-OCDF		193	pg/g	2.36	9.92
41903-57-5	Total TeCDD	JK	115	pg/g	0.359	0.992
36088-22-9	Total PeCDD	JK	133	pg/g	0.654	4.96
34465-46-8	Total HxCDD	JK	265	pg/g	1.49	4.96
37871-00-4	Total HpCDD	E	2450	pg/g	4.80	4.96
30402-14-3	Total TeCDF	K	54.4	pg/g	0.803	0.992
30402-15-4	Total PeCDF	JK	35.6	pg/g	0.0855	4.96
55684-94-1	Total HxCDF	JK	58.4	pg/g	0.914	4.96
38998-75-3	Total HpCDF	JK	225	pg/g	1.01	4.96
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		12.1	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		12.2	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		178	198	pg/g	90.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		184	198	pg/g	92.6	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		150	198	pg/g	75.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		168	198	pg/g	84.8	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		167	198	pg/g	84.4	(23%-140%)
13C-OCDD		314	397	pg/g	79.2	(17%-157%)
13C-2,3,7,8-TCDF		164	198	pg/g	82.8	(24%-169%)
13C-1,2,3,7,8-PeCDF		176	198	pg/g	88.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		171	198	pg/g	86.2	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		137	198	pg/g	69.0	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		156	198	pg/g	78.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		152	198	pg/g	76.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		150	198	pg/g	75.4	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712023	Date Collected: 04/14/2022 14:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .6
Client ID: DU-TRIP		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/06/2022 01:37	Analyst: CLP	Instrument: HRP750
Data File: A05JUN22A_2-2		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.15 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			146	198	pg/g	73.5 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			149	198	pg/g	74.9 (26%-138%)
37Cl-2,3,7,8-TCDD			21.3	19.8	pg/g	107 (35%-197%)

- Comments:**
- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
 - J** Value is estimated
 - K** Estimated Maximum Possible Concentration
 - U** Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 19712023	Date Collected: 04/14/2022 14:00	Matrix: SOIL
Client Sample: 1613B Soil	Date Received: 04/26/2022 10:49	%Moisture: .6
Client ID: DU-TRIP		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/24/2022 14:53	Analyst: MJC	Instrument: HRP757
Data File: e24jun22d-5		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10.15 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		3.07	pg/g	0.363	0.992

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

- E** Value is estimated - Concentration of the target analyte exceeds the instrument calibration range
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12031930	LCS for batch 49950	13C-2,3,7,8-TCDD		92.8	(20%-175%)
		13C-1,2,3,7,8-PeCDD		86.2	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		80.7	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		93.2	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		79.2	(22%-166%)
		13C-OCDD		69.1	(13%-199%)
		13C-2,3,7,8-TCDF		89.5	(22%-152%)
		13C-1,2,3,7,8-PeCDF		84.9	(21%-192%)
		13C-2,3,4,7,8-PeCDF		81.2	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		80.0	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		90.0	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		90.8	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		82.6	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		80.4	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		70.5	(20%-186%)
		37Cl-2,3,7,8-TCDD		103	(31%-191%)
		12031931	LCSD for batch 49950	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				75.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD				76.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD				84.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD				74.3	(22%-166%)
13C-OCDD				62.8	(13%-199%)
13C-2,3,7,8-TCDF				80.1	(22%-152%)
13C-1,2,3,7,8-PeCDF				74.1	(21%-192%)
13C-2,3,4,7,8-PeCDF				73.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF				76.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF				82.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF				83.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF				74.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF				70.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF				66.6	(20%-186%)
37Cl-2,3,7,8-TCDD				103	(31%-191%)
12031929	MB for batch 49950			13C-2,3,7,8-TCDD	
		13C-1,2,3,7,8-PeCDD		82.9	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		74.1	(23%-140%)
		13C-OCDD		64.4	(17%-157%)
		13C-2,3,7,8-TCDF		85.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		81.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		85.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.7	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		67.5	(26%-138%)
		37Cl-2,3,7,8-TCDD		106	(35%-197%)
		19712001	SB01-0.5-3	13C-2,3,7,8-TCDD	

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712001	SB01-0.5-3	13C-1,2,3,7,8-PeCDD		90.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.0	(23%-140%)
		13C-OCDD		70.0	(17%-157%)
		13C-2,3,7,8-TCDF		93.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		82.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.8	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		87.5	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.1	(26%-138%)
		37Cl-2,3,7,8-TCDD		111	(35%-197%)
19712002	SB02-0-3	13C-2,3,7,8-TCDD		88.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.0	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		79.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		80.5	(23%-140%)
		13C-OCDD		73.3	(17%-157%)
		13C-2,3,7,8-TCDF		86.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.9	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		77.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		72.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.7	(26%-138%)
37Cl-2,3,7,8-TCDD		115	(35%-197%)		
19712003	SB02-3-7	13C-2,3,7,8-TCDD		88.5	(25%-164%)
		13C-1,2,3,7,8-PeCDD		91.4	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.2	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.4	(23%-140%)
		13C-OCDD		71.5	(17%-157%)
		13C-2,3,7,8-TCDF		88.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		83.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		84.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		72.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		71.9	(26%-138%)
37Cl-2,3,7,8-TCDD		114	(35%-197%)		
19712004	SB03-0.5-3	13C-2,3,7,8-TCDD		95.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		102	(25%-181%)

**Hi-Res Dioxins/Furans
Surrogate Recovery Report**

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712004	SB03-0.5-3	13C-1,2,3,4,7,8-HxCDD		79.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		81.0	(23%-140%)
		13C-OCDD		73.8	(17%-157%)
		13C-2,3,7,8-TCDF		88.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.2	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		114	(35%-197%)
		19712005	SB03-3-5	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				108	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				82.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				86.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				86.2	(23%-140%)
13C-OCDD				78.3	(17%-157%)
13C-2,3,7,8-TCDF				91.9	(24%-169%)
13C-1,2,3,7,8-PeCDF				99.5	(24%-185%)
13C-2,3,4,7,8-PeCDF				97.6	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				82.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				83.9	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				83.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				81.4	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				78.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				78.2	(26%-138%)
37Cl-2,3,7,8-TCDD		122	(35%-197%)		
19712006	SB04-0-3	13C-2,3,7,8-TCDD		93.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		97.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		82.6	(23%-140%)
		13C-OCDD		75.0	(17%-157%)
		13C-2,3,7,8-TCDF		86.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		82.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		78.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.4	(26%-138%)
37Cl-2,3,7,8-TCDD		108	(35%-197%)		
19712007	SB05-0.5-3	13C-2,3,7,8-TCDD		96.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		104	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		87.5	(32%-141%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712007	SB05-0.5-3	13C-1,2,3,6,7,8-HxCDD		93.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.6	(23%-140%)
		13C-OCDD		84.5	(17%-157%)
		13C-2,3,7,8-TCDF		92.4	(24%-169%)
		13C-1,2,3,7,8-PeCDF		94.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		92.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		87.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		89.0	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		89.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		84.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		86.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		103	(35%-197%)
		19712008	SB05-3-10	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				113	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				85.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				92.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				95.5	(23%-140%)
13C-OCDD				84.3	(17%-157%)
13C-2,3,7,8-TCDF				98.4	(24%-169%)
13C-1,2,3,7,8-PeCDF				101	(24%-185%)
13C-2,3,4,7,8-PeCDF				102	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				86.8	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				86.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				91.3	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				87.8	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				87.0	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		85.7	(26%-138%)		
37Cl-2,3,7,8-TCDD		109	(35%-197%)		
19712009	SB06-0-3	13C-2,3,7,8-TCDD		96.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		97.7	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.6	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		71.7	(23%-140%)
		13C-OCDD		45.2	(17%-157%)
		13C-2,3,7,8-TCDF		91.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		89.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		84.1	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		86.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		77.8	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.5	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		70.3	(26%-138%)		
37Cl-2,3,7,8-TCDD		106	(35%-197%)		
19712010	SB07-0.5-3	13C-2,3,7,8-TCDD		94.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		101	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		85.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		85.5	(28%-130%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712010	SB07-0.5-3	13C-1,2,3,4,6,7,8-HpCDD		86.4	(23%-140%)
		13C-OCDD		77.0	(17%-157%)
		13C-2,3,7,8-TCDF		90.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		90.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		83.5	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		84.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		87.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.2	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.2	(26%-138%)
		37Cl-2,3,7,8-TCDD		112	(35%-197%)
		19712011	SB07-3-6	13C-2,3,7,8-TCDD	
13C-1,2,3,7,8-PeCDD				86.7	(25%-181%)
13C-1,2,3,4,7,8-HxCDD				78.1	(32%-141%)
13C-1,2,3,6,7,8-HxCDD				84.2	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD				77.7	(23%-140%)
13C-OCDD				68.2	(17%-157%)
13C-2,3,7,8-TCDF				80.3	(24%-169%)
13C-1,2,3,7,8-PeCDF				81.0	(24%-185%)
13C-2,3,4,7,8-PeCDF				77.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF				70.9	(26%-152%)
13C-1,2,3,6,7,8-HxCDF				80.5	(26%-123%)
13C-2,3,4,6,7,8-HxCDF				77.6	(28%-136%)
13C-1,2,3,7,8,9-HxCDF				72.7	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF				73.2	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF				68.3	(26%-138%)
37Cl-2,3,7,8-TCDD		99.3	(35%-197%)		
19712012	SB08-0-3	13C-2,3,7,8-TCDD		92.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		94.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.3	(23%-140%)
		13C-OCDD		85.0	(17%-157%)
		13C-2,3,7,8-TCDF		84.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		86.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.3	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		79.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.8	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		75.7	(26%-138%)
37Cl-2,3,7,8-TCDD		99.3	(35%-197%)		
19712014	DU-01	13C-2,3,7,8-TCDD		92.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		94.2	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		89.1	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.8	(23%-140%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712014	DU-01	13C-OCDD		74.7	(17%-157%)
		13C-2,3,7,8-TCDF		87.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		71.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.7	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		76.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		75.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.7	(35%-197%)
19712015	DU-02	13C-2,3,7,8-TCDD		93.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		98.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		88.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.3	(23%-140%)
		13C-OCDD		89.2	(17%-157%)
		13C-2,3,7,8-TCDF		89.1	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		91.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		77.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		81.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		83.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		82.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		83.6	(26%-138%)
37Cl-2,3,7,8-TCDD		97.2	(35%-197%)		
19712016	DU-03	13C-2,3,7,8-TCDD		94.3	(25%-164%)
		13C-1,2,3,7,8-PeCDD		99.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		86.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		90.0	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		93.3	(23%-140%)
		13C-OCDD		88.9	(17%-157%)
		13C-2,3,7,8-TCDF		92.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		91.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		93.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		80.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		83.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		85.2	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.5	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		80.2	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		85.7	(26%-138%)
37Cl-2,3,7,8-TCDD		104	(35%-197%)		
19712017	DU-04	13C-2,3,7,8-TCDD		82.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		73.1	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		81.1	(23%-140%)
		13C-OCDD		73.3	(17%-157%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712017	DU-04	13C-2,3,7,8-TCDF		77.3	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.3	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		72.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		71.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		68.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		73.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		89.9	(35%-197%)
19712018	DU-05	13C-2,3,7,8-TCDD		74.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		77.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		70.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		70.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		78.9	(23%-140%)
		13C-OCDD		77.6	(17%-157%)
		13C-2,3,7,8-TCDF		69.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		70.8	(24%-185%)
		13C-2,3,4,7,8-PeCDF		70.1	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		64.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		67.9	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		67.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		69.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		68.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		68.2	(26%-138%)
37Cl-2,3,7,8-TCDD		101	(35%-197%)		
19712019	DU-06	13C-2,3,7,8-TCDD		77.8	(25%-164%)
		13C-1,2,3,7,8-PeCDD		80.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		71.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		75.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		81.8	(23%-140%)
		13C-OCDD		75.6	(17%-157%)
		13C-2,3,7,8-TCDF		73.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		75.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		77.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		67.4	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		70.3	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		71.0	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		71.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		70.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		71.0	(26%-138%)
37Cl-2,3,7,8-TCDD		98.6	(35%-197%)		
19712020	DU-07	13C-2,3,7,8-TCDD		90.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		93.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		82.9	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.3	(23%-140%)
		13C-OCDD		75.9	(17%-157%)
		13C-2,3,7,8-TCDF		85.9	(24%-169%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712020	DU-07	13C-1,2,3,7,8-PeCDF		87.6	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.0	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.6	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.4	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		81.3	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		80.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.3	(26%-138%)
		37Cl-2,3,7,8-TCDD		98.4	(35%-197%)
19712021	DU-08	13C-2,3,7,8-TCDD		90.2	(25%-164%)
		13C-1,2,3,7,8-PeCDD		95.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		80.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.4	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.1	(23%-140%)
		13C-OCDD		80.5	(17%-157%)
		13C-2,3,7,8-TCDF		86.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.0	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.5	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		75.8	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		79.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		78.3	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.9	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		78.0	(26%-138%)
37Cl-2,3,7,8-TCDD		103	(35%-197%)		
19712022	DU-DUP	13C-2,3,7,8-TCDD		84.4	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		76.2	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		80.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.0	(23%-140%)
		13C-OCDD		79.9	(17%-157%)
		13C-2,3,7,8-TCDF		80.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.5	(24%-185%)
		13C-2,3,4,7,8-PeCDF		83.4	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		72.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		74.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		75.4	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.0	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		76.1	(26%-138%)
37Cl-2,3,7,8-TCDD		95.7	(35%-197%)		
19712023	DU-TRIP	13C-2,3,7,8-TCDD		90.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.6	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		75.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		84.8	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		84.4	(23%-140%)
		13C-OCDD		79.2	(17%-157%)
		13C-2,3,7,8-TCDF		82.8	(24%-169%)
		13C-1,2,3,7,8-PeCDF		88.8	(24%-185%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
19712023	DU-TRIP	13C-2,3,4,7,8-PeCDF		86.2	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		69.0	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		76.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		75.4	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		73.5	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		74.9	(26%-138%)
		37Cl-2,3,7,8-TCDD		107	(35%-197%)
19712013	DUP-01	13C-2,3,7,8-TCDD		87.7	(25%-164%)
		13C-1,2,3,7,8-PeCDD		88.0	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		83.4	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		87.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		85.9	(23%-140%)
		13C-OCDD		81.6	(17%-157%)
		13C-2,3,7,8-TCDF		84.9	(24%-169%)
		13C-1,2,3,7,8-PeCDF		87.9	(24%-185%)
		13C-2,3,4,7,8-PeCDF		87.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		81.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		84.5	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		86.6	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		83.7	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		79.8	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.4	(26%-138%)
		37Cl-2,3,7,8-TCDD		94.0	(35%-197%)
12031957	LCS for batch 49986	13C-2,3,7,8-TCDD		94.5	(20%-175%)
		13C-1,2,3,7,8-PeCDD		95.7	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		82.5	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		83.2	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		87.6	(22%-166%)
		13C-OCDD		82.5	(13%-199%)
		13C-2,3,7,8-TCDF		81.4	(22%-152%)
		13C-1,2,3,7,8-PeCDF		87.4	(21%-192%)
		13C-2,3,4,7,8-PeCDF		88.2	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		74.6	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		76.5	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		80.1	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		82.2	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		74.0	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		83.7	(20%-186%)
		37Cl-2,3,7,8-TCDD		104	(31%-191%)
12031956	MB for batch 49986	13C-2,3,7,8-TCDD		90.0	(25%-164%)
		13C-1,2,3,7,8-PeCDD		92.3	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		79.7	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		81.5	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.9	(23%-140%)
		13C-OCDD		84.1	(17%-157%)
		13C-2,3,7,8-TCDF		80.2	(24%-169%)
		13C-1,2,3,7,8-PeCDF		86.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		88.0	(21%-178%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12031956	MB for batch 49986	13C-1,2,3,4,7,8-HxCDF		72.7	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		75.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.6	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		71.6	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		79.0	(26%-138%)
		37Cl-2,3,7,8-TCDD		102	(35%-197%)
12031958	LCSD for batch 49986	13C-2,3,7,8-TCDD		84.9	(20%-175%)
		13C-1,2,3,7,8-PeCDD		87.6	(21%-227%)
		13C-1,2,3,4,7,8-HxCDD		82.8	(21%-193%)
		13C-1,2,3,6,7,8-HxCDD		82.5	(25%-163%)
		13C-1,2,3,4,6,7,8-HpCDD		88.4	(22%-166%)
		13C-OCDD		87.4	(13%-199%)
		13C-2,3,7,8-TCDF		76.0	(22%-152%)
		13C-1,2,3,7,8-PeCDF		82.1	(21%-192%)
		13C-2,3,4,7,8-PeCDF		82.6	(13%-328%)
		13C-1,2,3,4,7,8-HxCDF		74.8	(19%-202%)
		13C-1,2,3,6,7,8-HxCDF		77.4	(21%-159%)
		13C-2,3,4,6,7,8-HxCDF		80.3	(22%-176%)
		13C-1,2,3,7,8,9-HxCDF		80.5	(17%-205%)
		13C-1,2,3,4,6,7,8-HpCDF		77.3	(21%-158%)
		13C-1,2,3,4,7,8,9-HpCDF		81.8	(20%-186%)
37Cl-2,3,7,8-TCDD		96.3	(31%-191%)		
12031959	SB07-3-6(19712011MS)	13C-2,3,7,8-TCDD		82.9	(25%-164%)
		13C-1,2,3,7,8-PeCDD		86.8	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		82.3	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		86.7	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		88.7	(23%-140%)
		13C-OCDD		86.6	(17%-157%)
		13C-2,3,7,8-TCDF		71.6	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.2	(24%-185%)
		13C-2,3,4,7,8-PeCDF		79.7	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		78.2	(26%-152%)
		13C-1,2,3,6,7,8-HxCDF		78.6	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		82.7	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		81.1	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		77.1	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		82.6	(26%-138%)
37Cl-2,3,7,8-TCDD		91.9	(35%-197%)		
12031960	SB07-3-6(19712011MSD)	13C-2,3,7,8-TCDD		85.6	(25%-164%)
		13C-1,2,3,7,8-PeCDD		87.5	(25%-181%)
		13C-1,2,3,4,7,8-HxCDD		81.8	(32%-141%)
		13C-1,2,3,6,7,8-HxCDD		83.3	(28%-130%)
		13C-1,2,3,4,6,7,8-HpCDD		86.0	(23%-140%)
		13C-OCDD		84.2	(17%-157%)
		13C-2,3,7,8-TCDF		75.0	(24%-169%)
		13C-1,2,3,7,8-PeCDF		80.1	(24%-185%)
		13C-2,3,4,7,8-PeCDF		81.9	(21%-178%)
		13C-1,2,3,4,7,8-HxCDF		76.5	(26%-152%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A2D0663

Matrix Type: SOLID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12031960	SB07-3-6(19712011MSD)	13C-1,2,3,6,7,8-HxCDF		77.1	(26%-123%)
		13C-2,3,4,6,7,8-HxCDF		80.1	(28%-136%)
		13C-1,2,3,7,8,9-HxCDF		79.9	(29%-147%)
		13C-1,2,3,4,6,7,8-HpCDF		76.3	(28%-143%)
		13C-1,2,3,4,7,8,9-HpCDF		80.7	(26%-138%)
		37Cl-2,3,7,8-TCDD		93.0	(35%-197%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: A2D0663
Client ID: LCS for batch 49950
Lab Sample ID: 12031930
Instrument: HRP750
Analyst: CLP

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 05/27/2022 01:10 **Dilution:** 1
Prep Batch ID: 49950
Batch ID: 49956

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	18.9	94.6	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	95.1	95.1	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	98.7	98.7	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	95.9	95.9	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	95.2	95.2	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	95.8	95.8	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	190	94.9	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	18.8	94.2	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	91.1	91.1	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	95.4	95.4	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	94.4	94.4	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	89.1	89.1	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	92.1	92.1	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	94.1	94.1	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	87.5	87.5	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	96.1	96.1	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	187	93.6	63-170

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: A2D0663 **Sample Type:** Laboratory Control Sample Duplicate
Client ID: LCSD for batch 49950 **Matrix:** SOIL
Lab Sample ID: 12031931
Instrument: HRP750 **Analysis Date:** 05/27/2022 01:59 **Dilution:** 1
Analyst: CLP **Prep Batch ID:** 49950
Batch ID: 49956

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	20.7	104	67-158	9.23	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	101	101	70-142	5.94	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	96.8	96.8	70-164	1.98	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	99.8	99.8	76-134	3.99	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	102	102	64-162	6.56	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	96.2	96.2	70-140	0.388	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	190	95.1	78-144	0.224	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	20.4	102	75-158	7.86	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	99.1	99.1	80-134	8.41	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	97.3	97.3	68-160	1.99	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	96.0	96	72-134	1.70	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	94.6	94.6	84-130	6.01	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	95.7	95.7	70-156	3.82	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	101	101	78-130	7.28	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	98.0	98	82-122	11.3	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	95.2	95.2	78-138	0.951	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	192	95.9	63-170	2.46	0-20

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: A2D0663
Client ID: LCS for batch 49986
Lab Sample ID: 12031957
Instrument: HRP750
Analyst: CLP

Sample Type: Laboratory Control Sample
Matrix: SOIL
Analysis Date: 06/17/2022 07:11
Prep Batch ID: 49986
Batch ID: 49988
Dilution: 1

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits
1746-01-6	LCS 2,3,7,8-TCDD	20.0	17.7	88.7	67-158
40321-76-4	LCS 1,2,3,7,8-PeCDD	100	96.6	96.6	70-142
39227-28-6	LCS 1,2,3,4,7,8-HxCDD	100	96.1	96.1	70-164
57653-85-7	LCS 1,2,3,6,7,8-HxCDD	100	95.3	95.3	76-134
19408-74-3	LCS 1,2,3,7,8,9-HxCDD	100	104	104	64-162
35822-46-9	LCS 1,2,3,4,6,7,8-HpCDD	100	93.6	93.6	70-140
3268-87-9	LCS 1,2,3,4,6,7,8,9-OCDD	200	192	96	78-144
51207-31-9	LCS 2,3,7,8-TCDF	20.0	19.7	98.3	75-158
57117-41-6	LCS 1,2,3,7,8-PeCDF	100	93.6	93.6	80-134
57117-31-4	LCS 2,3,4,7,8-PeCDF	100	92.8	92.8	68-160
70648-26-9	LCS 1,2,3,4,7,8-HxCDF	100	96.4	96.4	72-134
57117-44-9	LCS 1,2,3,6,7,8-HxCDF	100	93.5	93.5	84-130
60851-34-5	LCS 2,3,4,6,7,8-HxCDF	100	94.2	94.2	70-156
72918-21-9	LCS 1,2,3,7,8,9-HxCDF	100	94.9	94.9	78-130
67562-39-4	LCS 1,2,3,4,6,7,8-HpCDF	100	94.8	94.8	82-122
55673-89-7	LCS 1,2,3,4,7,8,9-HpCDF	100	94.4	94.4	78-138
39001-02-0	LCS 1,2,3,4,6,7,8,9-OCDF	200	190	94.8	63-170

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: A2D0663 **Sample Type:** Laboratory Control Sample Duplicate
Client ID: LCSD for batch 49986 **Matrix:** SOIL
Lab Sample ID: 12031958
Instrument: HRP750 **Analysis Date:** 06/17/2022 08:50 **Dilution:** 1
Analyst: CLP **Prep Batch ID:** 49986
Batch ID: 49988

CAS No.	Parmname	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD 2,3,7,8-TCDD	20.0	18.4	92.2	67-158	3.86	0-20
40321-76-4	LCSD 1,2,3,7,8-PeCDD	100	99.2	99.2	70-142	2.66	0-20
39227-28-6	LCSD 1,2,3,4,7,8-HxCDD	100	98.8	98.8	70-164	2.84	0-20
57653-85-7	LCSD 1,2,3,6,7,8-HxCDD	100	97.7	97.7	76-134	2.45	0-20
19408-74-3	LCSD 1,2,3,7,8,9-HxCDD	100	103	103	64-162	0.488	0-20
35822-46-9	LCSD 1,2,3,4,6,7,8-HpCDD	100	101	101	70-140	7.43	0-20
3268-87-9	LCSD 1,2,3,4,6,7,8,9-OCDD	200	201	100	78-144	4.53	0-20
51207-31-9	LCSD 2,3,7,8-TCDF	20.0	19.4	96.8	75-158	1.60	0-20
57117-41-6	LCSD 1,2,3,7,8-PeCDF	100	98.7	98.7	80-134	5.27	0-20
57117-31-4	LCSD 2,3,4,7,8-PeCDF	100	99.1	99.1	68-160	6.66	0-20
70648-26-9	LCSD 1,2,3,4,7,8-HxCDF	100	99.2	99.2	72-134	2.81	0-20
57117-44-9	LCSD 1,2,3,6,7,8-HxCDF	100	94.6	94.6	84-130	1.23	0-20
60851-34-5	LCSD 2,3,4,6,7,8-HxCDF	100	97.4	97.4	70-156	3.32	0-20
72918-21-9	LCSD 1,2,3,7,8,9-HxCDF	100	97.1	97.1	78-130	2.31	0-20
67562-39-4	LCSD 1,2,3,4,6,7,8-HpCDF	100	96.4	96.4	82-122	1.64	0-20
55673-89-7	LCSD 1,2,3,4,7,8,9-HpCDF	100	100	100	78-138	6.03	0-20
39001-02-0	LCSD 1,2,3,4,6,7,8,9-OCDF	200	199	99.6	63-170	5.00	0-20

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: A2D0663
Client ID: SB07-3-6(19712011MS)
Lab Sample ID: 12031959
Instrument: HRP750
Analyst: CLP

Sample Type: Matrix Spike
Matrix: SOIL
%Moisture: 22.9
Analysis Date: 06/17/2022 09:40
Prep Batch ID: 49986
Batch ID: 49988
Dilution: 1

CAS No.	Parmname		Sample Conc. pg/g	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	
1746-01-6	MS	2,3,7,8-TCDD	U	0.000	19.7	18.3	92.8	70-130
40321-76-4	MS	1,2,3,7,8-PeCDD	U	0.000	98.3	98.1	99.8	70-130
39227-28-6	MS	1,2,3,4,7,8-HxCDD	U	0.000	98.3	98.8	101	70-130
57653-85-7	MS	1,2,3,6,7,8-HxCDD	U	0.000	98.3	99.4	101	70-130
19408-74-3	MS	1,2,3,7,8,9-HxCDD	U	0.000	98.3	99.5	101	70-130
35822-46-9	MS	1,2,3,4,6,7,8-HpCDD		6.56	98.3	106	101	70-130
3268-87-9	MS	1,2,3,4,6,7,8,9-OCDD		38.1	197	249	107	70-130
51207-31-9	MS	2,3,7,8-TCDF	BJ	0.712	19.7	20.1	98.8	70-130
57117-41-6	MS	1,2,3,7,8-PeCDF	U	0.000	98.3	97.8	99.5	70-130
57117-31-4	MS	2,3,4,7,8-PeCDF	JK	0.552	98.3	97.0	98.1	70-130
70648-26-9	MS	1,2,3,4,7,8-HxCDF	U	0.000	98.3	96.1	97.8	70-130
57117-44-9	MS	1,2,3,6,7,8-HxCDF	U	0.000	98.3	97.1	98.8	70-130
60851-34-5	MS	2,3,4,6,7,8-HxCDF	U	0.000	98.3	95.5	97.1	70-130
72918-21-9	MS	1,2,3,7,8,9-HxCDF	U	0.000	98.3	96.7	98.4	70-130
67562-39-4	MS	1,2,3,4,6,7,8-HpCDF	BJ	2.39	98.3	100	99.4	70-130
55673-89-7	MS	1,2,3,4,7,8,9-HpCDF	U	0.000	98.3	98.7	100	70-130
39001-02-0	MS	1,2,3,4,6,7,8,9-OCDF	J	5.31	197	199	98.5	70-130

Hi-Res Dioxins/Furans
Quality Control Summary
Spike Recovery Report

SDG Number: A2D0663
Client ID: SB07-3-6(19712011MSD)
Lab Sample ID: 12031960
Instrument: HRP750
Analyst: CLP

Sample Type: Matrix Spike Duplicate
Matrix: SOIL
%Moisture: 22.9
Analysis Date: 06/17/2022 10:30 Dilution: 1
Prep Batch ID: 49986
Batch ID: 49988

CAS No.	Parmname		Sample Conc. pg/g	Amount Added pg/g	Spike Conc. pg/g	Recovery %	Acceptance Limits	RPD %	Acceptance Limits	
1746-01-6	MSD	2,3,7,8-TCDD	U	0.000	19.8	19.0	95.8	70-130	3.79	0-20
40321-76-4	MSD	1,2,3,7,8-PeCDD	U	0.000	98.9	99.8	101	70-130	1.72	0-20
39227-28-6	MSD	1,2,3,4,7,8-HxCDD	U	0.000	98.9	103	104	70-130	4.10	0-20
57653-85-7	MSD	1,2,3,6,7,8-HxCDD	U	0.000	98.9	98.9	100	70-130	0.489	0-20
19408-74-3	MSD	1,2,3,7,8,9-HxCDD	U	0.000	98.9	105	106	70-130	5.46	0-20
35822-46-9	MSD	1,2,3,4,6,7,8-HpCDD		6.56	98.9	122	116	70-130	13.8	0-20
3268-87-9	MSD	1,2,3,4,6,7,8,9-OCDD		38.1	198	345	155 *	70-130	32.2 *	0-20
51207-31-9	MSD	2,3,7,8-TCDF	BJ	0.712	19.8	20.6	100	70-130	2.21	0-20
57117-41-6	MSD	1,2,3,7,8-PeCDF	U	0.000	98.9	99.8	101	70-130	1.94	0-20
57117-31-4	MSD	2,3,4,7,8-PeCDF	JK	0.552	98.9	97.8	98.3	70-130	0.868	0-20
70648-26-9	MSD	1,2,3,4,7,8-HxCDF	U	0.000	98.9	96.2	97.2	70-130	0.0198	0-20
57117-44-9	MSD	1,2,3,6,7,8-HxCDF	U	0.000	98.9	94.7	95.7	70-130	2.58	0-20
60851-34-5	MSD	2,3,4,6,7,8-HxCDF	U	0.000	98.9	96.4	97.5	70-130	0.974	0-20
72918-21-9	MSD	1,2,3,7,8,9-HxCDF	U	0.000	98.9	97.7	98.8	70-130	1.03	0-20
67562-39-4	MSD	1,2,3,4,6,7,8-HpCDF	BJ	2.39	98.9	100	98.9	70-130	0.0749	0-20
55673-89-7	MSD	1,2,3,4,7,8,9-HpCDF	U	0.000	98.9	96.3	97.4	70-130	2.46	0-20
39001-02-0	MSD	1,2,3,4,6,7,8,9-OCDF	J	5.31	198	202	99.5	70-130	1.62	0-20

Method Blank Summary

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SDG Number: A2D0663
 Client ID: MB for batch 49950
 Lab Sample ID: 12031929
 Column:

Client: APEX001
 Instrument ID: HRP750
 Prep Date: 25-MAY-22

Matrix: SOIL
 Data File: A23MAY22B_9-3
 Analyzed: 05/27/22 02:49

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 49950	12031930	A23MAY22B_9-1	05/27/22	0110
02 LCSD for batch 49950	12031931	A23MAY22B_9-2	05/27/22	0159
03 SB01-0.5-3	19712001	A23MAY22B_10-2	05/27/22	1345
04 SB02-0-3	19712002	A23MAY22B_10-3	05/27/22	1435
05 SB02-3-7	19712003	A23MAY22B_10-4	05/27/22	1525
06 SB03-0.5-3	19712004	A23MAY22B_10-5	05/27/22	1615
07 SB03-3-5	19712005	A23MAY22B_10-6	05/27/22	1704
08 SB04-0-3	19712006	A23MAY22B_10-7	05/27/22	1754
09 SB04-0-3	19712006	e01jun22a-15	06/01/22	2118
10 SB05-0.5-3	19712007	A23MAY22B_10-8	05/27/22	1844
11 SB05-3-10	19712008	A23MAY22B_10-9	05/27/22	1934
12 SB06-0-3	19712009	A23MAY22B_10-10	05/27/22	2024
13 SB07-0.5-3	19712010	A23MAY22B_10-11	05/27/22	2114

Method Blank Summary

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SDG Number: A2D0663
 Client ID: MB for batch 49986
 Lab Sample ID: 12031956
 Column:

Client: APEX001
 Instrument ID: HRP750
 Prep Date: 31-MAY-22

Matrix: SOIL
 Data File: A16JUN22A_3-2
 Analyzed: 06/17/22 08:00

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 49986	12031957	A16JUN22A_3-1	06/17/22	0711
02 LCSD for batch 49986	12031958	A16JUN22A_3-3	06/17/22	0850
03 SB07-3-6(19712011MS)	12031959	A16JUN22A_3-4	06/17/22	0940
04 SB07-3-6(19712011MSD)	12031960	A16JUN22A_3-5	06/17/22	1030
05 SB07-3-6	19712011	A05JUN22A-3	06/05/22	1351
06 SB08-0-3	19712012	A05JUN22A-4	06/05/22	1441
07 SB08-0-3	19712012	e10jun22a-5	06/10/22	1122
08 DUP-01	19712013	A07JUN22B-10	06/07/22	2327
09 DUP-01	19712013	e08jun22c_2-5	06/09/22	0435
10 DU-01	19712014	A05JUN22A-6	06/05/22	1621
11 DU-01	19712014	e08jun22c_2-6	06/09/22	0501
12 DU-02	19712015	A05JUN22A-7	06/05/22	1711
13 DU-02	19712015	e08jun22c_2-7	06/09/22	0527
14 DU-03	19712016	A05JUN22A-8	06/05/22	1801
15 DU-03	19712016	e08jun22c_2-8	06/09/22	0552
16 DU-04	19712017	A05JUN22A-9	06/05/22	1851
17 DU-04	19712017	e08jun22c_2-9	06/09/22	0618
18 DU-05	19712018	A05JUN22A-10	06/05/22	1941
19 DU-05	19712018	e08jun22c_2-10	06/09/22	0643
20 DU-06	19712019	A05JUN22A-11	06/05/22	2031
21 DU-06	19712019	e08jun22c_2-11	06/09/22	0709
22 DU-07	19712020	A05JUN22A-12	06/05/22	2121
23 DU-08	19712021	A05JUN22A-13	06/05/22	2210
24 DU-DUP	19712022	A05JUN22A-14	06/05/22	2300
25 DU-DUP	19712022	e08jun22c_2-12	06/09/22	0735
26 DU-TRIP	19712023	A05JUN22A_2-2	06/06/22	0137
27 DU-TRIP	19712023	e24jun22d-5	06/24/22	1453

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031929		Matrix: SOIL
Client Sample: QC for batch 49950		
Client ID: MB for batch 49950		Prep Basis: As Received
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 02:49	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_9-3		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.0926	pg/g	0.0926	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.121	pg/g	0.121	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.169	pg/g	0.169	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.155	pg/g	0.155	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.163	pg/g	0.163	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	0.242	pg/g	0.242	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	0.514	pg/g	0.324	10.0
51207-31-9	2,3,7,8-TCDF	U	0.120	pg/g	0.120	1.00
57117-41-6	1,2,3,7,8-PeCDF	U	0.137	pg/g	0.137	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.128	pg/g	0.128	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	U	0.145	pg/g	0.145	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.143	pg/g	0.143	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.145	pg/g	0.145	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.220	pg/g	0.220	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.222	pg/g	0.149	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.258	pg/g	0.258	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.306	pg/g	0.306	10.0
41903-57-5	Total TeCDD	U	0.0926	pg/g	0.0926	1.00
36088-22-9	Total PeCDD	U	0.121	pg/g	0.121	5.00
34465-46-8	Total HxCDD	U	0.155	pg/g	0.155	5.00
37871-00-4	Total HpCDD	U	0.242	pg/g	0.242	5.00
30402-14-3	Total TeCDF	U	0.120	pg/g	0.120	1.00
30402-15-4	Total PeCDF	JK	0.338	pg/g	0.0694	5.00
55684-94-1	Total HxCDF	JK	0.242	pg/g	0.143	5.00
38998-75-3	Total HpCDF	J	0.222	pg/g	0.149	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.00237	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.196	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		187	200	pg/g	93.7	(25%-164%)
13C-1,2,3,7,8-PeCDD		166	200	pg/g	82.9	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		161	200	pg/g	80.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	200	pg/g	85.0	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		148	200	pg/g	74.1	(23%-140%)
13C-OCDD		258	400	pg/g	64.4	(17%-157%)
13C-2,3,7,8-TCDF		170	200	pg/g	85.1	(24%-169%)
13C-1,2,3,7,8-PeCDF		164	200	pg/g	81.8	(24%-185%)
13C-2,3,4,7,8-PeCDF		162	200	pg/g	81.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		155	200	pg/g	77.4	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		171	200	pg/g	85.4	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		168	200	pg/g	83.8	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		161	200	pg/g	80.3	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031929		Matrix: SOIL
Client Sample: QC for batch 49950		
Client ID: MB for batch 49950		Prep Basis: As Received
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 02:49	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_9-3		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery% Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			143	200	pg/g	71.7 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			135	200	pg/g	67.5 (26%-138%)
37Cl-2,3,7,8-TCDD			21.3	20.0	pg/g	106 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031930		Matrix: SOIL
Client Sample: QC for batch 49950		
Client ID: LCS for batch 49950		Prep Basis: As Received
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 01:10	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_9-1		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.9	pg/g	0.157	1.00
40321-76-4	1,2,3,7,8-PeCDD		95.1	pg/g	0.466	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		98.7	pg/g	1.14	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		95.9	pg/g	0.988	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		95.2	pg/g	1.07	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		95.8	pg/g	1.32	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		190	pg/g	2.32	10.0
51207-31-9	2,3,7,8-TCDF		18.8	pg/g	0.158	1.00
57117-41-6	1,2,3,7,8-PeCDF		91.1	pg/g	0.578	5.00
57117-31-4	2,3,4,7,8-PeCDF		95.4	pg/g	0.536	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		94.4	pg/g	1.13	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		89.1	pg/g	1.14	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		92.1	pg/g	1.13	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		94.1	pg/g	1.84	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		87.5	pg/g	0.962	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		96.1	pg/g	1.62	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		187	pg/g	2.64	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		186	200	pg/g	92.8	(20%-175%)
13C-1,2,3,7,8-PeCDD		172	200	pg/g	86.2	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		161	200	pg/g	80.7	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		186	200	pg/g	93.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		158	200	pg/g	79.2	(22%-166%)
13C-OCDD		276	400	pg/g	69.1	(13%-199%)
13C-2,3,7,8-TCDF		179	200	pg/g	89.5	(22%-152%)
13C-1,2,3,7,8-PeCDF		170	200	pg/g	84.9	(21%-192%)
13C-2,3,4,7,8-PeCDF		162	200	pg/g	81.2	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		160	200	pg/g	80.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		180	200	pg/g	90.0	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		182	200	pg/g	90.8	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		165	200	pg/g	82.6	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		161	200	pg/g	80.4	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		141	200	pg/g	70.5	(20%-186%)
37Cl-2,3,7,8-TCDD		20.7	20.0	pg/g	103	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031931		Matrix: SOIL
Client Sample: QC for batch 49950		
Client ID: LCSO for batch 49950		Prep Basis: As Received
Batch ID: 49956	Method: EPA Method 1613B	
Run Date: 05/27/2022 01:59	Analyst: CLP	Instrument: HRP750
Data File: A23MAY22B_9-2		Dilution: 1
Prep Batch: 49950	Prep Method: SW846 3540C	
Prep Date: 25-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		20.7	pg/g	0.141	1.00
40321-76-4	1,2,3,7,8-PeCDD		101	pg/g	0.284	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		96.8	pg/g	0.728	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		99.8	pg/g	0.726	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		102	pg/g	0.738	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		96.2	pg/g	1.31	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		190	pg/g	2.32	10.0
51207-31-9	2,3,7,8-TCDF		20.4	pg/g	0.158	1.00
57117-41-6	1,2,3,7,8-PeCDF		99.1	pg/g	0.514	5.00
57117-31-4	2,3,4,7,8-PeCDF		97.3	pg/g	0.464	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		96.0	pg/g	0.884	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		94.6	pg/g	0.832	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		95.7	pg/g	0.890	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		101	pg/g	1.39	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		98.0	pg/g	1.25	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		95.2	pg/g	2.22	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		192	pg/g	1.59	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	85.1	(20%-175%)
13C-1,2,3,7,8-PeCDD		152	200	pg/g	75.8	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		152	200	pg/g	76.2	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		168	200	pg/g	84.1	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		149	200	pg/g	74.3	(22%-166%)
13C-OCDD		251	400	pg/g	62.8	(13%-199%)
13C-2,3,7,8-TCDF		160	200	pg/g	80.1	(22%-152%)
13C-1,2,3,7,8-PeCDF		148	200	pg/g	74.1	(21%-192%)
13C-2,3,4,7,8-PeCDF		147	200	pg/g	73.7	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		152	200	pg/g	76.0	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		165	200	pg/g	82.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		167	200	pg/g	83.4	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		150	200	pg/g	74.9	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		140	200	pg/g	70.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		133	200	pg/g	66.6	(20%-186%)
37Cl-2,3,7,8-TCDD		20.6	20.0	pg/g	103	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
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Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031956		Matrix: SOIL
Client Sample: QC for batch 49986		
Client ID: MB for batch 49986		Prep Basis: As Received
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/17/2022 08:00	Analyst: CLP	Instrument: HRP750
Data File: A16JUN22A_3-2		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	0.144	pg/g	0.144	1.00
40321-76-4	1,2,3,7,8-PeCDD	U	0.183	pg/g	0.183	5.00
39227-28-6	1,2,3,4,7,8-HxCDD	U	0.114	pg/g	0.114	5.00
57653-85-7	1,2,3,6,7,8-HxCDD	U	0.106	pg/g	0.106	5.00
19408-74-3	1,2,3,7,8,9-HxCDD	U	0.111	pg/g	0.111	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.166	pg/g	0.121	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK	0.356	pg/g	0.163	10.0
51207-31-9	2,3,7,8-TCDF	JK	0.198	pg/g	0.180	1.00
57117-41-6	1,2,3,7,8-PeCDF	JK	0.228	pg/g	0.214	5.00
57117-31-4	2,3,4,7,8-PeCDF	U	0.195	pg/g	0.195	5.00
70648-26-9	1,2,3,4,7,8-HxCDF	JK	0.318	pg/g	0.124	5.00
57117-44-9	1,2,3,6,7,8-HxCDF	U	0.128	pg/g	0.128	5.00
60851-34-5	2,3,4,6,7,8-HxCDF	U	0.125	pg/g	0.125	5.00
72918-21-9	1,2,3,7,8,9-HxCDF	U	0.169	pg/g	0.169	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK	0.516	pg/g	0.0974	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	0.141	pg/g	0.141	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	0.198	pg/g	0.198	10.0
41903-57-5	Total TeCDD	U	0.144	pg/g	0.144	1.00
36088-22-9	Total PeCDD	U	0.183	pg/g	0.183	5.00
34465-46-8	Total HxCDD	U	0.106	pg/g	0.106	5.00
37871-00-4	Total HpCDD	J	0.166	pg/g	0.121	5.00
30402-14-3	Total TeCDF	JK	0.198	pg/g	0.180	1.00
30402-15-4	Total PeCDF	JK	0.858	pg/g	0.0586	5.00
55684-94-1	Total HxCDF	JK	0.648	pg/g	0.124	5.00
38998-75-3	Total HpCDF	JK	0.516	pg/g	0.0974	5.00
3333-30-2	TEQ WHO2005 ND=0 with EMPCs		0.0654	pg/g		
3333-30-3	TEQ WHO2005 ND=0.5 with EMPCs		0.296	pg/g		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		180	200	pg/g	90.0	(25%-164%)
13C-1,2,3,7,8-PeCDD		185	200	pg/g	92.3	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		159	200	pg/g	79.7	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		163	200	pg/g	81.5	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	200	pg/g	86.9	(23%-140%)
13C-OCDD		336	400	pg/g	84.1	(17%-157%)
13C-2,3,7,8-TCDF		160	200	pg/g	80.2	(24%-169%)
13C-1,2,3,7,8-PeCDF		172	200	pg/g	86.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		176	200	pg/g	88.0	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		145	200	pg/g	72.7	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		151	200	pg/g	75.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		161	200	pg/g	80.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		163	200	pg/g	81.6	(29%-147%)

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031956		Matrix: SOIL
Client Sample: QC for batch 49986		
Client ID: MB for batch 49986		Prep Basis: As Received
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/17/2022 08:00	Analyst: CLP	Instrument: HRP750
Data File: A16JUN22A_3-2		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery% Acceptable Limits
13C-1,2,3,4,6,7,8-HpCDF			143	200	pg/g	71.6 (28%-143%)
13C-1,2,3,4,7,8,9-HpCDF			158	200	pg/g	79.0 (26%-138%)
37Cl-2,3,7,8-TCDD			20.5	20.0	pg/g	102 (35%-197%)

Comments:
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031957		Matrix: SOIL
Client Sample: QC for batch 49986		
Client ID: LCS for batch 49986		Prep Basis: As Received
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/17/2022 07:11	Analyst: CLP	Instrument: HRP750
Data File: A16JUN22A_3-1		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		17.7	pg/g	0.143	1.00
40321-76-4	1,2,3,7,8-PeCDD		96.6	pg/g	0.378	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		96.1	pg/g	0.482	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		95.3	pg/g	0.452	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		104	pg/g	0.472	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		93.6	pg/g	0.684	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		192	pg/g	0.896	10.0
51207-31-9	2,3,7,8-TCDF		19.7	pg/g	0.292	1.00
57117-41-6	1,2,3,7,8-PeCDF		93.6	pg/g	0.434	5.00
57117-31-4	2,3,4,7,8-PeCDF		92.8	pg/g	0.408	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		96.4	pg/g	0.586	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		93.5	pg/g	0.556	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		94.2	pg/g	0.564	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		94.9	pg/g	0.772	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		94.8	pg/g	0.722	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		94.4	pg/g	1.01	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		190	pg/g	1.01	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		189	200	pg/g	94.5	(20%-175%)
13C-1,2,3,7,8-PeCDD		191	200	pg/g	95.7	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		165	200	pg/g	82.5	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		166	200	pg/g	83.2	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		175	200	pg/g	87.6	(22%-166%)
13C-OCDD		330	400	pg/g	82.5	(13%-199%)
13C-2,3,7,8-TCDF		163	200	pg/g	81.4	(22%-152%)
13C-1,2,3,7,8-PeCDF		175	200	pg/g	87.4	(21%-192%)
13C-2,3,4,7,8-PeCDF		176	200	pg/g	88.2	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		149	200	pg/g	74.6	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		153	200	pg/g	76.5	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		160	200	pg/g	80.1	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		164	200	pg/g	82.2	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		148	200	pg/g	74.0	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		167	200	pg/g	83.7	(20%-186%)
37Cl-2,3,7,8-TCDD		20.8	20.0	pg/g	104	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031958		Matrix: SOIL
Client Sample: QC for batch 49986		
Client ID: LCSDD for batch 49986		Prep Basis: As Received
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/17/2022 08:50	Analyst: CLP	Instrument: HRP750
Data File: A16JUN22A_3-3		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 10 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.4	pg/g	0.240	1.00
40321-76-4	1,2,3,7,8-PeCDD		99.2	pg/g	0.428	5.00
39227-28-6	1,2,3,4,7,8-HxCDD		98.8	pg/g	0.934	5.00
57653-85-7	1,2,3,6,7,8-HxCDD		97.7	pg/g	0.874	5.00
19408-74-3	1,2,3,7,8,9-HxCDD		103	pg/g	0.916	5.00
35822-46-9	1,2,3,4,6,7,8-HpCDD		101	pg/g	0.968	5.00
3268-87-9	1,2,3,4,6,7,8,9-OCDD		201	pg/g	1.81	10.0
51207-31-9	2,3,7,8-TCDF		19.4	pg/g	0.306	1.00
57117-41-6	1,2,3,7,8-PeCDF		98.7	pg/g	0.540	5.00
57117-31-4	2,3,4,7,8-PeCDF		99.1	pg/g	0.522	5.00
70648-26-9	1,2,3,4,7,8-HxCDF		99.2	pg/g	0.934	5.00
57117-44-9	1,2,3,6,7,8-HxCDF		94.6	pg/g	0.928	5.00
60851-34-5	2,3,4,6,7,8-HxCDF		97.4	pg/g	1.00	5.00
72918-21-9	1,2,3,7,8,9-HxCDF		97.1	pg/g	1.44	5.00
67562-39-4	1,2,3,4,6,7,8-HpCDF		96.4	pg/g	0.768	5.00
55673-89-7	1,2,3,4,7,8,9-HpCDF		100	pg/g	1.13	5.00
39001-02-0	1,2,3,4,6,7,8,9-OCDF		199	pg/g	1.37	10.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		170	200	pg/g	84.9	(20%-175%)
13C-1,2,3,7,8-PeCDD		175	200	pg/g	87.6	(21%-227%)
13C-1,2,3,4,7,8-HxCDD		166	200	pg/g	82.8	(21%-193%)
13C-1,2,3,6,7,8-HxCDD		165	200	pg/g	82.5	(25%-163%)
13C-1,2,3,4,6,7,8-HpCDD		177	200	pg/g	88.4	(22%-166%)
13C-OCDD		350	400	pg/g	87.4	(13%-199%)
13C-2,3,7,8-TCDF		152	200	pg/g	76.0	(22%-152%)
13C-1,2,3,7,8-PeCDF		164	200	pg/g	82.1	(21%-192%)
13C-2,3,4,7,8-PeCDF		165	200	pg/g	82.6	(13%-328%)
13C-1,2,3,4,7,8-HxCDF		150	200	pg/g	74.8	(19%-202%)
13C-1,2,3,6,7,8-HxCDF		155	200	pg/g	77.4	(21%-159%)
13C-2,3,4,6,7,8-HxCDF		161	200	pg/g	80.3	(22%-176%)
13C-1,2,3,7,8,9-HxCDF		161	200	pg/g	80.5	(17%-205%)
13C-1,2,3,4,6,7,8-HpCDF		155	200	pg/g	77.3	(21%-158%)
13C-1,2,3,4,7,8,9-HpCDF		164	200	pg/g	81.8	(20%-186%)
37Cl-2,3,7,8-TCDD		19.3	20.0	pg/g	96.3	(31%-191%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

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SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031959	Date Collected: 04/11/2022 13:25	Matrix: SOIL
Client Sample: QC for batch 49986	Date Received: 04/26/2022 10:49	%Moisture: 22.9
Client ID: SB07-3-6(19712011MS)		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/17/2022 09:40	Analyst: CLP	Instrument: HRP750
Data File: A16JUN22A_3-4		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.19 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		18.3	pg/g	0.344	0.983
40321-76-4	1,2,3,7,8-PeCDD		98.1	pg/g	0.586	4.91
39227-28-6	1,2,3,4,7,8-HxCDD		98.8	pg/g	0.625	4.91
57653-85-7	1,2,3,6,7,8-HxCDD		99.4	pg/g	0.605	4.91
19408-74-3	1,2,3,7,8,9-HxCDD		99.5	pg/g	0.623	4.91
35822-46-9	1,2,3,4,6,7,8-HpCDD		106	pg/g	0.983	4.91
3268-87-9	1,2,3,4,6,7,8,9-OCDD		249	pg/g	1.32	9.83
51207-31-9	2,3,7,8-TCDF		20.1	pg/g	0.531	0.983
57117-41-6	1,2,3,7,8-PeCDF		97.8	pg/g	0.548	4.91
57117-31-4	2,3,4,7,8-PeCDF		97.0	pg/g	0.523	4.91
70648-26-9	1,2,3,4,7,8-HxCDF		96.1	pg/g	0.604	4.91
57117-44-9	1,2,3,6,7,8-HxCDF		97.1	pg/g	0.625	4.91
60851-34-5	2,3,4,6,7,8-HxCDF		95.5	pg/g	0.631	4.91
72918-21-9	1,2,3,7,8,9-HxCDF		96.7	pg/g	0.930	4.91
67562-39-4	1,2,3,4,6,7,8-HpCDF		100	pg/g	0.647	4.91
55673-89-7	1,2,3,4,7,8,9-HpCDF		98.7	pg/g	1.00	4.91
39001-02-0	1,2,3,4,6,7,8,9-OCDF		199	pg/g	1.18	9.83

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		163	197	pg/g	82.9	(25%-164%)
13C-1,2,3,7,8-PeCDD		171	197	pg/g	86.8	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	197	pg/g	82.3	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		170	197	pg/g	86.7	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		174	197	pg/g	88.7	(23%-140%)
13C-OCDD		341	393	pg/g	86.6	(17%-157%)
13C-2,3,7,8-TCDF		141	197	pg/g	71.6	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	197	pg/g	80.2	(24%-185%)
13C-2,3,4,7,8-PeCDF		157	197	pg/g	79.7	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		154	197	pg/g	78.2	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		154	197	pg/g	78.6	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		163	197	pg/g	82.7	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		159	197	pg/g	81.1	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		152	197	pg/g	77.1	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		162	197	pg/g	82.6	(26%-138%)
37Cl-2,3,7,8-TCDD		18.1	19.7	pg/g	91.9	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

**Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary**

Page 1 of 1

SDG Number: A2D0663	Client: APEX001	Project: APEX00122
Lab Sample ID: 12031960	Date Collected: 04/11/2022 13:25	Matrix: SOIL
Client Sample: QC for batch 49986	Date Received: 04/26/2022 10:49	%Moisture: 22.9
Client ID: SB07-3-6(19712011MSD)		Prep Basis: Dry Weight
Batch ID: 49988	Method: EPA Method 1613B	
Run Date: 06/17/2022 10:30	Analyst: CLP	Instrument: HRP750
Data File: A16JUN22A_3-5		Dilution: 1
Prep Batch: 49986	Prep Method: SW846 3540C	
Prep Date: 31-MAY-22	Prep Aliquot: 13.11 g	

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		19.0	pg/g	0.309	0.989
40321-76-4	1,2,3,7,8-PeCDD		99.8	pg/g	0.500	4.94
39227-28-6	1,2,3,4,7,8-HxCDD		103	pg/g	0.858	4.94
57653-85-7	1,2,3,6,7,8-HxCDD		98.9	pg/g	0.833	4.94
19408-74-3	1,2,3,7,8,9-HxCDD		105	pg/g	0.856	4.94
35822-46-9	1,2,3,4,6,7,8-HpCDD		122	pg/g	1.26	4.94
3268-87-9	1,2,3,4,6,7,8,9-OCDD		345	pg/g	1.77	9.89
51207-31-9	2,3,7,8-TCDF		20.6	pg/g	0.635	0.989
57117-41-6	1,2,3,7,8-PeCDF		99.8	pg/g	0.572	4.94
57117-31-4	2,3,4,7,8-PeCDF		97.8	pg/g	0.500	4.94
70648-26-9	1,2,3,4,7,8-HxCDF		96.2	pg/g	1.12	4.94
57117-44-9	1,2,3,6,7,8-HxCDF		94.7	pg/g	1.09	4.94
60851-34-5	2,3,4,6,7,8-HxCDF		96.4	pg/g	1.07	4.94
72918-21-9	1,2,3,7,8,9-HxCDF		97.7	pg/g	1.48	4.94
67562-39-4	1,2,3,4,6,7,8-HpCDF		100	pg/g	0.686	4.94
55673-89-7	1,2,3,4,7,8,9-HpCDF		96.3	pg/g	1.02	4.94
39001-02-0	1,2,3,4,6,7,8,9-OCDF		202	pg/g	1.89	9.89

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		169	198	pg/g	85.6	(25%-164%)
13C-1,2,3,7,8-PeCDD		173	198	pg/g	87.5	(25%-181%)
13C-1,2,3,4,7,8-HxCDD		162	198	pg/g	81.8	(32%-141%)
13C-1,2,3,6,7,8-HxCDD		165	198	pg/g	83.3	(28%-130%)
13C-1,2,3,4,6,7,8-HpCDD		170	198	pg/g	86.0	(23%-140%)
13C-OCDD		333	396	pg/g	84.2	(17%-157%)
13C-2,3,7,8-TCDF		148	198	pg/g	75.0	(24%-169%)
13C-1,2,3,7,8-PeCDF		158	198	pg/g	80.1	(24%-185%)
13C-2,3,4,7,8-PeCDF		162	198	pg/g	81.9	(21%-178%)
13C-1,2,3,4,7,8-HxCDF		151	198	pg/g	76.5	(26%-152%)
13C-1,2,3,6,7,8-HxCDF		153	198	pg/g	77.1	(26%-123%)
13C-2,3,4,6,7,8-HxCDF		158	198	pg/g	80.1	(28%-136%)
13C-1,2,3,7,8,9-HxCDF		158	198	pg/g	79.9	(29%-147%)
13C-1,2,3,4,6,7,8-HpCDF		151	198	pg/g	76.3	(28%-143%)
13C-1,2,3,4,7,8,9-HpCDF		160	198	pg/g	80.7	(26%-138%)
37Cl-2,3,7,8-TCDD		18.4	19.8	pg/g	93.0	(35%-197%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Appendix E DATA VALIDATION REPORT



DATA VALIDATION SUMMARY REPORT

GENERAL INFORMATION:

Lab Name:	APEX Laboratories
Lab SDG/Project/Work Order:	A2D0663
Project Name:	Ko 'Kwel Wharf Property Tremont Street, North Bend, Oregon
Stantec Project Number:	185751418
Client:	MEDC Brownfield Grant
Validator Name:	James Tezak
Date of Validation:	June 28, 2022

SAMPLE INFORMATION:

Number of Samples:	53
Matrix:	28 Soil, 8 Groundwater,
Number of Trip Blanks:	9
Number of Equipment Blanks:	1
Number of Field Duplicates:	2
Number of Field Triplicates:	1
Date of Sample Collection:	April 11-15, 2022

<u>Sample Name:</u>	<u>Lab Sample ID</u>	<u>Sample Name:</u>	<u>Lab Sample ID</u>
SB01-0.5-3	A2D0663-01	DU-03	A2D0663-28
SB02-0-3	A2D0663-02	DU-04	A2D0663-29
SB02-3-7	A2D0663-03	DU-04	A2D0663-30
SB03-0.5-3	A2D0663-04	DU-05	A2D0663-31
SB03-3-5	A2D0663-05	DU-05	A2D0663-32
SB04-0-3	A2D0663-06	DU-06	A2D0663-33
SB05-0.5-3	A2D0663-07	DU-06	A2D0663-34
SB05-3-10	A2D0663-08	DU-07	A2D0663-35
SB06-0-3	A2D0663-09	DU-07	A2D0663-36
SB07-0.5-3	A2D0663-10	DU-08	A2D0663-37
SB07-3-6	A2D0663-11	DU-08	A2D0663-38
SB08-0-3	A2D0663-12	DU-DUP	A2D0663-39
SB-1	A2D0663-13	DU-DUP	A2D0663-40
SB-2	A2D0663-14	DU-TRIP	A2D0663-41
SB-3	A2D0663-15	DU-TRIP	A2D0663-42
SB-4	A2D0663-16	EB-041322	A2D0663-43
SB-5	A2D0663-17	TB-01	A2D0663-44
SB-6	A2D0663-18	TB-02	A2D0663-45
SB-7	A2D0663-19	TB-03	A2D0663-46
SB-8	A2D0663-20	TB-04	A2D0663-47
DUP-01	A2D0663-21	TB-05	A2D0663-48
DUP-X	A2D0663-22	TB-06	A2D0663-49
DU-01	A2D0663-23	TB-07	A2D0663-50
DU-01	A2D0663-24	TB-08	A2D0663-51
DU-02	A2D0663-25	TB-09	A2D0663-52
DU-02	A2D0663-26		
DU-03	A2D0663-27		

GENERAL DATA VALIDATION:

<p><u>Case Narrative:</u> The laboratory did not identify any non-conformances in the case narrative.</p>
<p><u>Chain of Custody:</u> The trip blank TB-10 was listed on page 5 of 5 of the chains of custody (COC), but was not received at the laboratory. Analysis of dioxins/furans was subcontracted to another laboratory and results were not included in the deliverable for sample delivery group (SDG) A2D0663. Otherwise, the COCs were complete, and all samples were analyzed as requested.</p>
<p><u>Sample Receipt:</u> The samples were received within the acceptable temperature range of 0° - 6° C. Several discrepancies were noted between the COCs and sample containers at the time of receipt: Multiple samples were received with loose lids and one or more containers were inundated with water from the cooler. For the soil sample DUP-01, no sample collection time was recorded on the bottle labels and no containers labeled as field preserved with MeOH were received. The sample was re-extracted in-house at the laboratory. The trip blank TB-10 listed on page 5 of 5 of the COCs was not received. Sample containers for trip blank samples TB-01 through TB-08 were not labeled to be able to distinguish individual samples. The laboratory assigned sample IDs TB-01 through TB-09 to the trip blanks at random. For the samples TB#3081, SB-1, SB-7, and SB-8; one of three VOA vials received contained visible headspace. For the samples SB-3, SB-4, and DUP-X; two of three VOA vials received contained visible headspace.</p>
<p><u>Holding Times:</u> All samples were analyzed within holding times.</p>
<p><u>Trip Blank Review:</u> There were no analytes detected above the MDL in the trip blank samples.</p>
<p><u>Equipment Blank Review:</u> Total arsenic was detected at a concentration of 0.583 J µg/L in equipment blank sample EB-041322. Total arsenic detected at concentrations less than 10 times the concentration in the equipment blank in the associated aqueous samples SB-3 (1.55 µg/L), SB-4 (1.74 µg/L), SB-5 (1.90 µg/L), SB-6 (0.843 J µg/L), SB-8 (1.21 µg/L), and DUP-X (1.23 µg/L). Total arsenic results in samples SB-3, SB-4, SB-5, SB-8, and DUP-X were qualified as non-detect and flagged as "U" at the reported concentrations. For SB-6, total arsenic was qualified as non-detect and flagged as "U" at the sample reporting limit.</p>
<p><u>Surrogates:</u> For analysis of SVOCs by SW 8270E, surrogates were diluted out in the sample SB06-0-3. Recovery of the surrogate 2,4,6-tribromophenol was below the laboratory limits of 39-132%, for samples DU-08, DU-DUP, and DU-TRIP. Associated analytes were qualified as estimated non-detects (UJ).</p>
<p><u>Elevated Reporting Limits:</u> VOCs and GRO - All soil samples were analyzed at a 50x dilution. TPH-DRO – Two soil samples were analyzed at dilution factors ranging from 2x to 5x. SVOCs – All soil samples were analyzed at dilution factors ranging from 4x to 100x and one groundwater sample was analyzed at a 4X dilution factor. Metals: All soil samples were analyzed at a 10X dilution factor. Laboratory MDLs and MRLs were raised accordingly.</p>
<p><u>Additional Items:</u> None.</p>

PER ANALYSIS:

Volatile Organic Compounds, Method 8260D and Gasoline Range Organics, Method NWTPH-Gx (Batches 22D0702, 22D0741, 22D0770, 22D0773, and 22D0831)

Method Blanks:

No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed.

Laboratory Control Sample:

All LCS percent recoveries were within acceptance limits for GRO.

LCS percent recoveries were less than the lower acceptance limits for acetone, 2-butanone (MEK), 2-hexanone, and naphthalene in batch 22D0702. There were no field samples associated with this LCS; therefore, no data required qualification.

LCS percent recoveries were less than the lower acceptance limits for acetone, MEK, and 2-hexanone in batch 22D0741. The trip blanks TB-01 through TB-09 were associated with this LCS. These VOCs were not detected in the associated samples and were qualified as estimated non-detects (UJ).

LCS percent recoveries was less than the lower acceptance limit for 2-hexanone in batch 22D0770. This analyte was not detected in the associated samples and results were qualified as estimated non-detects (UJ).

LCS percent recoveries exceeded the upper acceptance limit for bromomethane, carbon disulfide, chloroethane, and 1,1-dichloroethane in batch 22D0773 and were less than the lower acceptance limit for acetone. All five VOCs were not detected in the associated samples. Acetone results were qualified as estimated non-detects (UJ), the remaining analytes were biased high and therefore were not qualified.

LCS percent recoveries exceeded the upper acceptance limit for bromomethane, chloroethane, trichlorotrifluoromethane, and vinyl chloride in batch 22D0831 and were less than the lower acceptance limit for acetone. All five VOCs were not detected in the associated samples. Acetone results were qualified as estimated non-detects (UJ), the remaining analytes were biased high and therefore were not qualified.

Matrix Spike/Matrix Spike Duplicate:

A project sample was not analyzed as the MS/MSD for GRO.

The equipment blank EB-041322 was analyzed as the MS in batch 22D0741 for VOCs. All MS recoveries were within acceptance limits.

The sample DU-TRIP was analyzed as the MS in batch 22D0831 for VOCs. MS percent recoveries exceeded the upper acceptance limit for benzene, bromomethane, chloroethane, trichlorotrifluoromethane, and vinyl chloride. These VOCs were not detected in the parent sample. Since results for these analytes were biased high, no data required qualification.

Laboratory Duplicate:

The samples SB-8 and DUP-X were analyzed as lab duplicates in batch 22D0741. All analytes for GRO and VOCs were non-detect in all samples.

The re-analysis of sample SB-8 was analyzed as a lab duplicate in batch 22D0770. All analytes for GRO and VOCs were non-detect in both samples.

The samples SB01-0.5-3, SB05-3-10, and DUP-01 were analyzed as lab duplicates in batch 22D0773. All analytes for GRO and VOCs were non-detect in all samples.

The samples DU-01 and DU-06 were analyzed as lab duplicates in batch 22D0831. All analytes for GRO and VOCs were non-detect in the parent and lab duplicate for DU-01. Naphthalene and 4-isopropyltoluene were detected in DU-06 and its lab duplicate. The RPD between results for naphthalene and 4-isopropyltoluene in the parent sample and laboratory duplicate were less than the project control limit of 30. All other analytes were non-detect in the parent sample and laboratory duplicate.

Diesel and Oil Range Organics, Method NWTPH-Dx (Batches 22D0823, 22D0836, 22D0944, 22D0958, 22D0971, 22D0975, 22D1021, 22D1071, and 22D1114)
Method Blanks: No analytes were detected above the MDL 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: A project sample was not analyzed as the MS/MSD.
Laboratory Duplicate: The following site-specific samples were analyzed as laboratory duplicates: Sample SB03-3-5 in batch 22D0958 – all analytes were non-detect in the parent sample and laboratory duplicate. Sample DU-03 in batch 22D1021 – The relative percent difference (RPD) between Oil results in the parent sample and laboratory duplicates was less than the project control limit of 30. All other analytes were non-detect in the parent sample and laboratory duplicate. Sample DU-01 in batch 22D1071 – The RPDs between Diesel and Oil results in the parent sample and laboratory duplicates were less than the project control limit of 30. Results for Mineral Oil were non-detect in the parent sample and laboratory duplicate. Sample DU-04 in batch 22D1114 – The RPD between Oil results in the parent sample and laboratory duplicates was less than the project control limit of 30. All other analytes were non-detect in the parent sample and laboratory duplicate. No data required qualified based on analysis of laboratory duplicates.
Semivolatile Organic Compounds, Method 8270E (Batches 22D0716, 22D0861, 22D0935, and 22D1068)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks. No qualifiers are needed
Laboratory Control Sample: The LCS and LCSD percent recovery exceeded the upper acceptance limit in batch 22D0716 for 3,3'-dichlorobenzidine. The following samples were associated with this LCS: SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, DUP-X, and EB-041322. Results for 3,3'-dichlorobenzidine were non-detect in all associated samples. Since 3,3'-dichlorobenzidine was biased high, no data were qualified. The LCS percent recovery exceeded the upper acceptance limit for 3,3'-dichlorobenzidine in batches 22D0861, 22D0935, and 22D1068 for soil samples. 3,3'-dichlorobenzidine was non-detect in all soil samples. Therefore, no data required qualification.
Matrix Spike/Matrix Spike Duplicate: The sample DU-TRIP was analyzed as the MS in batch 22D0831. MS percent recovery exceeded the upper acceptance limit for 3,3'-dichlorobenzidine. 3,3'-dichlorobenzidine was biased high and the result was non-detect in the parent sample; therefore, no data were qualified. The sample DU-06 was analyzed as the MS in batch 22D0935. MS percent recoveries were less than the lower acceptance limits for indeno(1,2,3-cd)pyrene; 4-nitrophenol; 2,3,4,6-tetrachlorophenol; 2,3,5,6-tetrachlorophenol; and 2,4,5-trichlorophenol. These analytes were qualified as estimated detects (J-) and non-detects (UJ) in parent sample.
Laboratory Duplicate: The sample SB01-0.5-3 was analyzed as a lab duplicate in batch 22D0861. All analytes were non-detect in both samples. The sample DU-02 was analyzed as a lab duplicate in batch 22D0935. Acenaphthylene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, pyrene, and dibenzofuran were detected in the parent sample and lab duplicate. All RPDs calculated were within the control limit. The sample DU-01 was analyzed as a lab duplicate in batch 22D1068. Acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene,

benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, pyrene, dibenzofuran and bis(2-ethylhexyl)phthalate were detected in the parent sample and lab duplicate. RPDs exceeded the acceptance limit for 2-methylnaphthalene and naphthalene. Detected results for 2-methylnaphthalene and naphthalene were qualified as estimated (J) in the triplicate samples collected at DU-01.
PCB Aroclors, Method 8082A (Batches 22D1025 and 22D1069)
Method Blanks: No analytes were detected above the MDL 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: A project sample was not analyzed as the MS/MSD.
Laboratory Duplicate: A project sample was not analyzed for the lab duplicate.
RCRA Metals, Method 6020B (Batches 22D1163, 22D1164, 22E0126, 22E022, 22D0782, and 22D1142)
Method Blanks: No analytes were detected above the MDL in the laboratory method blanks, with exception of method blank 22D1164-BLK1. For batch 22D1164, lead was detected at a concentration of 0.104 J mg/kg in method blank 22D1164-BLK1. All associated sample results were greater than 10 times the method blank concentration. 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: The project sample SB01-0.5-3 was analyzed as the MS in batch 22D1163. Project sample SB-1 was analyzed as the MS in batch 22E0126. The project sample SB-2 was analyzed as the MS in batch 22D0782. The project sample SB-5 was analyzed as the MS in batch 22D1142. The spike recoveries in all MS samples were within the acceptance limits.
Laboratory Duplicate: Soil sample SB01-0.5-3 was analyzed as a lab duplicate. Arsenic, barium, chromium, and lead were detected in both samples. The RPDs exceeded the acceptance limit for chromium and lead. Results for chromium and lead were qualified as estimated (J) in the parent sample SB01-0.5-3. The aqueous sample SB1 was analyzed as a lab duplicate for total metals. Arsenic, barium, chromium, and lead were detected in both samples. All RPDs calculated were within the control limit. The aqueous samples SB1 and SB4 were analyzed as lab duplicates for dissolved metals. Arsenic and barium were detected in both parent samples and their lab duplicates. All RPDs calculated were within the control limit.

FIELD REPLICATE REVIEW: Two field duplicate samples and one set of triplicate ISM samples were analyzed. Soil sample DUP-01 is a field duplicate of sample SB04-0-3. Groundwater sample DUP-X is a field duplicate of sample SB-8. Samples DU-01, DU-DUP, and DUP-TRIP were collected as triplicates to evaluate ISM precision. RPDs (for duplicates) and RSDs (for triplicates) are calculated between the results of the replicates for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. Constituents that met the criteria are tabulated below.

Soil results for lead were qualified as estimated (J) in samples SB04-0-3 and DUP-01 because the calculated RPD exceeded 30%. Groundwater results for total lead were qualified as estimated (J) in samples SB-8 and DUP-X because the calculated RPD exceeded 30%. Soil results for cadmium were qualified as estimated (J) in triplicate ISM samples DU-01, DU-DUP, and DUP-TRIP because All calculated triplicate RSDs exceeded the 30% acceptance criteria.

Sample Name	Constituent	Result	MRL	Unit	RPD/RSD
DU--01	Arsenic	6.61	1.01	mg/kg	
DU-DUP	Arsenic	4.78	1.11	mg/kg	16%
DU-TRIP	Arsenic	4.82	0.973	mg/kg	
DU--01	Barium	44.9	1.01	mg/kg	
DU-DUP	Barium	49.3	1.11	mg/kg	3.8%
DU-TRIP	Barium	47.0	0.973	mg/kg	
DU--01	Chromium	27.3	1.01	mg/kg	
DU-DUP	Chromium	30.9	1.11	mg/kg	5.6%
DU-TRIP	Chromium	27.7	0.973	mg/kg	
DU--01	Lead	13.7	0.203	mg/kg	
DU-DUP	Lead	16.8	0.222	mg/kg	10%
DU-TRIP	Lead	13.6	0.195	mg/kg	
DU--01	Fluoranthene	77.0	10.2	µg/kg	
DU-DUP	Fluoranthene	109	26.4	µg/kg	19%
DU-TRIP	Fluoranthene	124	26.9	µg/kg	
DU--01	Phenanthrene	106	10.2	µg/kg	
DU-DUP	Phenanthrene	95.7	26.4	µg/kg	10%
DU-TRIP	Phenanthrene	82.8	26.9	µg/kg	
DU--01	Pyrene	70.5	10.2	µg/kg	
DU-DUP	Pyrene	108	26.4	µg/kg	19%
DU-TRIP	Pyrene	112	26.9	µg/kg	
SB04-0-3	Barium	34.6	1.40	mg/kg	
DUP-01	Barium	38.6	1.47	mg/kg	11%
SB04-0-3	Chromium	14.2	1.40	mg/kg	
DUP-01	Chromium	17.6	1.47	mg/kg	21%
SB04-0-3	Lead	81.8	0.279	mg/kg	
DUP-01	Lead	203	0.294	mg/kg	85%
SB-8	Barium, Total	82.5	2.00	µg/L	
DUP-X	Barium, Total	85.1	2.00	µg/L	3.1%
SB-8	Lead, Total	1.82	0.200	µg/L	
DUP-X	Lead, Total	1.14	0.200	µg/L	46%
SB-8	Barium, Dissolved	92.2	1.00	µg/L	
DUP-X	Barium, Dissolved	76.1	1.00	µg/L	19.1%

DETERMINATION:

The data in this work order have been validated, all data are usable as qualified.

<u>Sample Name</u>	<u>Method</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
SB01-0.5-3	8260D	Acetone	1240 U	1240 UJ	µg/kg	10a
SB02-0-3	8260D	Acetone	1730 U	1730 UJ	µg/kg	10a
SB02-3-7	8260D	Acetone	1940 U	1940 UJ	µg/kg	10a
SB03-0.5-3	8260D	Acetone	1280 U	1280 UJ	µg/kg	10a
SB03-3-5	8260D	Acetone	1780 U	1780 UJ	µg/kg	10a
SB04-0-3	8260D	Acetone	1690 U	1690 UJ	µg/kg	10a
SB05-0.5-3	8260D	Acetone	1470 U	1470 UJ	µg/kg	10a
SB05-3-10	8260D	Acetone	1460 U	1460 UJ	µg/kg	10a
SB06-0-3	8260D	Acetone	974 U	974 UJ	µg/kg	10a
SB07-0.5-3	8260D	Acetone	1080 U	1080 UJ	µg/kg	10a
SB07-3-6	8260D	Acetone	1850 U	1850 UJ	µg/kg	10a
SB08-0-3	8260D	Acetone	1190 U	1190 UJ	µg/kg	10a
SB-1	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-2	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-3	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-4	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-5	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-6	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-7	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
SB-8	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
DUP-01	8260D	Acetone	1780 U	1780 UJ	µg/kg	10a
DUP-X	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
DU-01	8260D	Acetone	1610 U	1610 UJ	µg/kg	10a
DU-02	8260D	Acetone	1250 U	1250 UJ	µg/kg	10a
DU-03	8260D	Acetone	1230 U	1230 UJ	µg/kg	10a
DU-04	8260D	Acetone	1320 U	1320 UJ	µg/kg	10a
DU-05	8260D	Acetone	1060 U	1060 UJ	µg/kg	10a
DU-06	8260D	Acetone	1300 U	1300 UJ	µg/kg	10a
DU-07	8260D	Acetone	1780 U	1780 UJ	µg/kg	10a
DU-08	8260D	Acetone	1320 U	1320 UJ	µg/kg	10a
DU-DUP	8260D	Acetone	1850 U	1850 UJ	µg/kg	10a
DU-TRIP	8260D	Acetone	1740 U	1740 UJ	µg/kg	10a
EB-041322	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-01	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-01	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-01	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-02	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-02	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-02	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-03	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-03	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-03	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-04	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-04	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-04	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-05	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-05	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-05	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-06	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-06	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-06	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-07	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-07	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-07	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-08	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-08	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a

<u>Sample Name</u>	<u>Method</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
TB-08	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
TB-09	8260D	Acetone	20.0 U	20.0 UJ	µg/L	10a
TB-09	8260D	2-Butanone (MEK)	10.0 U	10.0 UJ	µg/L	10a
TB-09	8260D	2-Hexanone	10.0 U	10.0 UJ	µg/L	10a
DU-01	8270E	Anthracene	8.28	8.28 J	µg/kg	27x
DU-01	8270E	2-Methylnaphthalene	14.8	14.8 J	µg/kg	27x
DU-01	8270E	Naphthalene	58.5	58.5 J	µg/kg	27x
DU-06	8270E	Indeno(1,2,3-cd)pyrene	24.3	24.3 J	µg/kg	08a
DU-06	8270E	4-Nitrophenol	263 U	263 UJ	µg/kg	08a
DU-06	8270E	2,3,4,6-Tetrachlorophenol	131 U	131 UJ	µg/kg	08a
DU-06	8270E	2,3,5,6-Tetrachlorophenol	131 U	131 UJ	µg/kg	08a
DU-06	8270E	2,4,5-Trichlorophenol	131 U	131 UJ	µg/kg	08a
SB01-0.5-3	6020B	Chromium	10.9	10.9 J	mg/kg	27x
SB01-0.5-3	6020B	Lead	1.72	1.72 J	mg/Kg	27x
SB04-0-3	6020B	Lead	81.8	81.8 J	mg/Kg	14a
DUP-01	6020B	Lead	203	203 J	mg/Kg	14a
SB-3	6020B	Arsenic, total	1.55	1.55 U	µg/L	06e
SB-4	6020B	Arsenic, total	1.74	1.74 U	µg/L	06e
SB-5	6020B	Arsenic, total	1.90	1.90 U	µg/L	06e
SB-6	6020B	Arsenic, total	0.843 J	1.00 U	µg/L	06e
SB-8	6020B	Arsenic, total	1.21	1.21 U	µg/L	06e
SB-8	6020B	Lead, total	1.82	1.82 J	µg/L	14a
DUP-X	6020B	Arsenic, total	1.23	1.23 U	µg/L	06e
DUP-X	6020B	Lead, total	1.14	1.14 J	µg/L	14a
DU-01	6020B	Cadmium	0.142 J	0.142 J	mg/kg	27x
DU-DUP	6020B	Cadmium	6.25	6.25 J	mg/kg	27x
DU-TRIP	6020B	Cadmium	0.268	0.268 J	mg/kg	27x

Notes:

µg/L = micrograms per liter
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram

Reason Codes:

01a = Sample was not prepared within the specified holding time.
06e = Target parameter is detected in the associated equipment rinsate blank sample.
08a = MS or MSD %R was less than the LCL.
10a = Laboratory control sample spike recovery was less than the lower acceptance limit.
14a = Field duplicate RPD is greater than the CL.
27x = Laboratory duplicate RPD is greater than the CL.

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 are 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. 2017a. United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Inorganic Superfund Data Review, EPA-540-R-2017-001*. Office of Superfund Remediation and Technology Innovation (OSRTI). January.

EPA. 2017b. *USEPA National Functional Guidelines for Superfund Organic Methods Data Review, EPA-540-R-2017-002*. OSRTI. January.

Stantec, 2021. *Master Quality Assurance Project Plan (Revision 0) for Implementation of USEPA Brownfields Assessment Grants Mith-ih-kwuh Economic Development Corporation*. May.

DATA VALIDATION SUMMARY REPORT

GENERAL INFORMATION:

Lab Name:	Cape Fear Laboratories
Lab SDG/Project/Work Order:	19712
Project Name:	Ko 'Kwel Wharf Property Tremont Street, North Bend, Oregon
Stantec Project Number:	185751418
Client:	MEDC Brownfield Grant
Validator Name:	Sarah Von Raesfeld
Date of Validation:	July 29, 2022

SAMPLE INFORMATION:

Number of Samples:	23
Matrix:	Soil
Number of Trip Blanks:	0
Number of Equipment Blanks:	0
Number of Field Duplicates:	1
Number of Field Triplicates:	1
Date of Sample Collection:	April 11-15, 2022

<u>Sample Name:</u>	<u>Lab Sample ID</u>
SB01-0.5-3	19712
SB02-0-3	19712
SB02-3-7	19712
SB03-0.5-3	19712
SB03-3-5	19712
SB04-0-3	19712
SB05-0.5-3	19712
SB05-3-10	19712
SB06-0-3	19712
SB07-0.5-3	19712
SB07-3-6	19712
SB08-0-3	19712
DUP-01	19712
DU-01	19712
DU-02	19712
DU-03	19712
DU-04	19712
DU-05	19712
DU-06	19712
DU-07	19712
DU-08	19712
DU-DUP	19712
DU-TRIP	19712

GENERAL DATA VALIDATION:

<u>Case Narrative:</u> The laboratory did not identify any non-conformances in the case narrative.
<u>Chain of Custody:</u> The COC was complete, all analyses were performed as requested.
<u>Sample Receipt:</u> The samples were received within the acceptable temperature range of 0° - 6° C.
<u>Holding Times:</u> Samples were analyzed within the recommended holding time.
<u>Equipment Blank Review:</u> There were no equipment blank samples submitted.
<u>Surrogates:</u> All surrogate recoveries were within acceptance limits.
<u>Elevated Reporting Limits:</u> No samples were analyzed at elevated dilution factors.
<u>Additional Items:</u> Results flagged as Estimated Maximum Potential Concentrations by the laboratory were qualified as estimated (J).

PER ANALYSIS:

Dioxins and Furans, Method 1613 (Batches 49956 and 49988)
<u>Method Blanks:</u> Several dioxin and furan compounds were detected in both laboratory method blanks. Associated samples that had analytes detected between the MDL and MRL were qualified as not detected (U) and the non-detect value was raised to the MRL. Associated samples that had them detected at concentrations that were less than ten-times the blank result were qualified as estimated with a potential positive bias (J+).
<u>Laboratory Control Sample:</u> LCS/LCSD percent recoveries and RPDs were within acceptance limits. No qualifiers are needed.
<u>Matrix Spike/Matrix Spike Duplicate:</u> Project sample SB07-3-6 was analyzed as the MS/MSD. The MSD percent recovery and MS/MSD RPD exceeded control limits for OCDD. The result was qualified as estimated with a potential positive bias (J+) in the parent sample.

FIELD REPLICATE REVIEW: One field duplicate pair and one set of triplicate ISM samples were analyzed. Soil sample DUP-01 is a field duplicate of sample SB04-0-3. Samples DU-01, DU-DUP, and DUP-TRIP were collected as triplicates to evaluate ISM precision. RPDs (for duplicates) and RSDs (for triplicates) are calculated between the results of the replicates for constituents detected in both samples at concentrations exceeding five-times their respective MRLs. Constituents that met the criteria are tabulated below.

Soil results for lead were qualified as estimated (J) in samples SB04-0-3 and DUP-01 because the calculated RPD exceeded 30%. Groundwater results for total lead were qualified as estimated (J) in samples SB-8 and DUP-X because the calculated RPD exceeded 30%. Results were qualified as estimated for the samples and analytes listed below because the calculated RPD exceeded 50% for the field duplicate and the RSDs exceeded 30% for the field triplicate.

Sample Name	Constituent	Result	MRL	Unit	RPD/RSD
DU-01	1,2,3,4,6,7,8,9-OCDD	826	9.91	pg/g	
DU-DUP	1,2,3,4,6,7,8,9-OCDD	2,680	9.89	pg/g	51%
DU-TRIP	1,2,3,4,6,7,8,9-OCDD	2,460	9.92	pg/g	
DU-01	1,2,3,4,6,7,8,9-OCDF	54.2	9.91	pg/g	
DU-DUP	1,2,3,4,6,7,8,9-OCDF	165	9.89	pg/g	52%
DU-TRIP	1,2,3,4,6,7,8,9-OCDF	193	9.92	pg/g	
DU-01	1,2,3,4,6,7,8-HpCDD	108	4.95	pg/g	
DU-DUP	1,2,3,4,6,7,8-HpCDD	386	4.94	pg/g	54%
DU-TRIP	1,2,3,4,6,7,8-HpCDD	350	4.96	pg/g	
DU-01	1,2,3,4,6,7,8-HpCDF	25.2	4.95	pg/g	
DU-DUP	1,2,3,4,6,7,8-HpCDF	60.1	4.94	pg/g	40%
DU-TRIP	1,2,3,4,6,7,8-HpCDF	50.9	4.96	pg/g	
SB04-0-3	1,2,3,4,6,7,8,9-OCDD	64.6	9.43	pg/g	
DUP-01	1,2,3,4,6,7,8,9-OCDD	155	2.81	pg/g	82%

DETERMINATION:

The data in this work order have been validated, all data are usable as qualified.

<u>Sample Name</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
DU-01	1,2,3,4,6,7,8,9-OCDD	826	826 J	pg/g	14a
DU-01	1,2,3,4,6,7,8,9-OCDF	54.2	54.2 J	pg/g	14a
DU-01	1,2,3,4,6,7,8-HpCDD	108	108 J	pg/g	14a
DU-01	1,2,3,4,6,7,8-HpCDF	25.2	25.2 J	pg/g	14a
DU-01	1,2,3,7,8-PeCDD	2.21 JK	2.21 J	pg/g	19g
DU-01	2,3,4,6,7,8-HxCDF	1.69 JK	1.69 J	pg/g	19g
DU-02	1,2,3,7,8,9-HxCDF	1.04 JK	1.04 J	pg/g	19g
DU-02	1,2,3,7,8-PeCDD	2.97 JK	2.97 J	pg/g	19g
DU-02	2,3,7,8-TCDD	0.571 JK	0.571 J	pg/g	19g
DU-03	1,2,3,6,7,8-HxCDD	15 K	15 J	pg/g	19g
DU-03	1,2,3,7,8-PeCDF	2.28 JK	2.28 J	pg/g	19g
DU-04	1,2,3,4,7,8,9-HpCDF	3.77 JK	3.77 J	pg/g	19g
DU-05	1,2,3,7,8,9-HxCDF	2.01 JK	2.01 J	pg/g	19g
DU-05	1,2,3,7,8-PeCDF	2.72 JK	2.72 J	pg/g	19g
DU-06	1,2,3,4,7,8-HxCDF	3.18 BJ	4.96 U	pg/g	07a
DU-06	1,2,3,7,8-PeCDF	1.87 BJK	4.96 U	pg/g	07a
DU-06	2,3,7,8-TCDF	1.89 BK	1.89 J	pg/g	19g
DU-07	1,2,3,4,7,8-HxCDF	1.49 BJ	4.99 U	pg/g	07a
DU-07	1,2,3,6,7,8-HxCDF	1.25 JK	1.25 J	pg/g	19g
DU-07	1,2,3,7,8-PeCDF	0.779 BJK	4.99 U	pg/g	07a
DU-07	2,3,7,8-TCDF	0.745 BJK	0.999 U	pg/g	07a
DU-08	1,2,3,4,7,8-HxCDF	1.73 BJ	4.99 U	pg/g	07a
DU-08	1,2,3,7,8-PeCDF	1.07 BJK	4.99 U	pg/g	07a
DU-08	2,3,7,8-TCDF	0.696 BJ	0.998 U	pg/g	07a
DU-DUP	1,2,3,4,6,7,8,9-OCDD	2680	2680 J	pg/g	14a
DU-DUP	1,2,3,4,6,7,8,9-OCDF	165	165 J	pg/g	14a
DU-DUP	1,2,3,4,6,7,8-HpCDD	386	386 J	pg/g	14a
DU-DUP	1,2,3,4,6,7,8-HpCDF	60.1	60.1 J	pg/g	14a
DU-DUP	1,2,3,6,7,8-HxCDF	3.11 JK	3.11 J	pg/g	19g
DU-DUP	1,2,3,7,8,9-HxCDD	6.28 K	6.28 J	pg/g	19g
DU-DUP	1,2,3,7,8-PeCDD	3.03 JK	3.03 J	pg/g	19g
DU-DUP	2,3,4,6,7,8-HxCDF	2.6 JK	2.6 J	pg/g	19g
DUP-01	1,2,3,4,6,7,8,9-OCDD	155	155 J	pg/g	14a
DUP-01	1,2,3,4,7,8-HxCDD	2.47 JK	2.47 J	pg/g	19g
DUP-01	1,2,3,7,8-PeCDD	4.55 JK	4.55 J	pg/g	19g
DUP-01	2,3,4,6,7,8-HxCDF	2.56 JK	2.56 J	pg/g	19g
DUP-01	2,3,7,8-TCDD	0.85 JK	0.85 J	pg/g	19g
DU-TRIP	1,2,3,4,6,7,8,9-OCDD	2460	2460 J	pg/g	14a
DU-TRIP	1,2,3,4,6,7,8,9-OCDF	193	193 J	pg/g	14a
DU-TRIP	1,2,3,4,6,7,8-HpCDD	350	350 J	pg/g	14a
DU-TRIP	1,2,3,4,6,7,8-HpCDF	50.9	50.9 J	pg/g	14a
DU-TRIP	1,2,3,6,7,8-HxCDF	2.46 JK	2.46 J	pg/g	19g
DU-TRIP	1,2,3,7,8-PeCDD	2.57 JK	2.57 J	pg/g	19g
DU-TRIP	2,3,7,8-TCDD	0.72 JK	0.72 J	pg/g	19g
SB01-0.5-3	1,2,3,4,6,7,8,9-OCDD	4.52 BJ	9.75 U	pg/g	07a
SB01-0.5-3	1,2,3,4,6,7,8-HpCDF	0.615 BJK	4.88 U	pg/g	07a
SB02-0-3	1,2,3,4,6,7,8-HpCDF	3.37 JK	3.37 J+	pg/g	07a; 19g
SB02-0-3	1,2,3,6,7,8-HxCDD	0.791 JK	0.791 J	pg/g	19g
SB02-0-3	1,2,3,7,8-PeCDD	0.281 JK	0.281 J	pg/g	19g
SB02-0-3	1,2,3,7,8-PeCDF	0.257 JK	0.257 J	pg/g	19g
SB02-3-7	1,2,3,4,6,7,8,9-OCDF	9.86 K	9.86 J	pg/g	19g
SB02-3-7	1,2,3,4,7,8-HxCDF	0.549 JK	0.549 J	pg/g	19g
SB02-3-7	1,2,3,6,7,8-HxCDF	0.435 JK	0.435 J	pg/g	19g
SB02-3-7	1,2,3,7,8-PeCDF	0.453 JK	0.453 J	pg/g	19g
SB02-3-7	2,3,4,6,7,8-HxCDF	0.6 JK	0.6 J	pg/g	19g
SB02-3-7	2,3,4,7,8-PeCDF	0.595 JK	0.595 J	pg/g	19g
SB03-0.5-3	1,2,3,4,6,7,8,9-OCDD	7.62 J	9.44 U	pg/g	07a
SB03-0.5-3	1,2,3,4,6,7,8-HpCDD	1.37 JK	1.37 J	pg/g	19g
SB03-0.5-3	1,2,3,4,7,8-HxCDF	0.3 JK	0.3 J	pg/g	19g

<u>Sample Name</u>	<u>Analyte</u>	<u>Original Result</u>	<u>Validated Result</u>	<u>Units</u>	<u>Reason Code</u>
SB03-3-5	1,2,3,4,6,7,8-HpCDF	0.629 BJK	5.10 U	pg/g	07a
SB03-3-5	2,3,4,6,7,8-HxCDF	0.167 JK	0.167 J	pg/g	19g
SB04-0-3	1,2,3,4,6,7,8,9-OCDD	64.6	64.6 J	pg/g	14a
SB04-0-3	1,2,3,4,6,7,8-HpCDD	14.8 K	14.8 J	pg/g	19g
SB04-0-3	1,2,3,6,7,8-HxCDF	2.22 JK	2.22 J	pg/g	19g
SB04-0-3	1,2,3,7,8-PeCDD	2.49 JK	2.49 J	pg/g	19g
SB04-0-3	2,3,4,6,7,8-HxCDF	1.41 JK	1.41 J	pg/g	19g
SB05-0.5-3	1,2,3,4,7,8-HxCDF	0.701 JK	0.701 J	pg/g	19g
SB05-0.5-3	2,3,4,6,7,8-HxCDF	0.661 JK	0.661 J	pg/g	19g
SB05-3-10	1,2,3,4,6,7,8,9-OCDD	3.89 BJK	9.57 U	pg/g	07a
SB05-3-10	1,2,3,4,6,7,8-HpCDD	0.555 JK	0.555 J	pg/g	19g
SB05-3-10	1,2,3,4,6,7,8-HpCDF	1.58 BJ	4.78 U	pg/g	07a
SB05-3-10	1,2,3,4,7,8-HxCDF	0.785 JK	0.785 J	pg/g	19g
SB07-0.5-3	1,2,3,4,6,7,8-HpCDF	1.31 BJK	4.70 U	pg/g	07a
SB07-3-6	1,2,3,4,6,7,8,9-OCDD	38.1	38.1 J+	pg/g	08a; 09a
SB07-3-6	1,2,3,4,6,7,8-HpCDF	2.39 BJ	4.93 U	pg/g	07a
SB07-3-6	2,3,4,7,8-PeCDF	0.552 JK	0.552 J	pg/g	19g
SB07-3-6	2,3,7,8-TCDF	0.712 BJ	0.986 U	pg/g	07a
SB08-0-3	1,2,3,7,8-PeCDD	4.99 JK	4.99 J	pg/g	19g

Notes:

pg/g = picograms per gram

Reason Codes:

- 07a = Target parameter is detected in the associated laboratory method blank.
- 08a = Matrix spike recovery was below the lower acceptance limit
- 09a = Matrix spike precision exceeds the acceptance criteria
- 14a = Field precision exceeds the acceptance criteria

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 are 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. 2020. United States Environmental Protection Agency *National Functional Guidelines for High Resolution Superfund Methods Data Review, EPA-540-R-20-007*. Office of Superfund Remediation and Technology Innovation (OSRTI). November.

Stantec, 2021. *Master Quality Assurance Project Plan (Revision 0) for Implementation of USEPA Brownfields Assessment Grants Mith-ih-kwuh Economic Development Corporation*. May.

Appendix F REGULATED BUILDING MATERIALS SURVEY REPORT





Stantec Consulting Services Inc.
601 SW Second Avenue Suite 1400, Portland OR 97204-3128

September 16, 2022
File: 185751418

Attention: Ray Doering
Mith-ih-kwuh Economic Development Corporation
3201 Tremont Avenue
North Bend, OR 97459

Dear Mr. Doering,

Reference: Regulated Building Materials Survey – Ko’Kwel Wharf Property, Tremont Avenue, North Bend, Oregon 97459

Stantec Consulting Services Inc. (Stantec) appreciates the opportunity to provide you with this regulated building material (RBM) survey report for the Ko’kwel Wharf office building located on Tremont Avenue in North Bend, Oregon (Property). RBM survey sampling activities were conducted on April 15, 2022.

In general accordance with Oregon Administrative Rules (OAR) 340-248-0240, an asbestos survey is required prior to renovation or demolition of a building. Stantec also conducted the asbestos survey in general accordance with the US Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) sampling guidelines as outlined in 40 Code of Federal Regulations (CFR) Part 763, and in accordance with the master Quality Assurance Project Plan (QAPP) prepared for The Mith-ih-kwuh Economic Development Corporation (MEDC) under Cooperative Agreement Number BF-01J86301, and in accordance with the March 1, 2022 *Site-Specific Sampling and Analysis Plan, Revision 1.0, Ko’Kwel Wharf Property, Tremont Street, North Bend, Oregon*, which was approved by the EPA on March 4, 2022.

The purpose of the RBM survey was to identify: 1) asbestos containing materials (ACM); 2) lead-based paint (LBP) in fair or poor condition; and 3) other hazardous materials that may require special handling and/or disposal during building renovation.

BACKGROUND

The Property is zoned by the City of North Bend as General Commercial (C-G) and Light/Heavy Industrial (M-L and M-H). Coos Bay is located east adjacent to the Property. Surrounding sites are generally industrial, commercial, and residential in use.

The Property is located on Tremont Avenue, North Bend Oregon and consists of five City of North Bend tax lots: 25S13W15-104, -105, -106, -107, and -100 totaling 50.5 acres. These tax lots are also referred to by MEDC as Lots 1-5, respectively. The Property is owned by Ko-Kwel Wharf LLC. There are a reported 7 structures on Property Lot 2 and lot 4 although a visual inspection determined that six of the structures were wooden outbuildings that did not contain suspect ACM, were unpainted surfaces (or the paint was in good condition) and did not contain other hazardous materials. The interior portion of at least one structure was inaccessible. Therefore, this survey was limited to the 2-story building located on the east central portion of the Property on tax lot 25S13W15-105 (Lot 2).

Reference: Regulated Building Materials Survey – Ko’Kwel Wharf Property, Tremont Avenue, North Bend, Oregon 97459

The building consists of a concrete slab-on-grade floor and the above-ground portions of the building are constructed of wood and masonry. The Survey area for this building included both the 1st and 2nd floors, however no new suspect ACMs or LBPs or other hazardous materials were identified during the survey on the 2nd floor as building materials consisted of wood or were identical to those found on the 1st floor.

PROJECT PERSONNEL

The survey was performed by Paul Janney, an EPA-accredited AHERA inspector. A copy of his AHERA certificate is included in **Attachment A**. Access to the building was provided by MEDC.

SUSPECT ASBESTOS-CONTAINING MATERIALS

Asbestos is a potential health hazard capable of causing respiratory system fibrosis and various forms of systemic cancers. Its condition, handling, and disposal are regulated by federal, state, and local agencies. Materials that contain asbestos generally do not pose a health threat unless the asbestos fibers are disturbed by renovation or demolition, and then become airborne and inhaled.

The EPA defines ACM as any material that contains more than 1% (by weight) of asbestos. Only one sample from a homogeneous area with an asbestos concentration >1% is required to collectively identify that material as an ACM, though numerous are collected to prevent the likelihood of a false negative. The EPA additionally categorizes ACM as follows:

- **Category I nonfriable ACM (Cat I)** – asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1% asbestos as determined using the polarized light microscopy (PLM) method.
- **Category II nonfriable ACM (Cat II)** – any material, excluding Category I nonfriable ACM, containing more than 1% asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- **Regulated ACM** – (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

SAMPLING AND ANALYSIS – SUSPECT ACM

Stantec conducted the ACM survey to evaluate the presence and location of ACM in general accordance with AHERA sampling guidelines as outlined in 40 CFR Part 763. The condition, friability, and the potential for suspect ACM to be potentially disturbed were assessed and documented. Bulk samples of readily accessible suspect ACM were collected. Consistent with building demolition and renovation regulatory requirements, building material sampling was conducted regardless of the age and/or condition of the structure/material. Stantec’s sampling locations are shown in **Figure 1**.

Bulk samples collected at the Property were analyzed by PLM in accordance with the EPA “Method of the Determination of Asbestos in Bulk Building Materials” (EPA/600/R-93/116, July 1993). Analysis was

Reference: Regulated Building Materials Survey – Ko'Kwel Wharf Property, Tremont Avenue, North Bend, Oregon 97459

performed by EMSL Analytical, Inc. (EMSL) of Cinnaminson, New Jersey. EMSL participates in the Environmental Laboratory Accreditation Program (ELAP), the National Institute of Standards and Testing (NIST) program, and National Voluntary Laboratory Accreditation Program (NVLAP).

The laboratory reporting limit for asbestos fibers by PLM is less than 1%, which is acceptable for the determination of ACMs for the purposes of DEQ compliance. However, the National Emission Standards for Hazardous Air Pollutants (NESHAP) require point count analysis for all materials with initial PLM results of less than 10%. Samples with an initial result of >2% asbestos were considered positive, and all other samples were subject to point count analysis for the purpose of NESHAP compliance.

Layered analysis was performed by EMSL Laboratories on individual samples, some containing multiple layers of material (i.e., mastic material on vinyl floor tiles, joint compound or wall texture on sheetrock). If any individual inseparable layer of a sample is indicated to contain ACM, then the entire sample is considered positive for ACM. Results of Stantec's ACM survey by material layer are included in the attached **Table 1**.

STANTEC ACM SURVEY FINDINGS

Stantec collected a total of 24 samples from 8 homogenous areas (HAs). No sampled materials were determined to contain asbestos in a quantity greater than 1%.

A full summary of sampled materials and laboratory testing results is provided in **Table 1**. Bulk sample field collection logs and the laboratory analytical report are provided in **Attachment B**. A photographic record of select survey areas and materials is included in **Attachment C**.

LEAD-BASED PAINT

Elemental lead is a toxic material and has historically been widely used as a constituent in paint. The EPA defines LBP as a material containing greater than 0.5% (5,000 parts per million [ppm] or milligrams per kilogram [mg/kg]) lead. Additionally, worker exposure to any concentration of lead during construction projects is regulated by the Oregon Occupational Safety and Health Administration (OSHA) under OAR 737. These regulations are directly applicable during any future building renovation/demolition activities.

The proposed LBP survey conducted at the Property by Stantec personnel included the bulk sampling of paint observed to be in fair and/or poor condition, as paint in this condition may need to be stabilized prior to the renovation/demolition activities. The following defines LBP categorization:

- Interior components with large surface areas (walls, ceilings, floors, doors):
 - Intact – Entire surface is intact;
 - Fair – Less than or equal to 2 SF is deteriorated; and,
 - Poor – More than 2 SF is deteriorated.
- Interior and exterior components with small surface areas (windowsills, baseboards, soffits, trim):
 - Intact – Entire surface is intact;
 - Fair – Less than or equal to 10% of the total surface area of the component is deteriorated; and,
 - Poor – More than 10% of the total surface area of the component is deteriorated.

Reference: Regulated Building Materials Survey – Ko'Kwel Wharf Property, Tremont Avenue, North Bend, Oregon 97459

LEAD-BASED PAINT SURVEY FINDINGS

Two exterior paint samples in fair condition were collected and submitted to EMSL as part of this survey. Analysis of these samples was performed using analytical instruments in accordance with EPA, the National Institute for Occupational Health and Safety (NIOSH), OSHA and other ASTM International methods by NVL Laboratories. Neither of the two paint chip samples contained detectable concentrations of lead above the laboratory reporting limit (250 and 280 ppm), well below the 5,000 ppm that defines lead-based paint.

A full summary of sampled paint and their laboratory results are provided in **Table 2**. Bulk sample field collection logs and the laboratory analytical report are provided in **Attachment B**. A photographic record of select survey areas and materials is included in **Attachment C**.

HAZARDOUS MATERIALS

Stantec performed a visual inspection of the Property building for the presence of other hazardous materials and universal wastes.

Stantec's visual inspection was limited to the following:

- Potential polychlorinated biphenyl (PCB)-containing objects or materials;
- Potential lead-containing units;
- Fluorescent lights;
- Potential mercury-containing objects;
- Refrigerants and other ozone-depleting substances;
- Potentially radioactive substances in various electrical components (e.g., light fixtures, thermostats, refrigeration equipment, emergency exit signs, etc.); and,
- Any containerized hazardous substance observed at the Property was identified, such as 55-gallon drums, paint cans, petroleum storage containers, etc.

The visual inspection was limited to fixtures, equipment, and materials that will require specific disposal to comply with federal and/or state regulations. Assessment of these hazardous materials was based on the identification of placards on the equipment and/or general knowledge of material or historical Property use. No sample collection was performed in the process of identifying or categorizing any hazardous material encountered during the survey.

POLYCHLORINATED BIPHENYLS

A total of 30 dual-bulb fluorescent light fixtures were observed on the first and second floor of the building. Older ballasts associated with such fixtures typically contain PCBs. Ballasts can be hazardous to human health and the environment when PCB-containing oil is released, contaminating exposed surfaces and the air and therefore need to be handled and disposed of properly.

FLUORESCENT LIGHTING TUBES/BULBS AND MERCURY-CONTAINING EQUIPMENT

Many of the observed light fixtures in the Property building were equipped with fluorescent light tubes. According to the EPA, fluorescent light bulbs and tubes contain varying amounts of mercury and can be

Reference: Regulated Building Materials Survey – Ko'kwe'l Wharf Property, Tremont Avenue, North Bend, Oregon 97459

hazardous to the environment if they are disposed of improperly. Because of this, the EPA recommends recycling of fluorescent lights regardless of the known or unknown mercury content. Approximately 60 fluorescent light tubes are present in the Property building.

LEAD-CONTAINING BATTERIES

Stantec did not observe any fixtures such as exit signs in the survey area that may contain lead-acid batteries.

REFRIGERANTS, HALON, AND OTHER OZONE-DEPLETING SUBSTANCES

One refrigerator was observed on the second floor of the building. No other items containing refrigerants, halon or other ozone-depleting substances were observed. Stantec did not, as part of this survey, inspect roof HVAC systems.

SOLVENTS, PAINTS, PETROLEUM PRODUCTS, LUBRICANTS, AND CLEANING PRODUCTS

No chemical storage areas were identified during the survey. No solvents, paints, petroleum products, lubricants, or cleaning products were observed in the Property building.

RECOMMENDATIONS

ASBESTOS-CONTAINING MATERIALS

Based on the findings of this survey, ACM was not identified within the Property building interior.

It should be noted that the asbestos survey was completed as a renovation-level survey of the Property building (Survey Area) and was limited to accessible areas and materials only and did not include exteriors, roofing, electric components or wiring, wall cavities, underground utilities, or concealed attic spaces. Certain concealed materials may be present within wall cavities (e.g., other electrical wire wrapping, insulation materials, vapor barrier paper, etc.) that contain asbestos, and some underground utility piping has been known to contain asbestos (e.g., Transite pipe). If renovation of the Property includes the building exterior, or the removal of on-site portions of underground utilities (storm drains, sewer, domestic water laterals, etc.), evaluation of the asbestos content of materials in these areas must be assumed, or assessment performed prior to the removal process. Suspect materials identified in these locations are assumed positive for asbestos until sampling and analysis indicates otherwise. If, during the course of renovation, activities suspect ACMs are discovered that are not included within this report, those materials are to be assumed positive for asbestos unless additional sampling, analysis and/or assessment indicates otherwise.

LEAD-BASED PAINT

No paint samples collected from the Property were above laboratory method detection limits for lead. Should additional painted building components begin to exhibit deteriorated fair or poor condition paint prior to or during the renovation, paint chip sampling by an appropriate professional is recommended.

Reference: Regulated Building Materials Survey – Ko’Kwel Wharf Property, Tremont Avenue, North Bend, Oregon 97459

OTHER HAZARDOUS MATERIALS

Potentially hazardous materials including possibly PCB-containing light fixture ballasts, fluorescent light tubes, and a refrigerator were observed in the Property building. These items may contain hazardous materials and will need to be handled and disposed of in accordance with applicable EPA regulations (40 CFR 273.9 and 40 CFR 260.10) during building renovation.

Regards,

Stantec Consulting Services Inc.

DRAFT

Paul Janney RG
Associate Geologist and AHERA Inspector
Phone: 317-627-1321
Paul.Janney@stantec.com

DRAFT

Jackie Brenner
Associate Scientist and AHERA Inspector
Phone: 503 446-7431
Jacqueline.Brenner@stantec.com

Tables: Table 1 – 2022 Stantec Asbestos Bulk Sample Analytical Results
Table 2 – 2022 Stantec Lead-based Paint Sample Analytical Results

Figures: Figure 1 – Ground Floor Sampling Locations Map

Attachments: A: AHERA Certification
B: Laboratory Analytical Results and Sample Collection Logs
C: Photographic Log

LIMITATIONS

Reasonable efforts have been made by Stantec personnel to locate, sample, and/or identify suspect ACMs, fair or poor condition LBPs, and hazardous materials associated with the Property buildings' survey area defined in the scope. For any facility, the existence of unique or concealed materials and debris is a possibility. In addition, sampling and laboratory analysis constraints typically hinder the investigation. Stantec does not warrant, guarantee or profess to have the ability to locate or identify all hazardous materials in a facility. The survey is limited in nature, as only full demolition of the Property will reveal all concealed conditions. This report is intended for use in planning based on the agreed upon scope of work. This report is not intended to be a bidding document. Quantities of materials identified are estimates only and would need to be verified. If during the course of a renovation/demolition project, suspect ACMs or LBPs are discovered that are not included within this report; those materials should be treated accordingly until additional sampling, analysis, and/or assessment can be performed.

Additionally, the passage of time may result in a change in the environmental characteristics at the property. This report does not warrant against future operations or conditions that could affect the

Reference: Regulated Building Materials Survey – Ko'Kwel Wharf Property, Tremont Avenue, North Bend, Oregon 97459

recommendations made. The results, findings, conclusions, and recommendations expressed in this report are based only on conditions that were observed during Stantec's survey of the property and test results provided by NVL Laboratories. These observations are time dependent, subject to changing property conditions, and revisions to federal, state, and local regulations. Reliance on this letter report by third parties shall be at the third party's sole risk.

If you have any questions regarding this report or require further clarification, please do not hesitate to contact the Stantec personnel identified above.

TABLES

Table 1
 2022 Stantec Asbestos Bulk Sample Analytical Results
 Ko'Kwel Wharf - Tremont Avenue, North Bend, Oregon 97459

Sample No.	Homogenous Area	Location of Sample / Material	Condition	Asbestos Content	Total Quantity Estimate
01A	Black Covebase	Throughout	Good	ND	250 LF
01B				ND	
01C				ND	
02A	White Mastic associated with Sample No. 1	Throughout	Good	ND	250 LF
02B				ND	
02C				ND	
03A	Gray Carpet Mastic	Meeting Room	Good	ND	150 SF
03B				ND	
03C				ND	
04A	Drywall	Throughout	Good	ND	800 SF
04B				ND	
04C				ND	
05A	WJC associated with Sample No. 4	Throughout	Good	ND	800 SF
05B				ND	
05C				ND	
06A	Gray/Yellow Carpet Mastic	Gym	Good	ND	250 SF
06B				ND	
06C				ND	
07A	Biege VSF	Restrooms	Good	ND	175 SF
07B				ND	
07C				ND	
08A	Yellow Mastic associated with Sample No. 7	Restrooms	Good	ND	175 SF
08B				ND	
08C				ND	

Notes:

SF = Square Feet

ND = Not Detected

Bold = Layer positively identified as ACM

LF = Linear Feet

VSF = Vinyl Sheet Flooring

WJC = Wall Joint Compound

Table 2

2022 Stantec Lead-based Paint Sample Analytical Results
Ko'Kwel Wharf - Tremont Avenue, North Bend, Oregon 97459

Sample No.	Sample Location	Building Int/Ext	Paint Color	Substrate Material	Paint Condition	Estimated Quantity	Lead Content (ppm)
P01	West Exterior Doorway	Exterior	Yellow	Wood	Fair	1,000 SF	<250 ppm
P02	West Exterior Doorway	Exterior	Brown	Wood	Fair	2,000 SF	<280 ppm

Notes:

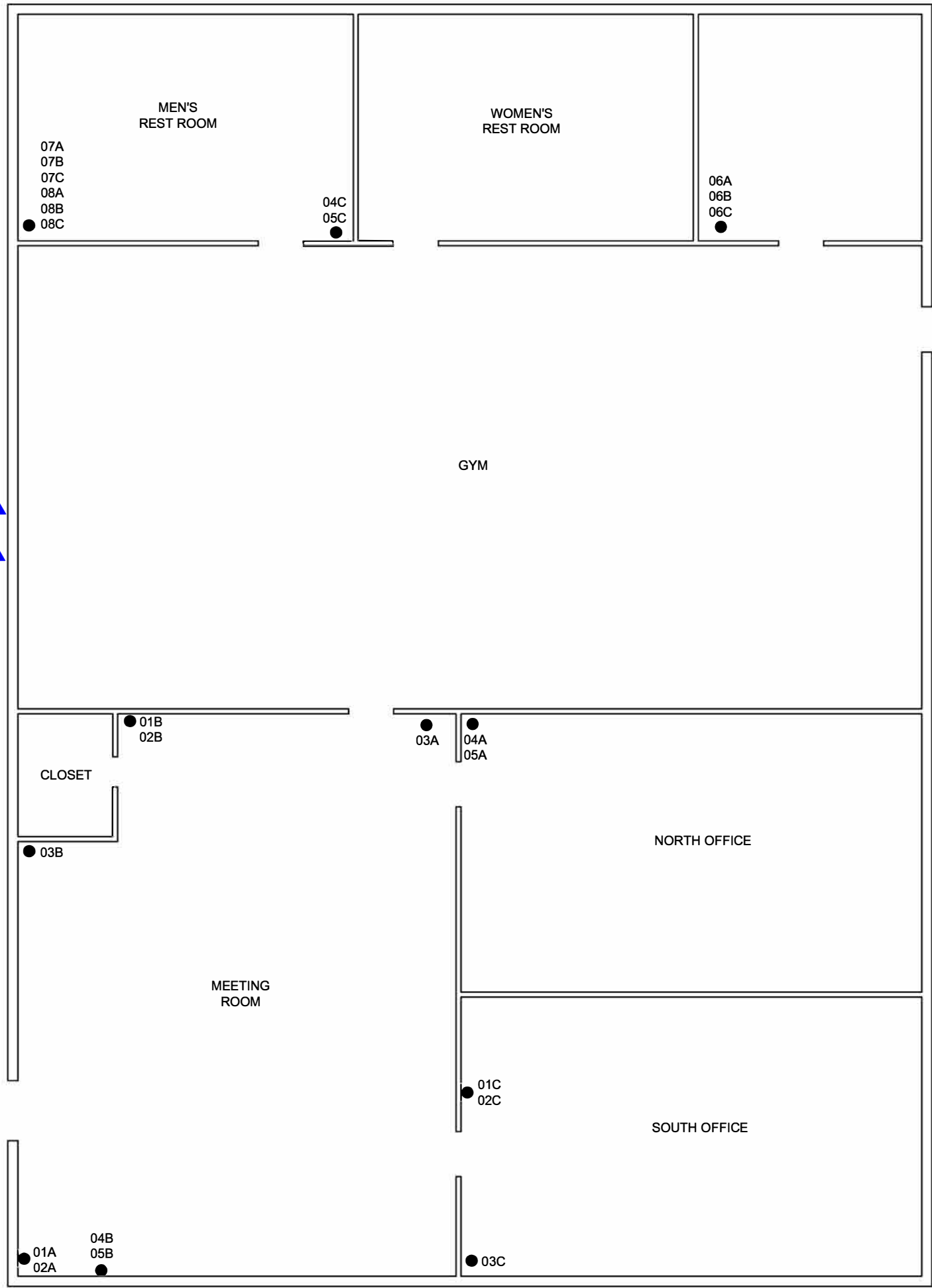
Int = Interior

SF = Square Feet

Ext = Exterior

ppm = parts per million

FIGURES



KO'KWEL WHARF
BUILDING OFFICE

- LEGEND**
- NON ASBESTOS BULK SAMPLE LOCATION
 - ▲ PAINT CHIP SAMPLE LOCATION (NON LEAD BASED)

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. PROJECT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION MAP NORTH TREMONT AVENUE, NORTH BEND, OR	Project No.: 185751418.200	Dwg. No.: 1	
	Scale: N.T.S.		
Client: MITH-IH-KWUH ECONOMIC DEVELOPMENT CORPORATION	Date: 22/09/14		
	Dwn. By: CD OK SC2022090010		
	App'd By: GT		

ATTACHMENT A

AHERA Certifications

THIS IS TO CERTIFY THAT

PAUL JANNEY

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ONLINE AHERA ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 10/14/2021

Course Location: Online

Certificate: IRO-21-8065B



CCB #SRA0615 4-Hr Training

4-Hour Online AHERA Inspector Refresher Training; AHERA is the Asbestos Hazard Emergency Response Act enacting Title II of Toxic Substance Control Act (TSCA)

Expiration Date: 10/14/2022

For verification of the authenticity of this certificate contact:
PBS Engineering and Environmental Inc.
4412 S Corbett Avenue
Portland, Oregon 97239
503.248.1939

A handwritten signature in black ink, which appears to read "Andy Fridley", is written over a horizontal line.

Andy Fridley, Instructor

ATTACHMENT B

Photographic Record



Paint Chip Sample Log

601 SW 2nd Ave, Ste 1400
Portland, OR 97204
Tel: (503) 297-1631
Fax: (503) 297-5429

Project Name: Ko'Kwel Wharf Site Name: Ko'Kwel Wharf Date: 4/15/22
Project #: 185751418 Task #: 200.0003 Site Address: Tremont Ave. North Bend, OR Inspector: P, Janney

Sample Number	Paint Sample Location Information			Paint Location	Estimated Quantity	Notes/Condition/ Paint Color
	Room	Component	Substrate			
PO1	Ext	Door frame Wash	Wood	W. ext. Doorway	10USF	Fair/Yellow
PO2	Ext.	Door frame	Wood	W. ext. Doorway	20USF	Fair/Brown

Relinquished By: _____ Date: _____ Received By: _____ Date: _____
Relinquished By: _____ Date: _____ Received By: _____ Date: _____



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / cinnasblab@EMSL.com

EMSL Order: 042208568

Customer ID: SECO60

Customer PO:

Project ID:

Attention: Graeme Taylor
Stantec Consulting Services Inc.
9400 SW Barnes Road
Suite 200
Portland, OR 97225

Phone: (503) 297-1631

Fax: (503) 297-5429

Received Date: 04/19/2022 1:15 PM

Analysis Date: 04/21/2022

Collected Date: 04/15/2022

Project: Ko'Kuel Wharf RBM - 185751418

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
01A 042208568-0001	Throughout - Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
01B 042208568-0002	Throughout - Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
01C 042208568-0003	Throughout - Cove Base	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
02A 042208568-0004	Throughout - Cove Base Mastic	Brown/Tan Non-Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
<i>Result includes a small amount of inseparable attached material</i>					
02B 042208568-0005	Throughout - Cove Base Mastic	Brown/Tan Non-Fibrous Heterogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
<i>Result includes a small amount of inseparable attached material</i>					
02C 042208568-0006	Throughout - Cove Base Mastic	Brown/Tan Fibrous Heterogeneous	2% Cellulose	98% Non-fibrous (Other)	None Detected
<i>Result includes a small amount of inseparable attached material</i>					
03A 042208568-0007	Meeting Room - Carpet Mastic	Gray Fibrous Homogeneous	15% Synthetic	85% Non-fibrous (Other)	None Detected
03B 042208568-0008	Meeting Room - Carpet Mastic	Gray Fibrous Homogeneous	15% Synthetic	85% Non-fibrous (Other)	None Detected
03C 042208568-0009	Meeting Room - Carpet Mastic	Gray/Yellow Non-Fibrous Heterogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
<i>Result includes a small amount of inseparable attached material</i>					
04A 042208568-0010	Meeting Room, Offices, RR's - Drywall	Brown/Tan Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
04B 042208568-0011	Meeting Room, Offices, RR's - Drywall	Brown/Tan Fibrous Homogeneous	15% Cellulose 8% Glass	77% Non-fibrous (Other)	None Detected
04C 042208568-0012	Meeting Room, Offices, RR's - Drywall	Brown/Tan Fibrous Homogeneous	15% Cellulose 3% Glass	82% Non-fibrous (Other)	None Detected
05A 042208568-0013	Meeting Room, Offices, RR's - WJC	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
05B 042208568-0014	Meeting Room, Offices, RR's - WJC	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
05C 042208568-0015	Meeting Room, Offices, RR's - WJC	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 04/22/2022 01:17:04



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / cinnasblab@EMSL.com

EMSL Order: 042208568
Customer ID: SECO60
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
06A <i>042208568-0016</i>	Gym - Carpet Mastic	Gray Fibrous Homogeneous	15% Synthetic	85% Non-fibrous (Other)	None Detected
06B <i>042208568-0017</i>	Gym - Carpet Mastic	Gray Fibrous Homogeneous	15% Synthetic	85% Non-fibrous (Other)	None Detected
06C <i>042208568-0018</i>	Gym - Carpet Mastic	Gray/Yellow Fibrous Heterogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
<i>Result includes a small amount of inseparable attached material</i>					
07A <i>042208568-0019</i>	Restroom - VSF	Brown/Gray Fibrous Homogeneous	15% Cellulose 10% Glass	75% Non-fibrous (Other)	None Detected
07B <i>042208568-0020</i>	Restroom - VSF	Brown/Gray Fibrous Homogeneous	15% Cellulose 10% Glass	75% Non-fibrous (Other)	None Detected
07C <i>042208568-0021</i>	Restroom - VSF	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
08A <i>042208568-0022</i>	Restroom - VSF Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
08B <i>042208568-0023</i>	Restroom - VSF Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
08C <i>042208568-0024</i>	Restroom - VSF Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Andrea Doughty (16)

Alex Francois (8)

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 04/22/2022 01:17:04



EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856) 303-2500 / (856) 786-5974

<http://www.EMSL.com>

cinnaminsonleadlab@emsl.com

EMSL Order:	202203934
CustomerID:	SECO60
CustomerPO:	
ProjectID:	

Attn: **Paul Fairbain**
Stantec Consulting Services Inc.
9400 SW Barnes Road
Suite 200
Portland, OR 97225

Phone: (503) 297-1631
 Fax: (503) 297-5429
 Received: 4/19/2022 01:30 PM
 Collected: 4/15/2022

Project: 185751418

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>Lead Concentration</i>
P01	202203934-0001	4/15/2022	4/21/2022	0.0803 g	<250 ppm
Site: W. Exterior doorway					
P02	202203934-0002	4/15/2022	4/21/2022	0.0721 g	<280 ppm
Site: W. Exterior Doorway					

Owen Mckenna, Lead Laboratory Director
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

* Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01


Report Amended: 04/21/2022 20:39:26 Replaces the Inital Report 04/21/2022 20:38:21. Reason Code: Client-Change to Sample Volume


ATTACHMENT C

Laboratory Analytical Results and Sample Collection Logs

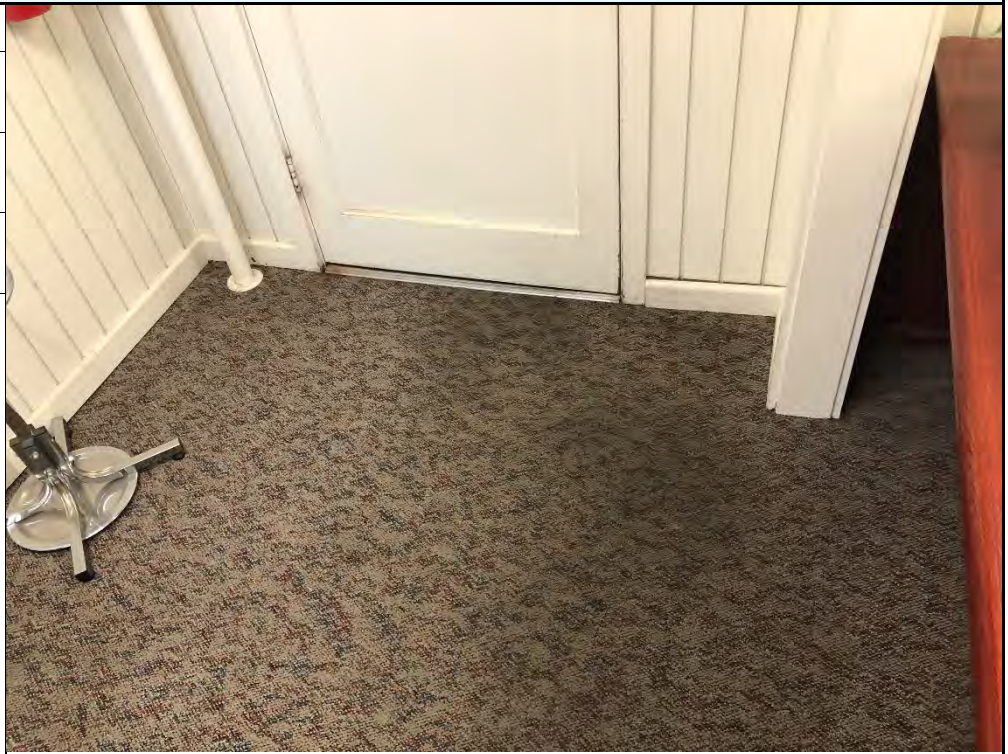
Client:	Mith-ih-kwuh Economic Development Corporation	Project:	185751418
Site Name:	Ko'Kwel Wharf	Site Location:	Tremont Avenue, North Bend, Oregon
Photograph ID: 1			
Photo Location: 1 st Floor			
Direction: Interior			
Survey Date: 04/15/2022			
Comments: View of meeting room looking towards the gym.			
Photograph ID: 2			
Photo Location: 1 st Floor			
Direction: Interior			
Survey Date: 04/15/2022			
Comments: View of north office off the Meeting Room.			

Client:	Mith-ih-kwuh Economic Development Corporation	Project:	185751418
Site Name:	Ko'Kwel Wharf	Site Location:	Tremont Avenue, North Bend, Oregon

Photograph ID: 3	
Photo Location: 1st Floor	
Direction: Interior	
Survey Date: 04/15/2022	
Comments: View of the Gym, fluorescent light fixtures pictured.	


Photograph ID: 4	
Photo Location: 1st Floor	
Direction: Interior	
Survey Date: 04/15/2022	
Comments: Men's Restroom pictured with VSF flooring (non-ACM).	

Client:	Mith-ih-kwuh Economic Development Corporation	Project:	185751418
Site Name:	Ko'Kwel Wharf	Site Location:	Tremont Avenue, North Bend, Oregon

Photograph ID: 5	
Photo Location: 2nd Floor	
Direction: Interior	
Survey Date: 04/15/2022	
Comments: 2 nd Floor carpeting pictured, same pattern as 1 st floor.	

Photograph ID: 6	
Photo Location: 2nd Floor	
Direction: Interior	
Survey Date: 04/15/2022	
Comments: View of 2 nd floor offices, fluorescent light fixtures pictured.	

Client:	Mith-ih-kwuh Economic Development Corporation	Project:	185751418
Site Name:	Ko'Kwel Wharf	Site Location:	Tremont Avenue, North Bend, Oregon

Photograph ID: 7	
Photo Location: 2nd Floor	
Direction: Interior	
Survey Date: 04/15/2022	
Comments: View of a 2 nd floor office, wood paneling (nailed) and metal support beams pictured.	

Photograph ID: 8	
Photo Location: Exterior	
Direction: East	
Survey Date: 04/15/2022	
Comments: View of building exterior, both tan and reddish-brown paints were non-lead-based.	