Riverbank Characterization Report
Terminal 4 Action Area
Port of Portland
Portland, Oregon

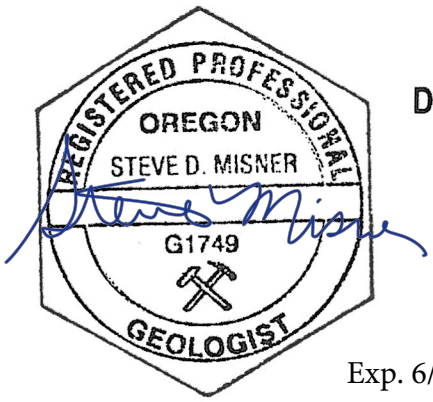
Prepared for:
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December 9, 2021
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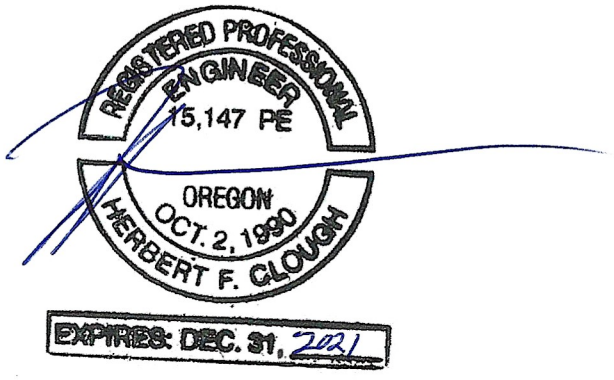
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List of Acronyms

µg/kg	micrograms per kilogram
ACA	Ash Creek Associates
ADCP	Acoustic Doppler Current Profiler
Anchor	Anchor QEA
Apex	Apex Companies, LLC
ARI	Analytical Resources Inc.
ASA	Auto Storage Area
AST	aboveground storage tank
BBL	Blasland, Bouck and Lee
BEBRA	Bank Excavation and Backfill Remedial Action
BEHI	Bank Erosion Hazard Index
BEHP	bis(2-ethylhexyl)phthalate
bgs	below ground surface
BML	below mudline
BMP	best management practice
CDC	Centers for Disease Control and Prevention
City CPD	City of Portland Commission of Public Docks
COC	contaminant of concern
COI	chemicals of interest
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CRD	Columbia River Datum
CSM	conceptual site model
CUL	Cleanup Level
DDE	total dichlorodiphenyldichloroethane
DDT	total dichlorodiphenyltrichloroethane
DDx	sum of DDE and DDT
DEQ	Oregon Department of Environmental Quality
DOT	Department of Transportation
EPA	United States Environmental Protection Agency
FS	Feasibility Study
GPS	Global Positioning System
HASP	health and safety plan
HxCDF	1,2,3,4,7,8-hexachlorodibenzofuran
IH	industrial use
JSA	Job Safety Analysis
KMBT	Kinder Morgan Bulk Terminals
LNAPL	light non-aqueous phase liquid

MDL	method detection limit
mg/kg	milligrams per kilogram
MHW	mean high water
N/m^2	Newtons per meter squared
NAVD88	North American Vertical Datum of 1988
NF	Newfields
NFA	No Further Action
OAR	Oregon Administrative Rules
OHW	ordinary high water
OLWL	ordinary low water line
OSHA	Occupational Safety and Health Act
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyls
PDF	portable document format
PDI	Pre-Remedial Design Investigation
PeCDD	1,2,3,7,8-pentachlorodibenzo-p-dioxin
PeCDF	2,3,4,7,8-pentachlorodibenzofuran
pg/g	picograms per gram
PHSS	Portland Harbor Superfund Site
PID	photoionization detector
Port	Port of Portland
PTW	Principal Threat Waste
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
RAL	Remedial Action Levels
RI	Remedial Investigation
RM	river mile
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SM	Standard Method
SOP	Standard Operating Procedure
T4	Terminal 4 Facility
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TCDF	2,3,7,8-tetrachlorodibenzofuran
TPH	total petroleum hydrocarbons
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
USCS	Unified Soil Classification System

USGS	United States Geologic Survey
UST	underground storage tank
VOC	volatile organic compounds

1.0 Introduction

This Riverbank Characterization Report (the Report) was prepared by Apex Companies, LLC (Apex) on behalf of the Port of Portland (Port) for the Terminal 4 Action Area (herein referred to as T4), located on the east bank of the Willamette River between river miles (RM) 4.2 and 5.0 in Portland, Oregon (Figure 1). This Report has been prepared under the Administrative Settlement Agreement and Order on Consent (ASAOC) for the Remedial Design for T4 (Docket No. Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA] 10-2004-0009), as amended on June 21, 2018, and in the Remedial Design Statement of Work (SOW; EPA, 2018). Per the SOW, this Report was prepared to identify and address data gaps by conducting field investigations in order to develop the Remedial Design for the T4 Action Area, as defined in the ASAOC.

The Report preparation and field investigations were conducted in accordance with the Riverbank Characterization Work Plan for the Terminal 4 Action Area (Work Plan) (Apex, 2020) approved by the EPA on September 2, 2020. It also follows the United States Environmental Protection Agency's (EPA's) Guidance for Riverbank Characterizations and Evaluations at the Portland Harbor Superfund Site (the Guidance; EPA, 2019a). The Guidance is to be considered for source control and remedial design processes for riverbanks within the Portland Harbor Superfund Site (PHSS).

In addition to riverbank characterization, this Report describes surface sediment sampling and results completed in an area in Slip 3 (base of former Pier 5) that was inaccessible during the T4 Pre-Remedial Design Investigation conducted in 2019 by Anchor QEA (Anchor) (Anchor, 2020a).

1.1 Purpose and Objectives

The purpose of the riverbank characterization is to evaluate whether bank erosion and transport are a significant pathway for recontamination of the Willamette River PHSS sediments. This Report builds upon previous investigations and evaluations for source control at T4 required by the Oregon Department of Environmental Quality (DEQ) pursuant to the following:

- T4 Slip 1 Upland Facility – Voluntary Agreement for Remedial Investigation, Source Control Measures, and Feasibility Study (DEQ No. LQVC-NWR-03-18), December 4, 2003; and
- T4 Slip 3 Upland Facility – Consent Judgement No. 0410-10234, Multnomah Circuit Court, October 7, 2004.

The objectives of the riverbank characterization include: (1) refining the conceptual site model (CSM) presented in the Work Plan; (2) delineating the extent of contamination in riverbank soils relative to applicable screening levels; (3) providing supplemental sediment data to support in-water work; and (4) identifying physical characteristics of the riverbank, preparing an erodibility evaluation, and evaluating erosion along the riverbank as a potential pathway for recontamination of PHSS sediment.

1.2 Report Organization

This document is organized in the following manner:

- Section 1 describes the site, summarizes historical and current uses, and summarizes prior actions on the T4 riverbank.
- Section 2 provides a description of the field activities for riverbank soil and sediment sampling and discusses deviations from the Work Plan.
- Section 3 presents physical characteristic data for the T4 riverbank, to include the results of the site reconnaissance, topographic survey, review of existing site information, and an erodibility evaluation.
- Section 4 presents the chemical characterization results for riverbank soil.
- Section 5 describes chemical characterization of sediment.
- Section 6 presents characterization findings.
- Section 7 presents a summary of sampling objectives.
- Section 8 is a list of references.

1.3 Site Description

A description of the site is provided herein, summarized from the Work Plan (Apex, 2020).

The T4 marine facility covers approximately 260 acres in the St. Johns area of North Portland at 11040 N. Lombard Street. The location and vicinity of T4 are shown on Figure 1. T4 is located on the east bank of the Willamette River between River Miles 4.2 and 5.0. The land is zoned for industrial use (IH). The areas surrounding T4 are occupied by marine, industrial, and commercial operations. A small residential zone (four tax lots) is located about 200 feet east of the terminal. Larger residential zones are located 2,000 feet east and 1,000 feet southeast of the terminal.

The topography of the T4 Upland Facility is relatively flat, with the majority of the terminal at an elevation of approximately 35 feet (all elevations in this Report are in North American Vertical Datum of 1988 [NAVD88] unless otherwise noted). The terminal entrance (east portion of the terminal near Lombard Street) is at an elevation of approximately 100 feet. The ground surface of the terminal consists of asphalt or cement concrete pavement, buildings, and areas of interspersed gravel and grass. Three inlets from the Willamette River are present in the northern portion of T4: Slip 1 to the north, Slip 3 to the south, and a smaller bay between the two slips informally referred to as Wheeler Bay (see Figure 2).

The T4 Upland Facility was divided into three areas for the purposes of oversight of investigation and/or cleanup by the DEQ. The three areas are designated as T4 Slip 1 (ECSI No. 2356), T4 Slip 3 (ECSI No. 272), and T4 Auto Storage Area (ASA; ECSI No. 172). These areas encompass 98 acres, 27 acres, and 102 acres,

respectively. The approximate boundaries of the T4 Slip 1 and T4 Slip 3 regulatory areas are shown on Figures 1 and 2. The ASA received a No Further Action (NFA) determination from DEQ on June 11, 2004.

T4 Slip 1 is located at the northern end of the terminal and is bound to the north by the Schnitzer Steel Products and the Northwest Pipe Company properties; to the east by the T4 property boundary (i.e. N Lombard Street and the Union Pacific Railroad [UPRR] right-of-way); to the south by Wheeler Bay, Slip 3, and the Slip 3 Upland Facility; and to the west by the ordinary high water line (OHWL). The Port also owns approximately 11 acres of the submerged lands below the OHWL in Slip 1.

T4 Slip 3 is bounded to the north by the Slip 1 Upland Facility; to the east by the T4 property boundary (i.e. N Lombard Street and the UPRR right-of-way); to the south by the T4 ASA; and to the west by the OHWL. The Port also owns approximately six acres of the submerged lands below the OHWL in Slip 3.

1.4 Historical Site Use

The following historical discussion is reproduced from the 2000 Remedial Investigation (RI) Report for the T4 Slip 3 Upland Facility (Hart Crowser, 2000) and the 2007 RI Report for the T4 Slip 1 Upland Facility (Ash Creek Associates [ACA]/Newfields [NF], 2007a) unless otherwise referenced.

Initial development of the area began in 1907 and 1908 with the construction of the UPRR along the eastern edge of the river floodplain. By 1912, UPRR had constructed its oil-supply dock and the St. Johns Tank Farm for fueling locomotives. The City of Portland Commission of Public Docks (City CPD) purchased the property west of the railroad (generally river floodplain) in 1917 as part of the original 117.55-acre site for the St. Johns Municipal Terminal. This included approximately 36 acres of submerged land around the former Gatton Slough, which entered the river near the head of Slip 1. Development of the terminal resulted in the filling of Gatton Slough and adjacent areas within the river, and the excavation of Slip 1.

In 1920, the quay and bulk handling facility at Pier 5 and Berth 412 were constructed in Slip 3. Pier 4, containing Berths 410 and 411 in Slip 3, was constructed in 1955 and outfitted with Whirley cranes. The cranes were removed in 1984. The bulk outloader Dravo was commissioned at Berths 410 and 411 in 1961. The use of the Dravo ended in 1998. The wharf at Pier 5 was removed in 1962, and the bulk outloader was decommissioned in 1990. The wharf at Berth 412 was removed in 1997. The location of the piers and berths are shown on Figure 2.

The Port acquired the T4 property in 1971 as a result of the Port's merger with the City CPD. In 1972, the Port purchased a strip of land along the northern property line from Broadway Holding Company in connection with the relocation of the grain berth to the face of current Berth 401. The Port leases portions of T4 to various tenants and multiple tenants have been present at T4 historically since its construction in the early 1900s.

Historical operations at T4 Slip 1 have included loading, unloading, processing, and storage of grain; handling of bulk cargos such as wool, cotton, and natural rubber; cold storage of food; fumigation of cotton and food products; liquid storage (*i.e.,* fertilizer, molasses, tallow, urea, caustic soda, and fats); flour milling; container food freight; a gasoline station; salvage yard; operation of a break-bulk berth; fire boat moorage; and importing lead and zinc ore concentrates.

Historically, the berthing areas at Slip 3 have been used for bulk cargo loading and unloading operations. Products handled at the Slip 3 berths have included petroleum products; soda ash; talc; sulfur; zinc, lead and copper ores/concentrates; bentonite clay; coal; coke; iron briquettes; and pencil pitch. Within Slip 3, bulk operations at Berth 412 were terminated in 1989. Currently, only Berths 410 and 411 are in use for handling soda ash. Pencil pitch was imported through Berths 410 and 411 of Slip 3 and handled at the adjacent Slip 1 Upland Facility area from 1979 to 1998.

Pier 5 was historically used as a bulk loading facility that handled diesel oil, coal, and iron, zinc, and copper ores. Diesel oil was handled by an underground pipeline that extended from the face of Pier 5, under Berth 412, to aboveground storage tanks (ASTs) off-site east of T4. The bulk ore shipments were moved by conveyor to ship loaders at Pier 5 and Berth 412.

1.5 Current Site Use

T4 is currently used as a marine facility and has five water-related areas within RM 4.5E, shown on Figure 2 and summarized as follows:

- Berth 401 – This is an active berth in the main river north (downstream) of Slip 1. Operations at Berth 401 consist of ship loading/unloading and bulk cargo, liquid, and grain handling.
- Slip 1 – This has no existing water-dependent uses, and future uses are planned to be limited to future barge use. Slip 1 contains two piers (Pier 1 and Pier 2) and three berths (405, 408, and 409).
- Wheeler Bay – This is an inactive bay with no current water-dependent uses and no anticipated future uses. Stabilization of the Wheeler Bay shoreline occurred as a source control measure during the 2008 T4 Phase I Removal Action (Anchor, 2009).
- Slip 3 – This contains Pier 4 with Berths 410 and 411 that are the main site of active marine operations (80% occupancy) serving deep-draft, ocean-going vessels. Berths 410 and 411 are located along the north side of Slip 3; the south side (i.e., former Pier 5) is inactive.
- Berth 414 – This is an active berth in the main river south (upriver) of Slip 3. It is used to unload automobiles from deep-draft, ocean-going vessels to the ASA located in the southern portion of T4.

As mentioned above, T4 Slip 3 has two active berths (410 and 411) on Pier 4. Current operations consist of loading, unloading, and handling of soda ash cargo. Soda ash operations, currently leased by Kinder Morgan Bulk Terminals (KMBT), include railroad tracks, a conveyor system with associated buildings, a 30,000 metric

ton storage building, and a maintenance warehouse with offices. Slip 3 also contains rail trackage which crosses the northern portion of T4. The soda ash is loaded onto ships at Berths 410 and 411. The following ASTs, underground storage tanks (USTs), and water retention structures are present at the KMBT leasehold:

- 500-gallon steel used oil AST
- 500-gallon steel gasoline AST
- 330-gallon poly tote for sulfuric acid
- 10,000- and 15,000-gallon ASTs for washwater
- 5,000-gallon fiberglass diesel UST
- 43,000-gallon concrete retention pond

Soda ash is the only cargo currently handled at Slip 3 and does not include chemicals that are contaminants of concern (COCs) in Portland Harbor sediments. In addition, the cargo loading, unloading, and handling are conducted in accordance with best management practices (BMPs) to reduce the risk of releases to the river.

1.6 Historical Riverbank Sampling and Remedial Actions

Multiple soil and groundwater investigations and remedial activities have been conducted at T4. This section summarizes sampling and completed remedial actions and/or source control actions conducted on the T4 riverbanks. Figure 2 shows the locations of these riverbank remedial or source control actions on the Facility Plan.

The Work Plan (Apex, 2020) includes a comprehensive discussion of historical investigations and remedial actions conducted at T4, and those historical data were used in developing the sampling plan. However, except at Berth 414, riverbank conditions have changed where historical data were collected and historical riverbank samples collected in those areas in 2005 to 2008 are no longer likely to be representative of current conditions. In all areas of prior sampling except Berth 414, either subsequent erosion or source control actions have occurred. Historical sampling data was collected from the upper portion of Berth 414 below a concrete wall and in an area of dense vegetation and generally stable slopes (two small areas of exposed soil were identified on this riverbank). The concrete wall and surface conditions provide protection to the riverbank soils; it is expected that historical conditions are unchanged. Therefore, only the historical data at the Berth 414 riverbank will be used for evaluating source control or remedial design.

Bank Excavation and Backfill Remedial Action (BEBRA). Petroleum seeps, sheen on surface water, and groundwater with petroleum discharging to Slip 3 were associated with historical light non-aqueous phase liquid (LNAPL) seepage and were addressed in 2004 with the BEBRA activities. This action was conducted at the head of Slip 3 as shown on Figure 2. This action generally consisted of removal of surface soil and riverbank soil, placement of amended backfill, and stabilization of the riverbank. A total of 4,581 tons of

impacted soil were removed during the activities. Following the excavation activities, the area was backfilled to pre-excavation grades with sand fill, borrow, and riprap, and the surface was finished with native vegetation. The sand fill was amended with organoclay designed to adsorb petroleum hydrocarbons prior to the groundwater entering the river (ACA/Blasland, Bouck and Lee [BBL]/NF, 2005).

Berth 414 Bank Removal. In the fall of 2003, during bank improvement and brush removal activities being conducted in the Berth 414 area as part of the ASA development, pencil pitch was observed by the construction contractor in a limited area near the top of the bank. DEQ was notified and approximately 50 cubic yards of soil (the maximum amount allowed by the project permits) with visible pencil pitch was removed and transported off site for disposal (ACA/Newfield, 2007b).

Slip Bank Source Area Investigation and Removal. Two phases of investigation were conducted to assess pencil pitch in riverbank soils on the south bank of Slip 3 (former Berth 412), the riverbank south of Slip 3 (Berth 414), and the northeast corner of Slip 3 (Slip Bank at head of Slip 3). See Section 2.6.3 of the Work Plan for a comprehensive discussion of the sampling (Apex, 2020).

Following pencil pitch observed on the ground surface in the northeast corner of Slip 3, soil sampling was conducted and identified the presence of polycyclic aromatic hydrocarbons (PAHs) in soil (ACA/BBL/NF, 2006). A source control alternatives evaluation was conducted, and removal was selected as the source control measure. In October 2009, the Slip Bank source area at the northeast corner of the head of Slip 3 was excavated and restored to original grade, and potential erosion was addressed with gravel fill on the Slip Bank and topsoil/plants/mulch in the Upland Facility area (ACA, 2010). Based on the completed riverbank stabilization actions, the riverbank at the Slip Bank in the northeast corner of Slip 3 has been controlled.

Terminal 4 Early Action, Head of Slip 3 Cap. As part of the Terminal 4 Phase I removal action construction that occurred between August and October 2008, capping was conducted at the head of Slip 3 to isolate petroleum-contaminated sediments from aquatic receptors and control a potential ongoing source to nearby areas (Anchor, 2009). This work was conducted to address a small in-water area that was not addressed by the BEBRA. The Slip 3 capping area is shown on Figure 2.

Wheeler Bay Bank Investigation and Stabilization. As part of the Slip 1 RI, eight riverbank soil samples were collected from erodible areas on Wheeler Bay and the south side of Slip 1. Based on the results of the investigation, an interim action was conducted. Wheeler Bay bank stabilization was conducted as a source control measure during the 2008 T4 Phase 1 Removal Action (ACA, 2009). The Wheeler Bay action location is shown on Figure 2. Shoreline stabilization activities included regrading to reduce the overall slope of the shoreline, placement of large woody debris and rip rap to resist erosive forces, placement of habitat material over the riprap, and cover soil/plants to enhance in-water and upland habitat. The regrading activities included removal of approximately 1,200 tons of soil/debris/vegetation for disposal in an off-site landfill. Additional construction activities to repair erosion that exposed potentially contaminated material in the planted area

occurred in 2010, 2011, and 2019. Wheeler Bay is currently monitored via the approved Amendment to the 2008 Interim Monitoring and Reporting Plan (Anchor, 2020a) to evaluate the effectiveness of stabilization activities and to identify any potential erosion or contamination issues that may arise. As a result of the bank stabilization activities and ongoing monitoring, Wheeler Bay is not considered a potential source of recontamination of river sediments.

2.0 Field Activities

2.1 Preparatory Activities

The following preparatory activities were completed before conducting the field activities.

Site Health and Safety Plan. A Site-specific health and safety plan (HASP) was prepared for field activities. The HASP was prepared in general accordance with the Occupational Safety and Health Act (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP was reviewed and signed by all field staff and maintained on-Site during the field activities. Prior to performing on-Site work, Apex prepared a Job Safety Analysis (JSA) guiding Site- and project-specific activities, risks, and risk mitigation measures. Safety topics were refreshed daily using a daily tailgate safety meeting, conducted by Apex's Site Supervisor or Site Safety Officer.

Due to the COVID-19 pandemic, additional safety measures were implemented during the field activities. Apex followed a prepared COVID-19 Awareness JSA and the March 31, 2020 Port of Portland COVID-19 requirements letter. The following steps were taken to reduce or eliminate the spread of COVID-19:

- Personnel committed to staying home and away from the job site if they were exhibiting symptoms of COVID-19 as described by the Centers for Disease Control and Prevention (CDC);
- If personnel on the job site began to have symptoms, they were required to leave immediately;
- Social distancing protocols were followed, with spacing greater than six feet. Enforcement was handled by the Site Safety Officer as presented in the HASP;
- Common areas and areas of high "hand traffic" were cleaned and disinfected regularly;
- Tools, pens, and paperwork were not shared;
- Personnel washed their hands regularly and thoroughly, and used hand sanitizer if soap and water were not available;
- Nitrile gloves were used and changed once they contacted a potentially contaminated surface; and
- All personnel wore cloth face coverings.

Property Access. Apex provided notification to Port personnel to coordinate access to the Site at Terminal 4. The field crew checked in at the guard gate daily and communicated work locations for the day. Port security would open necessary gates to gain access to the riverbank. Apex notified Port security at the end of each day that gates were locked and noted the Apex departure time.

Site Reconnaissance. On March 12 and May 20, 2019, Apex personnel conducted a reconnaissance of the T4 riverbank to provide information on the condition of the riverbank. Results from those reconnaissance were presented in the T4 Riverbank Characterization Work Plan (Apex, 2020). An updated site reconnaissance was completed concurrent with the field activities associated with the chemical characterization and updated results are described in Section 3.2.2.

2.2 Riverbank Soil Sampling

Riverbank soil samples were collected from September 28, 2020 through October 14, 2020. Soil samples were collected in accordance with the Work Plan Sampling and Analysis Plan (SAP; Apex, 2020) and the Standard Operating Procedure (SOP; Apex, 2020). A photo log documenting representative Site conditions during sampling is presented in Appendix A. Sampling field notes are included in Appendix B.

Sample locations were selected using both probabilistic-based and judgmental sampling design, as described in EPA's Guidance on Choosing a Sampling Design for Environmental Data Collection (2002). Judgmental sampling design involves the selection of sample locations based on knowledge of site conditions and professional judgement (EPA, 2002). For the T4 riverbank, judgmental sampling locations were selected below outfalls and from an area near the Head of Slip 3 with observed erosion. Probabilistic-based sampling design involves the random selection of sampling locations (EPA, 2002).

Riverbank soil was collected using a hand auger or a shovel to a depth of 30 cm below ground surface (bgs). A hand auger was the primary tool used to collect the soil samples. In circumstances when the hand auger was ineffective at recovering soil (i.e., in loose and/or gravelly soil conditions), a shovel was used. The sample logs in Appendix C identify the tool used at each sample location. The soil samples were collected from fresh exposed soil from 0 to 30 cm bgs. A minimum recovery of 10 cm bgs was required for an acceptable sample. All sampling tools were decontaminated between each location following the decontamination procedures outlined in the SAP (Apex, 2020). Decontamination water was stored in five-gallon buckets and transferred by the end of the day to 55-gallon Department of Transportation (DOT)-approved drums for subsequent disposal.

Once the targeted interval had been collected, the soil was thoroughly homogenized in a stainless steel bowl prior to placing in laboratory supplied jars. Samples collected for chlorobenzene analysis (a volatile organic compounds) were not collected from the homogenized bowl. Rather, a discrete sample was collected from the sidewall of the hand excavation at a depth of 15 cm below the ground surface. After the sample containers were filled, any remaining soil was returned to the sample point and the surface restored consistent to its

original condition. The field geologist described the lithologic characteristics using the Unified Soil Classification System (USCS) in general accordance with ASTM 2487/2488, noting any indications of contamination based on sheen testing, olfactory response, and photoionization detector (PID) reading. Soil sample logs are presented in Appendix C. No indications of contamination were observed in the soil samples. Soil sample T4RB-51U had a PID value of 5 parts per million (ppm). The PID values for all other samples were less than 5 ppm.

Collected soil samples were stored at 4±2 degrees Celsius (°C), and submitted to Apex Laboratories in Tigard, Oregon under chain-of-custody protocol for analysis. Apex Laboratories subcontracted dioxins/furans analysis to Bureau Veritas Labs in Ontario, Canada and tributyltin analysis to Analytical Resources Incorporated in Tukwila, Washington.

Table 1 lists the soil sample location coordinates at each sample location.

2.3 Sediment Sampling

Sediment samples were collected on October 15 and 16, 2020. Samples were collected in accordance with the Work Plan SAP (Apex, 2020) and approved modifications (see Section 2.5.3). Sample locations were accessed from a portable watercraft. Each analyzed sample consisted of a three-point composite. Three discrete samples were collected at equally spaced (approximately 25 feet apart, a slight deviation from the Work Plan and explained in Section 2.5.4) locations in a triangular pattern centered on the proposed sample location to generate the composite sample. The samples were collected from a depth of 0 to 30 cm below the mudline (BML). Consistent with the riverbank sampling methods, a minimum sediment recovery of 10 cm was required for a valid sample. Sampling equipment was decontaminated between each composite sample.

Once the targeted interval had been collected, the sediment was transferred to a decontaminated stainless steel bowl. After the three discrete samples were collected, the discrete samples were combined in a decontaminated stainless steel bowl and homogenized with a stainless steel spoon. The samples were then transferred to laboratory provided containers. After the sample containers were filled, any remaining sediment was returned to the sample collection area. The field geologist described the lithologic characteristics using the USCS in general accordance with ASTM 2487/2488, noting any indications of contamination based on sheen testing, olfactory response, and PID reading. Sediment sample collection logs are presented in Appendix D.

Collected sediment samples were labeled and placed in a chilled ice chest and stored at 4±2 degrees °C through transport and submittal to the analytical laboratory.

Table 1 lists the sediment sample location coordinates at each sample location.

2.4 Topographic Survey

A high-resolution photogrammetric/structure from motion topographic survey was conducted by aerial drone for the T4 riverbank in fall 2020 by David Evans and Associates, Inc. (DEA). The topographic survey included one-foot-interval elevation contours and identification of select site features. Survey control was accomplished by setting 34 scanning and 36 aerial control targets, which were occupied twice through Real Time Kinematic positioning. The control points average difference between measurements was 0.015 feet horizontal and 0.010 feet vertical. DEA measured 32 points independently for a confidence check with an average deviation of 0.033 feet vertically and a 93.75 percent confidence level. Site structures, such as Pier 1, Pier 2, and Pier 4, were present and obstructed the drone view of the riverbank, preventing completion of topographic survey in those areas. However, record drawings for these structures provide an accurate depiction of the features, which are used for describing the physical characterization of these three piers in Section 3 and Appendix G.

2.5 Deviations from Work Plan

2.5.1 Offset Sample Locations

Due to the presence of hard substrates or buried riprap beneath certain riverbank sample locations, a minimum recovery thickness of 10 cm was not always obtainable. If less than 10 cm was recovered, the sample location was relocated following the protocols outlined in the Work Plan (Apex, 2020). Seven sample locations (T4RB-28L, T4RB-2U, T4RB-5L, T4RB-11L, T4RB-17U, T4RB-51L, and T4RB-27U) required relocation within the cell due to inadequate recovery because of the presence of rip rap armoring. Relocated samples were noted in the field notes and the Global Positioning System (GPS) coordinates were recorded.

Three sample locations (T4RB-1L, T4RB-OJ, and T4RB-51L-OD) were submerged at the time of the sampling and were relocated within the cell and sampled. The Work Plan specified that if sampling locations are under water at the time of the field event, the lower bank sampling would be deferred until low water conditions are present. However, the river stage during the sampling event was at the seasonal-low stage and lower water conditions were not anticipated. Therefore, the sample was relocated to the closest location onshore. The adjustments were noted in the field notes and the Global Positioning System (GPS) coordinates were recorded. Judgmental samples T4RB-OJ and T4RB-51L-OD were relocated to a position that was still immediately downgradient of the associated outfall which is consistent with the judgmental sampling objectives. Sample T4RB-1L is a probabilistic sample in which random selection was used to determine its original position. Therefore, relocating the sample to a position on the riverbank does not alter the probabilistic sampling objectives.

Sample T4RB-18L-OM was originally planned as a soil sample location under Pier 2 at Berth 408. However, after physical inspection, the sample location was within the river under Pier 2 at the outfall outlet. It was determined to sample the location from the watercraft as a sediment sample. A Field Change Request (FCR)

Form was submitted to the EPA and approved (FCR Number 2). A new GPS location was not recorded at the time of sampling due to a lack of satellite signal under the pier, so the sample location coordinates were estimated based on the relative position of the sample under the pier. The FCR Form and EPA approval are included in Appendix E.

2.5.2 Sample Locations Outside of Riverbank Boundary

Three sample locations (T4RB-29U, T4RB-48U and T4RB-50U) were collected outside of the riverbank boundary (slightly above the top of bank). The actual sampling locations are consistent with the locations identified in the Work Plan and the locations are within 10 feet of the top of the bank. Chemical results from these locations are discussed with regards to their location above the riverbank in Section 4.0. While these three samples are outside the top of bank, no impacts are realized in meeting the riverbank characterization objectives as they are immediately adjacent to the top of bank.

2.5.3 Abandoned Sample Locations

One sample (T4RB-6L) could not be collected because soil recovery could not be achieved at any location within the sampling cell due to the presence of dense riprap. This change in the scope of work was noted in the field notes and a FCR Form was submitted to the EPA and approved (FCR Number 1). The Field Change Report and EPA approval are included in Appendix E.

Samples from unit cells 12 through 15 (including judgement sample location T4RB-15L-OQ) could not be collected due to unsafe conditions. The proposed sample points are located under the structure of former Pier 1. Considering the condition of the pier, the Port of Portland did not allow access beneath the pier for safety reasons. The Port notified EPA of this change in the scope of work by email dated October 13, 2020 and EPA acknowledged the Port's intention to defer sampling in this area in an email dated October 15, 2020.

2.5.4 Sediment Sample Collection Methodology

Initially, sediment samples were to be collected using a side-filling Russian Peat Borer as described in the Work Plan SAP. However, due to the depth to mudline (15 to 20 feet), the weight of the Russian Peat Borer, and lack of adequate recovery, the samples were collected using a universal polycarbonate corer equipped with a check-valve and deployed with rod extensions. This change in sediment sampling methodology was noted in the field notes and a FCR Form was submitted to the EPA and approved (FCR Number 3). The Field Change Request form and EPA approval are included in Appendix E.

In addition, the Work Plan indicates that the individual aliquots of each sediment composite sample would be collected within 5 to 10 feet of each other. However, due to the depth of the water and difficulty in maintaining an exact position in the inflatable watercraft, the spacing was widened to approximately 25 feet to allow for collection of a representative composite sample of the location.

2.5.5 Erodibility Evaluation

The erodibility evaluation described in Section 3.3 used multiple lines of evidence, including the Bank Erosion Hazard Index (BEHI) ranking system. However, the near-bank stress (NBS) was not included in the BEHI evaluation as the river current velocities are lower in the off-channel locations where the erosion potential is higher (south side of Slip 1 and south side of Slip 3.

2.6 Archived Samples

Seven probabilistic soil samples were collected for archive from cells containing a judgmental sample. Select archived samples were analyzed where the associated judgmental sample concentrations exceeded Portland Harbor Record of Decision (ROD) Remedial Action Levels (RALs) or Principal Threat Waste (PTW) thresholds. Of the archived samples, two were selected for analysis: Samples T4RB-1U and T4RB-17L. Sample T4RB-1U was selected for additional analysis due to the concentration of total PCBs in nearby judgmental sample, T4RB-1U-OS, which exceeded the PTW threshold. T4RB-1U was also analyzed for dioxin/furans due to the concentration of 1,2,3,7,8-Penta CDD in nearby sample T4RB-1U-OS which exceeded the RAL for the analyte.

Sample T4RB-17L was selected for additional analyses due to the concentrations of total PCBs, select dioxin/furans, and total PAHs in nearby judgmental sample T4RB-17L-ON. The concentration of total PCBs in the judgmental sample exceeded the PTW threshold; and dioxin/furans (2,3,7,8-Tetra CDD and 1,2,3,7,8-Penta CDD) and total PAH concentrations in the judgmental sample exceeded the RAL. The laboratory analyzed sample T4RB-17L for BEHP as an oversight; however, the results are still presented in the appropriate data table. Results from the analyzed archived samples are evaluated with the rest of the project data in Section 4.0.

The discrete sediment samples were collected and submitted to the laboratory for archive and to be analyzed if any of the associated composite sample concentrations exceeded the RAL or PTW thresholds.

2.7 Field Audit

A field audit was performed on September 30, 2020 by an Apex staff member who was not directly involved with this project. The completed field audit checklist is included in Appendix B. The field audit included a review and evaluation of implementation of approved work procedures, sampling procedures, sampling documentation, labeling, packaging, storage, and shipping of samples; completion of field records; QC compliance; and field change documentation. Field records were also reviewed to verify that field-related activities were being performed and documented in accordance with the SAP/QAPP. The audit was conducted when approximately 10 percent of the field work was completed. Based on the results of the field audit, no corrective actions were necessary.

3.0 Physical Characterization of Riverbank

This section describes the physical characteristics of the riverbank such as location, orientation, steepness, soil conditions, and erodibility. As presented in the Guidance (EPA 2019), for the purposes of physical characterization and applying erodibility evaluations, the riverbank is defined as extending from the top of the riverbank (defined as the point where the slope of the land surface changes from toward the river to toward the uplands) to the toe of the slope (defined as the first significant break in slope that is below the ordinary high waterline [OHWL] elevation and above the mean high waterline [MHWL] elevation). For chemical characterization purposes, the riverbank is defined as from the top of bank to -2 feet Columbia River Datum (3.4 feet NAVD88).

3.1 Topographic Survey Results

Maps showing results of the topographic survey at one foot intervals are presented in Appendix F in portable document format (PDF). The topographic survey results were used to assess various physical riverbank characteristics, described in more detail in the sections below.

3.2 Physical and Material Characterization Results

This section presents information relevant to the erodibility evaluation of the riverbank, including a review of existing site information and physical measurements/observations collected during the site reconnaissance and sampling activities. Appendix G presents site reconnaissance observations and cross sections for representative sections of the riverbank. A site plan is included showing the locations of the cross sections, and for each cross section, a representative photograph and description are provided.

3.2.1 Riverbank Soil Types

Terminal 4 was originally developed beginning in 1917 (see Section 1.4). Trees and vegetation were removed, and fill material was deposited across the low-lying ground. The fill was extended into the offshore shallows to extend the riverbank out into the channel (Port of Portland, 2013). Most of the fill was sourced from sand dredged from the river. Review of logs for borings completed on T4 are consistent with the fill history. Appendix H presents a cross section developed for the T4 Slip 3 remedial investigation (Hart Crowser, 2000) that is typical for T4. The cross section shows the fill to consist of medium-grained sand overlying the historical alluvial sediments (river bottom and former riverbank areas). The upper 20 to 40 feet of soil (comprising the majority of the riverbank soil) consists of medium-grained sand. Based on the fill history and age, the sand is estimated to be medium dense.

Riverbank soil sampling observations are consistent with the development history. Logs of the surface soil samples are presented in Appendix C. Excluding areas covered with rip rap, surface soil (up to 30 cm bgs) generally consisted of medium brown sand. The sand soils ranged from fine- to medium-coarse silty sand to

gravelly sand, slightly moist to wet, poorly graded, loose, with some sub-rounded gravel observed at times. Soils logged as silt with fine sand were occasionally observed in the lower sampling cell along the south side of Slip 1, the upper sample cells along the riverside of Slip 1, and Berth 414. Sandy gravel was also occasionally observed along the riverside of Slip 1, Berth 414, and from soil beneath the T4RB-K2 outfall at the head of Slip 3.

3.2.2 Riverbank Surface Conditions and Visual Erosion Indicators

A reconnaissance of the T4 riverbank was conducted by Apex personnel on March 12 and May 20, 2019 and results of the reconnaissance were presented in the Work Plan (Apex, 2020). Observations of the surface conditions were updated during collection of surface soil samples in October 2020. Based on the 2019 reconnaissance and 2020 update, Figure 3 identifies the physical conditions of the riverbank at T4. The bank appears protected and stable in the areas of rip rap, vegetation, and other structures (e.g., retaining walls) in-place, as shown on Figure 3. Potentially erodible riverbanks shown on Figure 3 include the following areas:

- Steep slopes and exposed soil observed on the south side of Slip 1 between Pier 2 and the mouth of the slip;
- Steep slopes and exposed soil observed at former Berth 412 area (south side of Slip 3);

Also, to a lesser degree, the following smaller areas were identified:

- Small areas of steep, exposed soil observed above the beach at Berth 401;
- One small area at the head of Slip 3 where a sign was recently installed; and
- Small areas of exposed soil on the upper portion of the riverbank at Berth 414.

Finally, other areas of the riverbank with exposed soil with flat slopes (slope flatter than approximately 6H:1V) or below the OHWL appear to be in equilibrium. However, additional information (e.g., sediment stability or other structures in-place) will be evaluated to assess whether these areas are in equilibrium or potentially susceptible to erosion. These areas are shown on Figure 3 as potentially erodible. Further evaluation of these areas will be conducted during remedial design.

Appendix G summarizes the riverbank surface conditions based on site reconnaissance, as-built drawings, and review of aerial photographs. Also, representative cross sections and photographs are provided together with a description of each section of riverbank in Appendix G. When applicable, these bank descriptions include an assessment of the condition of surface armoring along the riverbank.

3.2.3 Alignment of the River

Terminal 4 is located on the inside of a long, right-hand bend in the Willamette River resulting in relatively lower river currents adjacent to the T4 riverbank. This configuration, combined with protected off-channel

slips and bays, is generally more favorable to sediment deposition, although some of the river-facing banks on the mainstem river may be more exposed to erosional forces (Section 3.2.6).

3.2.4 Width and Depth of the River

The width of the Willamette River adjacent to T4 is between 1,600 and 1,700 feet (this does not include Slip 1, Wheeler Bay, or Slip 3). The Willamette River mudline elevation is -62 feet NAVD88 at its deepest adjacent to Slip 1 and -67 feet NAVD88 adjacent to Wheeler Bay and Slip 3. These areas are deeper than other portions of the Willamette River near the Site. Map 3.1-9 located in Appendix I taken from the Portland Harbor Remedial Investigation/Feasibility Study (RI/FS; EPA, 2016) shows the bathymetry adjacent to the Site.

The width and depth of the river were assessed up and downstream of the Site to draw conclusions about change as the flow moves from upstream to downstream. The upstream and downstream comparison locations were chosen to be above and below the deeper pool adjacent to Terminal 4. These locations are shown on Map 3.1-9 in Appendix I. The width, average depth, and maximum depth of the river at these three locations are shown in Table I-1.

3.2.5 Stream Velocity and Stage

The estimated stream velocity and cross-sectional areas for the Site at a river stage of mean high water (MHW; 10.14 feet NAVD88) and 100-year flood stage (32.3 feet NAVD88) are shown in Table I-1. The discharge used to calculate the velocity for MHW was taken from the United States Geologic Survey (USGS) Station 14211720 at the Morrison Bridge (USGS, 2021). The discharge for every reading of MHW was averaged over the last five years. The discharge for the 100-year flood event was taken from USGS estimates (USGS, 2018). The velocity and cross-sectional areas for locations upstream and downstream of the Site were also calculated for comparison. The velocity is lower adjacent to the Site as compared to upstream and downstream locations due to the larger cross-sectional area.

The Basis of Design Report (Anchor, 2021) provides an assessment of sediment stability for each of the T4 subareas (Berth 401, Slip 1, Wheeler Bay, Slip 3, and Berth 414) based on geomorphology, structures, marine operations, and prevailing current dynamics and sedimentary record. Based on this evaluation, ambient currents are weak within the interior of the T4 slips as evidenced by Acoustic Doppler Current Profiler (ADCP) measurements collected during the *Terminal 4 Early Action Engineering Evaluation/Cost Analysis* (BBL, 2004, Appendix G). During the ADCP, stronger currents were observed in the mainstem of the river with an abrupt transition to weak or negligible currents within the T4 slips, approaching the measurement resolution of the instrument. In addition, the survey showed evidence of clockwise eddy circulation in Wheeler Bay and weaker eddies in the two slips, which tend to induce suspended sediments to settle out of the mainstem of the river and deposit within the T4 off-channel areas. In fact, maintenance dredging is regularly performed at Berth 410 in Slip 3 where rapid infilling with sediment occurs. However, the shallow banks facing the mainstem of the river do not show evidence of sediment accretion. Therefore, river flow within the interior portions of T4

is not anticipated to contribute significantly to riverbank erosion. Further evaluation of riverbank erosion potential will be conducted during the remedial design process.

Map 3.1-7 from the Portland Harbor RI/FS is presented in Appendix J. This map presents modeling results of bed shear estimates. Under both the high-flow and low-flow scenarios, bed shear is at the lowest modeled level (0.00-0.10 Newtons per meter squared [N/m^2]) except for the Riverside of Slip 3, which is modeled as slightly elevated (0.11 – 0.40 N/m^2) under the high flow scenario.

3.2.6 Wind- and Vessel-Induced Wave Action

In general, waves impacting unprotected riverbanks may cause soil erosion depending on such factors as soil type, slope steepness, and wave height. The portions of the riverbank receiving the most wave action from the main channel of the Willamette River are Berth 401, the riverside of Slip 1, Wheeler Bay, and the riverside of Slip 3. These are the most armored portions of the riverbank and include rip rap or concrete along the portions below OHW. Appendix K presents Figure 3.4-17 from the Portland Harbor RI/FS showing wind and wake wave susceptible areas. Based on this figure, several exposed riverbank areas were identified as potentially being susceptible to vessel-induced waves. Likely heavier wave/wake action would be present from 6 to 13 feet NAVD88 and an area of likely less forceful wave/wake action from 0 to 6 feet NAVD88. Areas above 13 feet NAVD88 are unlikely to be impacted by wave/wake action. West-facing slopes along the mainstem of the Willamette River are most likely to be impacted, including downstream of Berth 401, between Slip 1 and Wheeler Bay, and downstream of Berth 414, as well as the southwest-facing slope in Wheeler Bay. In underpier areas and the former Pier 5 area, dense fields of pilings will tend to dissipate the effects of wave energy. Other shallow submerged structures, such as the timber pile bulkhead at the head of Slip 3 and at Berth 414, will also help to dissipate wave energy, especially during lower water levels.

Slip 3 is an active facility with vessels causing wave action and prop wash as they enter and exit. Slip 1 is inactive and does not have wave action from boat traffic within the slip.

3.3 Erodibility Evaluation

The BEHI rating system and methods developed by Dave Rosgen of Wildland Hydrology, Inc. (Rosgen, 2001) were used to evaluate the Site riverbank and assign risk ratings. The BEHI values are calculated by plotting site-specific riverbank characteristics on existing bank erosion curves to determine riverbank erosion rates (Rosgen, 2001). According to the EPA Riverbank Characterization Guidance (EPA, 2019), these erosion rate curves are only statistically valid for the streams from which they were derived and not universally applicable to other streams or rivers for estimating riverbank erosion rates. Therefore, the results from the BEHI calculations are estimates and may not be applicable based on the empirically-derived relationships used for the assessment. Results are presented in Appendix L and include transects selected to be a reasonable representation of like areas throughout the T4 riverbank. The transects used are the same as the cross sections in Appendix G. Vegetation root depths and density used in the BEHI calculations are estimated from

observed vegetation types. Bank material adjustments in the BEHI calculations were conservatively selected using the most erodible surface material observed along the transect. In addition, Appendix L includes a description of the riverbank parameters used in the BEHI calculation (i.e., height of bank, bankfull level, and bank angle). The overall conclusions of the BEHI evaluation are as follows:

- Areas covered with rip rap or protected by structures are generally not subject to erosion;
- Unprotected soils on the T4 riverbanks were rated as high to extreme potential for erosion depending on the riverbank slope, which ranged from five to 64 degrees;
- The BEHI ratings are only one line of evidence used for evaluating the erodibility of the riverbanks and may not reflect the actual conditions. For example, in the location of BEHI section D-D', the rating was extreme; however, based on observations, significant portions of the riverbank are protected with rip rap, structures, or heavy vegetation.

3.4 Riverbank Stability Summary

Factors to evaluate riverbank stability were assessed in the sections above and results are summarized as follows.

- Cross sections were prepared of the riverbank areas using the topographic survey data collected in fall 2020. From these cross sections, the bank angle, riverbank height and bankfull level were evaluated and used in the BEHI calculations. The cross sections were labeled with the riverbank features and are presented in Appendix G.
- Riverbank surface conditions were assessed based on site reconnaissance observations, topographic survey information, as-built drawings, and review of aerial photographs, as discussed in Appendix G.
- River alignment, width, depth, and velocity were assessed and Terminal 4, positioned on the inside of a river meander with off-channel embayments, is not unusually susceptible to erosion from these factors compared to other areas of Portland Harbor.
- Wind-induced wave erosion is not expected to be a significant factor, and the areas most susceptible to wave erosion are armored.
- Potential vessel wake/prop-wash-induced erosion is expected to be of concern primarily within Slip 3 during vessel movement in and out of Berth 410/411. The forthcoming Remedial Design Work Plan will include an evaluation of vessel propwash and wind- and vessel-generated wave analysis.
- The BEHI assessment showed that unprotected soils in the riverbank are susceptible to erosion from any of the above mechanisms unless protected, using approaches such as armoring, bulkheads, or established vegetation. However, this assessment does have limitations in its applicability because the erosion rate curves established for the assessment are not universally applicable for estimating riverbank erosion rates on all streams or rivers. In addition, the BEHI calculation is only applicable

for unprotected soils and does not take into consideration the effects of stabilization measures (such as riprap or retaining structures).

Physical characterization of the riverbank showed that erosion and transport of riverbank soil into the Willamette River is a complete pathway for limited portions of the riverbank at the Site. Figure 3 summarizes the physical characterization of the riverbank and shows the areas of the T4 riverbank susceptible to transport of riverbank soil to the river. The primary areas of concern are the south side of Slip 1 riverward of Pier 2 and the Pier 5 area (south side of Slip 3). Secondary areas of concern include small areas at Berth 401, the head of Slip 3, and the upper bank at Berth 414.

4.0 Chemical Characterization of Riverbank Soil

Figure 4 shows the locations of soil samples collected during the current study. The riverbank soil samples were submitted under chain of custody to Apex Laboratories in Tigard, Oregon (OR01039). Apex Laboratories subcontracted certain analytical services to Bureau Veritas Laboratories (formerly Maxxam Labs) of Ontario, Canada (CN00023) and Analytical Resources Inc. (ARI) of Tukwila, Washington (WA00037). The riverbank soil characterization analytical plan is provided in Table 1. Riverbank soil analytical results are presented in Tables 2 through 10. Copies of the analytical laboratory reports are included in Appendix M along with a quality assurance/quality control (QA/QC) review of the data. The results of the quality review indicate that the data are of acceptable quality and are suitable for their intended purpose.

4.1 Riverbank Soil Analytical Plan

This section summarizes the analytical testing program for riverbank soil collected as part of the riverbank chemical characterization. Table 1 summarizes the collected soil samples, the associated riverbank area and sample cell, and the chemical analyses performed for each sample.

Riverbank soil samples were collected from a total of seventy-three locations. Soil samples were analyzed for the chemicals of interest (COI) identified in the Work Plan (Apex, 2020) as summarized in Table 1. In addition, a subset of samples representing approximately 20 percent of the total samples collected were analyzed for the full suite of COIs listed in Table 17 of the PHSS ROD (EPA, 2020a) and consistent with Table 1 of the EPA Guidance for River Bank Characterization and Evaluations (EPA, 2019).

Identified site-specific COIs include the following:

- Total petroleum hydrocarbons (TPH) as diesel and oil range organics by Northwest Method NWTPH-Dx;
- PAHs by EPA Method 8270E (low-level method);
- Polychlorinated biphenyls (PCB) Aroclors by EPA Method 8082A;

- Dioxins/furans by EPA Method 1613B;
- Organochlorine pesticides by EPA Method 8081B; and
- Metals (arsenic, cadmium, copper, lead, mercury, and zinc) by EPA Method 6020A.

Twenty percent of riverbank soil samples were analyzed for the full suite of analytes. The full suite of analysis includes the COIs listed above plus the following:

- Chlorobenzene by EPA Method 8260D;
- Tributyltin ion by EPA Method 8270E-SIM; and
- Bis(2-ethylhexyl)phthalate (BEHP) by EPA Method 8270E.

Riverbank Soil Contingent Analysis. EPA Method 8081B performed by Apex Laboratories was not able to achieve a method detection limit (MDL) for dieldrin at or below the Portland Harbor Cleanup Level (CUL). Dieldrin was not detected in samples T4RB-23U, T4RB-25U, or T4RB-44L using EPA Method 8081B and they were selected to be analyzed by high-resolution EPA Method 1699, which can achieve the Portland Harbor CUL of 0.07 micrograms per kilogram (µg/kg). Samples T4RB-23U and T4RB-44L were selected because other chlorinated pesticides were detected in the samples. Sample T4RB-25U is part of the group of samples (20 percent) analyzed for the full suite of analysis.

In general, PCBs were analyzed by the Aroclor method (EPA Method 8082A). Because multiple overlapping Aroclors and/or PCB congeners were noted by Apex Laboratories in some samples, this method could under- or overestimate the total PCBs. Therefore, samples that slightly exceeded the RAL or PTW thresholds were also analyzed for PCB congeners by EPA 1668C. Samples analyzed for PCB congeners were T4RB-1U, T4RB-1L and T4RB-17L.

4.2 Riverbank Soil Sampling Results

Riverbank soil sampling results are listed in Tables 2 through 10 and results are summarized on Figures 5 through 11. Riverbank soil results are screened against the Portland Harbor CULs, RALs, and PTW thresholds in the tables. The upper samples at Cells 29, 48, 50, and 51 were located slightly above the top of bank as described in Section 2.5.2. The results from these samples are generally applicable for assessing riverbank COCs, but the potential limitations associated with the sample locations are considered in the discussion below.

4.2.1 Total Petroleum Hydrocarbons

A total of 73 soil samples were analyzed for diesel-range and oil-range TPH. TPH results are provided in Table 2 and summarized on Figure 5.

Oil-range TPH were detected above laboratory detection limits in 56 of the samples at concentrations ranging between 20.4 and 8,440 milligrams per kilogram (mg/kg) for samples T4RB-22L and T4RB-K1, respectively. There are no applicable screening levels for oil-range hydrocarbons.

Diesel-range TPH were detected above laboratory detection limits in 10 of the samples at concentrations ranging between 12.3 and 169 mg/kg for samples T4RB-1U-OS and T4RB-21U. Of these, diesel-range TPH concentrations in samples T4RB-1U-OS, T4RB-19U, and T4RB-43L exceeded the CUL (91 mg/kg). There are no RAL values or PTW thresholds for TPH, and no liquid phase hydrocarbons were observed during sampling.

4.2.2 Polycyclic Aromatic Hydrocarbons

A total of 52 soil samples were analyzed for PAHs. PAH results are provided in Table 3 and summarized on Figures 6a and 6b. Results are assessed for total PAHs and carcinogenic PAHs (cPAHs).

Seven samples contained concentrations of total PAHs that exceeded the CUL and the RAL. RAL exceedances were identified in Riverbank Cell 17 located at Berth 409, Riverbank Cell 40 at the head of Slip 3, Riverbank Cell 43 at former Berth 412 and Riverbank Cell 48 at the at Berth 414. There is no PTW threshold for total PAHs. The RAL exceedance in Cell 48 was in sample T4RB-48U. That sample was collected approximately 10 feet above the top of bank so the results may not be representative of the riverbank soil.

cPAHs were calculated for each sample and concentrations exceeded CULs in 12 of the samples, ranging from 1,020 µg/kg to 85,200 µg/kg for samples T4RB-44U-OD1 and T4RB-K1, respectively. None of the sample concentrations exceeded the PTW threshold for cPAHs. There is no RAL for cPAHs.

4.2.3 Polychlorinated Biphenyls

A total of 43 soil samples were analyzed for PCB Aroclors. Based on the analytical results from the Aroclor analysis, additional samples, T4RB-1U, T4RB-1L, and T4RB-17L, were selected for follow-up analysis for PCB congeners. Samples T4RB-1U and T4RB-17L were selected due to elevated concentrations of total PCBs observed in nearby samples, T4RB-1U-OS and T4RB-17U/T4RB-17L-ON, respectfully. Sample T4RB-1L was analyzed by both methods (Aroclors and congeners). By Aroclor method, total PCB concentration in sample T4RB-1L was 79.3 µg/kg and by congeners analysis for the same sample, total PCB concentration was 130 µg/kg. To be conservative, the higher concentration was used in further reporting and data evaluations. PCB results are provided in Tables 4a and 4b and summarized on Figure 7. Results are assessed for total PCBs.

Twenty-one of the samples exceeded the CUL. Nine samples exceeded the RAL and three samples exceeded the PTW threshold. RAL exceedances were detected from Riverbank Cell 1 in the Berth 401 area; Riverbank Cells 17 through 19 in Berth 409 and 408; and Riverbank Cell 40 in Head of Slip 3. PTW threshold

exceedances were detected from Riverbank Cell 1 in the Berth 401 area; Cell 17 in Berth 409; and Cell 40 in Head of Slip 3.

4.2.4 Organochlorine Pesticides

A total of 22 soil samples were analyzed for organochlorine pesticides. Pesticide results are provided in Table 5. Only dieldrin, total dichlorodiphenyldichloroethylene (DDE), total dichlorodiphenyltrichloroethane (DDT), and total DDx (sum of DDE, DDT, and total dichlorodiphenyldichloroethane [DDD]) were detected at least once above CULs. Figures 8a and 8b summarize total DDx and dieldrin results, respectively.

Six samples exceeded the CUL for Total DDx. Total DDx concentrations in samples T4RB-28U (riverside of Slip 1) and T4RB-46U (south side of Slip 3) exceeded the RAL. None of the sample concentrations exceeded the PTW threshold for DDx.

Four samples exceeded the CUL for Dieldrin.

4.2.5 Dioxins/Furans

A total of 51 soil samples were analyzed for dioxins/furans. Dioxin/furan results are provided in Table 6 and summarized on Figures 9a through 9e. Portland Harbor screening level values are available for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD); 1,2,3,7,8-pentachlorodibenzo-p-dioxin (PeCDD); 2,3,7,8-tetrachlorodibenzofuran (TCDF); 2,3,4,7,8-pentachlorodibenzofuran (PeCDF); and 1,2,3,4,7,8-hexachlorodibenzofuran (HxCDF).

2,3,7,8-TCDD Results. Thirteen samples exceeded the CUL and seven samples exceeded the RAL. No sample exceeded the PTW threshold.

Of the thirteen samples that exceeded the CUL, seven samples had 2,3,7,8-TCDD detections between the detection limit (DL) and the reporting limit (RL) and were J-flagged as estimated concentrations. Four of these samples (T4RB-1U, T4RB-2L, T4RB-5U, and T4RB-21U) exceeded the CUL with an exceedance ratio (ER) of less than three but were not isolated in their detections since other dioxin/furans were detected above CULs for the sample. Results above the DL and below the RL are positively identified, but the concentration at which they are reported is estimated due to instrument sensitivity.

Additionally, one sample (T4RB-22U) exceeded the CUL for 2,3,7,8-TCDD with an ER of less than two and was identified as an estimated maximum possible concentration (EMPC). However, the 2,3,7,8-TCDD detection for T4RB-22U is not isolated since other dioxins/furans were detected above CULs for the sample. Results that are EMPCs are JN-flagged, reported as detections, and are used in the calculation for the 2,3,7,8-TCDD toxic equivalent (TEQ) to conservatively assess dioxin/furan data. EMPCs do not meet the analyte

identification criteria for ion abundance but do meet all other identification criteria and are therefore reported as detections, as a conservative approach.

Results that are J and JN-flagged are less certain and should be considered when basing SMA-level decisions.

1,2,3,7,8-PeCDD Results. Thirty-four samples exceeded the CUL, 15 samples exceeded the RAL, and three samples exceeded the PTW threshold (T4RB-11L, T4RB-17U, and T4RB-46U).

Results for 31 samples were detected between the DL and RL (J-flagged) or were identified as EMPCs (JN-flagged) and exceeded the CUL. Low ERs of the CUL (less than three) were observed for 19 of these samples. Detections for T4RB-9U and T4RB-9L had low ERs of the CUL and other dioxin/furan exceedances for these samples were also low when compared to the CUL.

Of the 15 samples that exceeded the RAL, nine samples were J or JN-flagged, and seven of those with J or JN-flags exceeded the RAL with ERs of less than three. Samples with low ERs of the RALs and J or JN-flags and that did not have other RAL exceedances for dioxins/furans include T4RB-1U, T4RB-10U, T4RB-10L, T4RB-11U, T4RB-18U, and T4RB-22U.

One sample (T4RB-17U) exceeded the PTW threshold and was J-flagged.

2,3,7,8-TCDF Results. Twenty-four samples exceeded the CUL. No RAL has been established for the analyte. No sample concentrations exceeded the PTW threshold.

Eleven of the 24 samples that exceeded the CUL were also J-flagged. ERs for eight of these samples were less than three when compared to the CUL; however, other dioxins/furan congeners exceeded CULs for these samples.

2,3,4,7,8-PeCDF Results. Thirty samples exceeded the CUL. No sample concentrations exceeded the RAL or PTW threshold.

Twenty-three of the 30 samples that exceeded the CUL were J or JN-flagged. ERs for four of these samples were less than three when compared to the CUL; however, other dioxins/furan congeners exceeded CULs for these samples.

1,2,3,4,7,8-HxCDF Results. Forty-seven samples exceeded the CUL. No RAL has been established for the analyte. Thirteen samples exceeded the PTW threshold.

Twenty-six of the 47 samples that exceeded the CUL were J or JN-flagged. ERs for eight of these samples were less than three when compared to the CUL. Samples T4RB-6U, T4RB-8L, T4RB-9U, T4RB-9L, T4RB-16L-OO, T4RB-26U, T4RB-44L, T4RB-49L, and T4RB-51U had ERs of less than three for the CUL and no other non-marginal CUL exceedances.

Two of the 13 samples that exceeded the PTW threshold were J or JN-flagged. One of those samples (T4RB-17L-ON) exceeded the PTW threshold (less than 10 percent above the PTW threshold) and the PTW threshold was not exceeded by any other dioxins/furans for this sample.

Dioxins/Furans Results Summary. In summary, dioxin/furan congeners were detected above RALs or PTW thresholds in 12 sample cells (1, 5, 10, 11, 17, 18, 19, 21, 22, 24, 40, and 46). Eight of the sample cells exceeding RALs or PTW thresholds are located in Slip 1. The remaining four cells are scattered along the riverside and Slip 3 riverbank. Additional evaluations conducted as part of the Remedial Design process, including the Sufficiency Assessment, will further inform SMA decisions based on dioxins/furans.

4.2.6 Total Metals

A total of 38 soil samples were analyzed for the metals arsenic, cadmium, copper, lead, mercury, and zinc. Metals results are provided in Table 7 and summarized on Figures 10a through 10f. There are no RALs or PTW thresholds established for metals so results below are discussed relative to the CULs.

Arsenic was detected above laboratory reporting limits in all 38 analyzed samples with concentrations ranging between 1.56 mg/kg and 65.5 mg/kg for samples T4RB-47U and T4RB-K1, respectively. Twenty-nine of the samples exceeded the CUL. Oregon DEQ background arsenic concentrations in soil for the Portland Basin are 8.8 mg/kg which exceeds the CUL of 3 mg/kg (DEQ, 2013). Only three samples exceed the CUL and background arsenic concentrations (T4RB-19U, T4RB-K1, and T4RB-43U).

Cadmium was detected above laboratory reporting limits in 27 samples with concentrations ranging between 0.149 mg/kg and 74.5 mg/kg for samples T4RB-23U and T4RB-K1, respectively. Seventeen of the samples exceeded the CUL.

Copper was detected above laboratory reporting limits in 38 samples with concentrations ranging between 11.8 mg/kg and 16,200 mg/kg for samples T4RB-3L and T4RB-9L, respectively. Samples T4RB-K1 and T4RB-9L exceeded the CUL.

Lead was detected above laboratory reporting limits in 38 samples with concentrations ranging between 2.52 mg/kg and 11,100 mg/kg for samples T4RB-7U and T4RB-K1, respectively. Twelve samples exceeded the CUL.

Mercury was detected above laboratory reporting limits in 13 samples with concentrations ranging between 0.0556 mg/kg and 0.851 mg/kg for samples T4RB-18U and T4RB-K1, respectively. Eight samples exceeded the CUL. The DEQ background concentration of mercury in soil for the Portland Basin is 0.23 mg/kg which exceeds the CUL of 0.085 mg/kg (DEQ, 2013). One sample, (T4RB-K1) exceed the CUL and background concentration for mercury.

Zinc was detected above laboratory reporting limits in all 38 samples with concentrations ranging between 35.2 mg/kg and 12,600 mg/kg for samples T4RB-45U-OD3 and T4RB-K1, respectively. Ten samples exceeded the CUL.

4.2.7 Bis(2-ethylhexyl)phthalate

A total of 17 soil samples were analyzed for BEHP. BEHP results are provided in Table 8 and summarized on Figure 11. BEHP was detected above laboratory reporting limits in two samples, T4RB-7U and T4RB-9L (located on the north side of Slip 1), at concentrations of 235 µg/kg and 561 µg/kg, respectively. Both detections exceeded the Portland Harbor CUL. No RAL or PTW thresholds have been established for the analyte.

Eight samples were not detected for BEHP but had detection limits above the CUL. Detection limits were raised by the laboratory due to dilutions necessary to resolve sample matrices. Samples where detection limits exceeded the CUL for BEHP included T4RB-5U, T4RB-16L-O52C, T4RB-17U, T4RB-17L, T4RB-19L, T4RB-21U, T4RB-28U, and T4RB-K1.

4.2.8 Chlorobenzene

A total of 16 soil samples were analyzed for chlorobenzene. Chlorobenzene results are provided in Table 9. Chlorobenzene was not detected above laboratory reporting limits in any of the analyzed samples.

4.2.9 Tributyltin

A total of 16 soil samples were analyzed for tributyltin. Tributyltin results are provided in Table 10. Tributyltin was detected above laboratory reporting limits in two samples, T4RB-17U (located at the head of Slip 1) and T4RB-K1 (located at the head of Slip 3), at concentrations of 2.65 µg/kg and 0.688 µg/kg, respectively. Both detections were below the CUL.

5.0 Chemical Characterization of Sediment

Figure 4 shows the locations of sediment samples collected during the current study conducted in support of in-water work. The sediment samples were submitted under chain of custody to Apex Laboratories in Tigard, Oregon (OR01039). Apex Laboratories subcontracted certain analytical services to Bureau Veritas

Laboratories (formerly Maxxam Labs) of Ontario, Canada (CN00023). Copies of the analytical laboratory reports are included in Appendix M along with a QA/QC review of the data. The results of the quality review indicate that the data are of acceptable quality and are suitable for their intended purpose.

5.1 Sediment Analytical Plan

This section summarizes the analytical testing program for sediment. Table 1 summarizes the sediment samples, the associated riverbank area and sample cell, and the chemical analyses performed for each sample.

The sediment sampling was limited in scope and included collecting five sediment samples. Four samples (SG-04 through SG-07) were proposed in the Work Plan (Apex, 2020) and located at the base of former Pier 5 in Slip 3. Sample T4RB-18L-OM was originally proposed as a riverbank soil sample, but due to its location in the river, was collected as a sediment sample. Table 1 identifies the chemical analyses for sediment samples. Sediment samples were analyzed according to the *Pre-Remedial Design Investigation (PDI) Work Plan* (Anchor, 2019a) and *PDI Work Plan Addendum No. 1* (Anchor, 2019b). Surface sediment samples were analyzed by the following analytical methods:

- PAHs by EPA Method 8270E (low-level method);
- PCB congeners by EPA Method 1668C;
- Grain size by ASTM D422 modified;
- Total solids by Standard Method (SM) 2540G;
- Total organic carbon by EPA Method 9060A; and
- Dioxins/furans by EPA Method 1613B.

5.2 Sediment Sampling Results

A total of five sediment samples were analyzed for the sediment COIs (SG04 through SG07, and T4RB-18L-OM) and are screened against the Portland Harbor RALs and PTW thresholds. Sediment sampling results are listed in Table 11 and select results are presented with the riverbank soil results on Figures 6a and 6b for PAHs, Figure 7 for PCBs, and Figures 9a through 9e for dioxins/furans. No sediment samples exceeded RAL or PTW thresholds.

6.0 Riverbank Characterization Findings

This section provides a summary of findings for the T4 riverbank characterization efforts and includes an updated CSM for the T4 riverbank (including site geology, hydrogeology, and nature and extent of

contamination) based on the data presented in this Report. This report also summarizes the physical and chemical results of the characterization.

6.1 Geology and Hydrogeology

A detailed description of the geology and hydrogeology of T4 is presented in the *Terminal 4 Early Action Engineering Evaluation/Cost Analysis* (BBL, 2004) and is reaffirmed and/or refined in the *Terminal 4 Slip 1 Remedial Investigation Report* (ACA/NF, 2007), and the *PDI Work Plan* (Anchor, 2019a). Based on these reports, the T4 geology and hydrogeology are described below.

6.1.1 T4 Geology

The geology beneath T4 consists of the following generalized units:

- **Upland Fill Material** – Medium to fine sand; unit ranges in thickness from approximately 5 to 40 feet. Fill material generally increases in thickness towards the river.
- **Modern Sedimentary Deposits** – Silt, sandy silt, and silty sand; historical accumulations of approximately one to five feet thick; thickness increases towards the interior of the slips.
- **Unconsolidated Alluvial Deposits** – Fine sand located west of the former shoreline and interbedded layers of gravel, sand, silt, and clay to the east of the former shoreline; deposits range from approximately 65 to 160 feet thick.
- **Troutdale Formation** – Gravel and sandy gravel; the formation is generally encountered at an elevation of approximately -114 to -168 feet Columbia River Datum (CRD). Total thickness of the Troutdale formation is estimated to be about 100 feet thick.

6.1.2 T4 Hydrogeology

The regional groundwater flow direction at T4 is west towards the Willamette River. Nearshore, groundwater flow in the fill and unconsolidated alluvial deposits is in direct hydraulic connection with the river; thus, groundwater elevations fluctuate in response to the river stage. Depth to groundwater in the Upland Facility monitoring wells at Slip 3 during recent monitoring events showed a range of approximately 6.5 to 31 feet below ground surface (bgs). Monitoring by Northwest Pipe Company (which operates on the property adjacent north of Slip 1) that included wells on the T4 Slip 1 Upland Facility measured water levels ranging from 5.65 feet to 19.33 feet bgs (monitored between October 2016 and July 2017; CH2M, 2017). Groundwater flow direction in the vicinity of Slip 1 was consistently to the south and southwest with hydraulic gradients ranging from approximately 0.005 foot per foot (ft/ft) to 0.01 ft/ft (CH2M, 2017).

6.2 Riverbank Physical Erodibility Characterization Summary

Physical characterization of the riverbank and the results of the erodibility evaluation showed that erosion and transport of riverbank soil into the Willamette River is a complete pathway for limited portions of the riverbank at the Site. Although the BEHI assessment concluded that unprotected soil along the riverbank is at high to extreme risk of erosion, the assessment does not take into consideration surface protection measures (such as bank armoring, retaining structures, or extensive vegetation), and is only one line of evidence used in the erodibility evaluation (Section 3.0). Based on the evaluation of the multiple lines of evidence for erosion of riverbank soils, the primary areas of concern are the south side of Slip 1 riverward of Pier 2 and the Pier 5 area (south side of Slip 3). Other areas with exposed sand (including relatively flat sandy areas or below OHWL and small areas at Berth 401, the head of Slip 3, and the upper bank at Berth 414) will be further evaluated during the remedial design.

Figure 3 summarizes the physical characterization of the riverbank and shows the areas of the T4 riverbank susceptible to transport of riverbank soil to the river.

6.3 Nature and Extent of Riverbank Soil COCs

A total of 73 soil samples were collected as part of the riverbank chemical characterization. Contaminants of concern were identified in a total of 63 samples at concentrations that exceed the applicable CUL for at least one of the following analytes: diesel-range TPH, total PAHs, total PCBs, aldrin, dieldrin, total DDE, total DDx, arsenic, cadmium, copper, lead, mercury, zinc, BEHP, and dioxins/furans (1,2,3,4,7,8-HxCDF, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF, 2,3,7,8-TCDD, 2,3,7,8-TCDF, and total TEQ). A total of 21 samples exceeded the applicable RAL for at least one of the following analytes: total PAHs, total PCBs, total DDx, and dioxins/furans (2,3,7,8-TCDD and 1,2,3,7,8-PeCDD) and 15 samples exceeded the PTW threshold for at least one of the following analytes: total PCBs and dioxins/furans (1,2,3,7,8-PeCDD and 1,2,3,4,7,8-HxCDF). Figure 12 summarizes the CUL exceedances in riverbank soil and Figure 13 summarizes the RAL and PTW threshold exceedances in riverbank soil. As described in USEPA's *Remedial Design Guidelines and Considerations* (2020), an SMA will be delineated by surface and subsurface contamination above RALs **and** where exposure is occurring or has the potential to occur.

Diesel-Range TPH. Three riverbank soil samples exceeded the CUL for diesel-range TPH. There is no RAL or PTW threshold for diesel-range TPH. CUL exceedances were observed in Berth 401 (T4RB-1U-OS), Berth 408 (T4RB-19U), and former Berth 412 (T4RB-43L). Diesel handling and a petroleum pipeline release are associated with Berth 408 and Former Berth 412, respectively. The CUL exceedance at Berth 401 is located near the outfall for drainage basin S.

Total PAHs. Seven riverbank soil samples exceeded the CUL and the RAL for total PAHs. CUL and RAL exceedances were observed in Berth 409 near the outfall for stormwater runoff in drainage basin N; Head of Slip 3 near the outfall for drainage basin K1; head of Slip 3; one sample (T4RB-43U) collected from former

Berth 412; and one sample (T4RB-48U) collected from the northern portion of Berth 414 (this sample was located approximately ten feet above the top of bank). With one exception, total PAH CUL and RAL exceedances are at Slip 3 or Berth 414 where there was historical handling of pencil pitch and petroleum.

cPAHs. No PTW exceedances were identified in riverbank soil samples. Twelve riverbank soil samples exceeded the CUL for cPAHs. CUL exceedances were observed at Berth 409 near the outfall for stormwater runoff in drainage basin N and the northern portion of Berth 409; head of Slip 3 near the outfalls for drainage basins K1 and OJ; two samples (T4RB-43U and T4RB-44U-OD1) collected from former Berth 412; and two samples (T4RB-48U and T4RB-49U) collected from the northern and mid-portion of Berth 414.

Total PCBs. Twenty-three riverbank soil samples exceeded the CUL for total PCBs, nine of which exceeded the RAL, and three of which exceeded the PTW threshold. CUL exceedances were observed in the northern portion of Berth 401 (near the outfall for drainage basin S); the southern portion of Berth 401; all locations sampled at Berth 409 except for riverbank sample T4RB-16L-OO located at the outfall for drainage basin O and riverbank sample T4RB-17L; all locations sampled at Berth 408 except for riverbank sample T4RB-20L; and head of Slip 3.

RAL exceedances were observed in the northern portion of Berth 401 near the outfall for stormwater runoff in drainage basin S; Berth 409 near the outfall for drainage basin N; head of Slip 3; and the eastern portion of Berth 408.

There are no identified sources of PCB contamination to riverbank soil. Higher concentrations of PCBs (exceedances of PTW threshold) are located near outfalls.

Aldrin and total DDE. One riverbank soil sample (T4RB-28U) located on the riverside of Slip 1 exceeded the CUL for aldrin and total DDE. There are no known sources of organochlorine pesticide contamination to riverbank soil in the vicinity of this sample.

Dieldrin. Four riverbank soil samples exceeded the CUL for dieldrin. CUL exceedances were observed in Berth 401 at riverbank soil sample T4RB-3L; the south side of Slip 1; the riverside of Slip 1; and the riverside of Slip 3. There are no known sources of organochlorine pesticide contamination to riverbank soil in the vicinity of these samples.

Total DDT. Total DDT concentrations in samples T4RB-28U (riverside of Slip 1) and T4RB-46U (south side of Slip 3) exceeded the CUL. There are no known sources of organochlorine pesticide contamination to riverbank soil in the vicinity of these samples.

Total DDx. Six riverbank soil samples located within Berth 401, Berth 408, Riverside of Slip 1, Head of Slip 3, and Former Berth 412 exceeded the CUL for total DDx. Total DDx concentrations in samples T4RB-28U

(riverside of Slip 1) and T4RB-46U (south side of Slip 3) exceeded the RAL. None of the sample concentrations exceeded the PTW threshold for DDx. There are no known sources of organochlorine pesticide contamination to riverbank soil in the vicinity of these samples.

Arsenic. Twenty-eight of the 38 riverbank soil samples collected for arsenic exceeded the CUL. Exceedances were observed at the north side of Slip 1 at the two locations sampled (T4RB-7U and T4RB-9L); Berth 409 at the two locations sampled (T4RB-16L-O52C and T4RB-17U), Berth 408 at all locations with two exceptions (T4RB-20L and T4RB-22L), south side of Slip 1, head of Slip 3 at the one location sampled (T4RB-K1), former Berth 412 at all locations with two exceptions (T4RB-43L and T4RB-47U), and Berth 414 (riverside of Slip 3) at the two locations sampled (T4RB-49L and T4RB-51U).

Cadmium. Seventeen riverbank soil samples exceeded the CUL for cadmium. CUL exceedances were observed in the eastern portion of Berth 409; Berth 408, head of Slip 3 near the outfall for drainage basin K1, eastern portion and within Cell 46 at former Berth 412; and the western portion of Berth 414.

Copper. The CUL for copper was exceeded at two riverbank soil sample locations. CUL exceedances were observed at the north side of Slip 1 at location T4RB-9L and at the head of Slip 3 near the outfall for drainage basin K1.

Lead. Twelve riverbank soil samples exceeded the CUL for lead. CUL exceedances were observed in the eastern portion of Berth 409 at location T4RB-17U; at upper locations within Berth 408 and one lower location (T4RB-21L) within Berth 408; head of Slip 3 near the outfall for drainage basin K1; and upper locations within former Berth 412.

Mercury. Eight riverbank soil samples exceeded the CUL for mercury. CUL exceedances were observed in Berth 401 (T4RB-5U); Berth 408 at locations T4RB-19U and T4RB-21U; south side of Slip 1 at location T4RB-24L; riverside of Slip 1; head of Slip 3 near the outfall for drainage basin K1; and former Berth 412 at locations T4RB-43U and T4RB-44L.

Zinc. Ten riverbank soil samples exceeded the CUL for zinc. CUL exceedances were observed in Berth 408; head of Slip 3 near the outfall for drainage basin K1; and the eastern and western portion of former Berth 412.

BEHP. Two riverbank soil sample locations exceeded the CUL for BEHP. CUL exceedances were observed on the north side of Slip 1 at locations T4RB-7U and T4RB-9L.

2,3,7,8-TCDD. Thirteen riverbank soil samples exceeded the CUL for 2,3,7,8-TCDD. CUL exceedances were observed in the northern and southern portions of Berth 401; the eastern portion of north side of Slip 1; the southern portion of Berth 409; the eastern and western portion of Berth 408; head of Slip 3; and former Berth 412. Seven riverbank soil samples exceeded the RAL. RAL exceedances were observed in the northern and

southern portions of Berth 401; the eastern portion of the north side of Slip 1; the southern portion of Berth 409; head of Slip 3; and former Berth 412. Riverbank soil samples did not exceed the PTW threshold.

1,2,3,7,8-PeCDD. Thirty-four riverbank soil samples exceeded the CUL for 1,2,3,7,8-PeCDD. CUL exceedances were observed in Berth 401; the eastern portion of north side of Slip 1; Berth 409; Berth 408; riverside side of Slip 1; head of Slip 3; and one location at former Berth 412 (T4RB-46U). Fifteen riverbank soil samples exceeded the RAL for 1,2,3,7,8-PeCDD. Three samples exceeded the PTW threshold for 1,2,3,7,8-PeCDD. Except for two RAL/PTW threshold exceedances (one location at Berth 414 and one location at Slip 3), the RAL/PTW threshold exceedances were located in Slip 1. This is consistent with the findings in the Terminal 4 PDI Summary Report (Anchor, 2020b) showing the dioxin/furan RAL exceedances were generally confined to Slip 1 sediments. There are no known sources of dioxin/furans to the riverbank soil from the Facility.

2,3,7,8-TCDF. Twenty-four riverbank soil samples exceeded the CUL for 2,3,7,8-TCDF. CUL exceedances were observed in the northern and southern portions of Berth 401; the eastern portion of north side of Slip 1; Berth 409; Berth 408; south side of Slip 1; riverside of Slip 1; head of Slip 3; and former Berth 412. Riverbank soil samples did not exceed the PTW threshold.

2,3,4,7,8-PeCDF. Thirty-one riverbank soil samples exceeded the CUL for 2,3,4,7,8-PeCDF. CUL exceedances were observed in the northern and southern portions of Berth 401; the eastern portion of north side of Slip 1; Berth 409; Berth 408; south side of Slip 1; riverside of Slip 1; Head of Slip 3; and former Berth 412. Riverbank soil samples did not exceed the RAL or PTW threshold.

1,2,3,4,7,8-HxCDF. Forty-seven of the 51 riverbank soil samples collected exceeded the CUL for 1,2,3,4,7,8-HxCDF. CUL exceedances were observed in all riverbank areas (Berth 401, north side of Slip 1, Berth 409, Berth 408, south side of Slip 1, riverside of Slip 1, head of Slip 3, former Berth 412, and Berth 414). Riverbank soil samples below the CUL were observed in Berth 401 (T4RB-2U), the north side of Slip 1 (T4RB-7U), the south side of Slip 1 (T4RB-26L), and Berth 414 (T4RB-51U). Thirteen riverbank soil samples also exceeded the PTW threshold. The PTW threshold exceedances were observed in one location at Berth 401 (T4RB-5L); one location at the north side of slip 1 (T4RB-11L); the southern portion of Berth 409; throughout Berth 408; one location in south side of slip 1 (T4RB-24L); head of Slip 3; and one location at former Berth 412 (T4RB-46U).

Total TEQ. Twenty-four riverbank soil samples exceeded the CUL for total TEQ for dioxins/furans. CUL exceedances were observed in Berth 401; north side of Slip 1; Berth 409; Berth 408; head of Slip 3; and former Berth 412.

6.4 Physical and Chemical Findings Summary

This Riverbank Characterization Report assessed both the physical and chemical characteristics of the T4 riverbank and concludes the following.

- Physical characterization of the riverbank showed that erosion and transport of riverbank soil into the Willamette River is a complete pathway for limited parts of the Site. Figure 3 shows the general areas of the T4 riverbank susceptible to transport of riverbank soil to the river. The primary areas of concern are the south side of Slip 1 and the former Berth 412 area (south side of Slip 3). Three other small potential erosional features are present, above the beach at Berth 401, the head of Slip 3 near a recently installed sign, and the upper part of the riverbank at Berth 414 (see Figure 3). The remainder of the T4 riverbank is either protected (with rip rap, vegetation, and/or structures) or considered in equilibrium, where slopes are flat (approximately 6H:1V) and the upper portion of the bank is stabilized. While a flat slope (6H:1V) does not preclude the potential for erosion from wind- or vessel-generated waves and propwash, the vessel patterns at T4 make this less likely. Erosion via this mechanism is likely heaviest between 6 to 13 feet NAVD88 and along west-facing slopes, but will be evaluated as part of the Remedial Design process. Specifically, the discussion of erosion potential related to vessel propwash will be included in the RDWP and a vessel/wind wake analysis will be included in the Remedial Design deliverables.
- TPH-d, total PAHs, cPAHs, total PCBs, organochlorine pesticides, dioxin/furans, metals, and BEHP are present in riverbank soil at concentrations that exceed CULs. Figure 12 summarizes the locations of soil samples exceeding CULs.
- Total PAHs, total PCBs, dioxin/furans, and total DDx are present in riverbank soil at concentrations that exceed RALs and/or PTW thresholds. Figure 13 summarizes the locations of soil samples exceeding RALs and/or PTW thresholds. Screening of these COCs against RALs and PTWs is presented in Table 12. Additional sampling may be needed for vertical delineation in locations where RAL and/or PTW exceedances are identified as part of the remedial design process.

7.0 Summary of Sampling Objectives and Results

This section presents a summary of sampling objectives and provides an assessment of the adequacy of the riverbank characterization. The objectives of the characterization activities were to (1) refine the CSM; (2) delineate the extent of COCs in riverbank soils relative to applicable screening levels; (3) provide supplemental sediment data to support in-water work; and (4) identify physical characteristics of the riverbank to evaluate erosion as a potential pathway for recontamination of PHSS sediment. This riverbank characterization has achieved the objectives as summarized below.

Updated CSM. Information on the physical and chemical characteristics of the riverbank was collected and the riverbank CSM was updated as discussed in Section 6.

Extent of COCs in Riverbank Soils Adequately Delineated. No additional sampling is recommended to further delineate or identify Focused COCs in riverbank soils for the purposes of evaluating the riverbank pathway for source control. The sampling scheme to characterize riverbanks at T4 was primarily a probabilistic approach because there was limited information identifying potential contamination sources to the riverbanks (see Section 4 of the Work Plan). The results from the probabilistic sample locations are consistent with this CSM approach. PAH RAL exceedances for these locations were observed at Slip 3 or Berth 414 where there was historical handling of pencil pitch and petroleum in the upland facility. The results of the probabilistic soil sample screening for RALs/PTWs is provided in Table 12 and summarized below.

Total PAHs in probabilistic samples exceeded the RAL at a frequency ratio of 4:45 with an ER range of 2.0 to 5.6 and a mean of 3.3. No cPAH PTW exceedances were identified in riverbank soil samples.

No exceedances were identified in riverbank soil samples for 2,3,4,7,8-PeCDF (RAL or PTW) or 2,3,7,8-TCDF and 2,3,7,8-TCDD (PTW). RAL exceedances were identified in riverbank soil samples for 1,2,3,7,8-PeCDD (frequency ratio of 12:45 and ER range of 1.0 to 108 with a mean of 22) and 2,3,7,8-TCDD (frequency ratio of 4:45 and ER range of 1.8 to 16 with a mean of 8.8). PTW exceedances were identified in riverbank soil samples for 1,2,3,7,8-PeCDD (frequency ratio of 3:45 and ER range of 3.4 to 8.6 with a mean of 6.0) and 1,2,3,4,7,8-HxCDF (ER of 11:45 and ER range of 1.4 to 6.8 with a mean of 4.1). With the exception of one probabilistic location at Slip 3, D/F RAL exceedances were observed at Slip 1 where there are no known sources to the riverbank, but dioxin/furan RAL exceedances were generally confined to sediments in Slip 1 (Anchor, 2020b).

Five samples exceeded the RAL for total PCBs in probabilistic samples (frequency ratio of 5:36 and ER range of 1.1 to 2.4 with a mean of 1.7). There are no obvious sources of PCBs.

Two probabilistic samples exceeded the RAL for total DDx (frequency ratio of 2:20, minimum and maximum ER range of 2.2 to 3.9 with a mean of 3.1). There are no obvious sources for DDx.

For the majority of probabilistic samples with RAL exceedances, the locations were bounded by samples not exceeding RALs and/or PTW thresholds and no additional sampling is recommended for lateral delineation for meeting data quality objectives. Additional sampling may be warranted to support remedial design, including vertical delineation in locations with PTW exceedances. This potential data gap will be informed by the forthcoming Sufficiency Assessment evaluations and will be addressed as part of the remedial design. Only 12 Cell locations with no judgmental samples contained a sample above an RAL and/or PTW threshold out of a total of 47 Cell locations delineated along the T4 riverbank.

The remaining sampling scheme to characterize the riverbanks consisted of a judgmental approach (see Section 4 of the Work Plan). Thirteen judgmental locations were selected, with all but one location being below a stormwater outfall. Judgmental samples below outfalls from Cells 1, 17, and 40 and the judgmental

sample collected from a small area of erosion in Cell 40 each contained multiple COCs at concentrations detected above the applicable RAL and/or PTW threshold. Additional sampling may be warranted to support remedial design, including vertical delineation in locations with PTW exceedances. This potential data gap will be informed by the forthcoming Sufficiency Assessment evaluations and will be addressed as part of the remedial design. The results are consistent with stormwater outfalls generally being a potential historical source for contamination.

The results from the remaining potential COCs (metals, BEHP, chlorobenzene, tributyltin) have been adequately characterized as presented in Section 4 and no additional sampling is recommended to further delineate for the purposes of source control evaluation for the riverbanks.

Supplemental Sediment Data Were Collected. Sediment samples were collected in the vicinity of former Berth 412 from areas that were not accessible during the PDI sediment sampling. The sediment data are discussed in Section 5.

Physical Condition of the Riverbank Adequately Characterized. Figure 3 summarizes the evaluation of the potential erosion of the T4 Riverbank. The conclusions of the physical characterization are discussed in Section 6.

Other Considerations. The riverbank characterization presented in this Report will be used for several purposes to support remedial design for the in-water sediment remedy at Terminal 4. Further riverbank characterization refinement is anticipated to occur during the remedial design process based on site-specific conditions and additional, updated information. The following provides a summary of factors that were or will be taken into consideration when updating the riverbank characterization as part of the T4 SMA refinement during remedial design.

- **Source Control Evaluation:** The riverbank has been adequately characterized for conducting a source control evaluation or potential recontamination analysis for this pathway at T4. These evaluations will be conducted as part of the Sufficiency Assessment Report (SAR), including identifying areas of potential further focus for remedial design and refining the SMA.
- **Additional Sampling to Support Remedial Design:** While the overall extent of COCs is adequately characterized for the purposes of source control evaluation, additional sampling may be warranted to support remedial design, including vertical delineation to bound contamination for remedial design, where RAL and/or PTW exceedances are identified. The need for additional sampling to support remedial design will be informed by the evaluations conducted in the SAR. As applicable, additional sampling will be identified and collected through the Supplemental Pre-Remedial Design Investigation.
- **Historical Data:** The vast majority of historical data was collected in areas where source control actions have been completed as described in Section 1 and in areas that are susceptible to erosion

described in the erodibility evaluation (Section 3) including the south side of Slip 1 and the former Berth 412 area. The use of historical data for source control decisions or identifying areas for remedial design considerations will be evaluated in the SAR.

- **D/F Representativeness:** Additional consideration is warranted to evaluate the representativeness of dioxin/furan data when factoring in background inputs, potential sources, and analytical results, as discussed in Section 4.

8.0 References

Anchor QEA, LLC, 2009 (Anchor). *Final Removal Action Completion Report: Terminal 4 Phase I Removal Action.* June, 2009.

Anchor, 2019a. *Pre-Remedial Design Investigation Work Plan, Terminal 4 Remedy.* March 8, 2019.

Anchor, 2019b. *Pre-Remedial Design Investigation Work Plan Addendum No. 1. Terminal 4 Remedy. Prepared for USEPA*. March 14, 2019.

Anchor, 2020a. *Amendment to the 2008 Interim Monitoring and Report Plan, Terminal 4 Phase I Removal Action.* May 2020.

Anchor, 2020b. *Pre-Remedial Design Investigation Summary Report, Terminal 4 Remedy*. July 30, 2020

Apex Companies, LLC (Apex), 2020. *Riverbank Characterization Work Plan, Terminal 4 Action Area, Portland, Oregon*. September 4, 2020.

Ash Creek Associates, Inc. (ACA)/Newfields (NF), 2007a. *Remedial Investigation Report, Terminal 4 Slip 1 Upland Facility, Port of Portland, Portland, Oregon.* August 2007.

ACA/NF, 2007b. *Phase II Pencil Pitch Investigation Report, Terminal 4 Slip 3 Upland Facility.* July 16, 2007.

ACA, 2008. *Pencil Pitch – South Bank Characterization, Terminal 4 Slip 3*. July 2, 2008.

ACA, 2009. *Wheeler Bay Source Control Completion Report, Terminal 4 Slip 1 Upland Facility.* September 8, 2009.

ACA, 2010. *Source Control and Hot Spot Removal Completion Report, Terminal 4 Slip 3 Upland Facility, Port of Portland, Portland, Oregon.* January 5, 2010.

ACA/Blasland, Bouck & Lee/NF (ACA/BBL/NF), 2005. *Construction Completion Report, Bank Excavation and Backfill, Remedial Action.* March 1, 2005.

ACA/BB/NF, 2006. *Pencil Pitch Investigation Report, Terminal 4 Slip 3 Upland Facility, Port of Portland, Oregon*. May 11, 2006.

Blasland, Bouck & Lee, Inc. (BBL), 2004. *Terminal 4 Early Action Engineering Evaluation/Cost Analysis*. February 23, 2004.

Bowles, Joseph E, 1982. *Foundation Analysis and Design*. Third Edition, McGraw-Hill Book Company, New York.

CH2M, 2017. *Supplemental Groundwater Data Report Northwest Pipe Company, Portland, Oregon ESCI #138.* August 18, 2017.

Environmental Protection Agency (EPA), 2016. *Portland Harbor RI/FS Feasibility Study*. June 2016.

EPA, 2017. *Record of Decision, Portland Harbor Superfund Site.* January 2017.

EPA, 2018. *Remedial Design Statement of Work, Portland Harbor Superfund Site.* Terminal 4 Action Area. June 2018.

EPA, 2019a. *Guidance for River Bank Characterizations and Evaluations at the Portland Harbor Superfund Site.* September 10, 2019.

EPA. 2019b. *Explanation of Significant Differences, Portland Harbor Superfund Site, Portland, Oregon*. December 9, 2019.

EPA, 2020a. *Errata #2 for Portland Harbor Superfund Site Record of Decision ROD Table 17.* January 14, 2020.

EPA, 2020b. *Remedial Design Guidelines and Considerations*, *Portland Harbor Superfund Site*. February 28, 2020.

Hart Crowser, 2000. *Remedial Investigation Report, Terminal 4, Slip 3 Upland, Port of Portland, Portland, Oregon*. January 21, 2000.

Lambe, William T. and Whitman, Robert V, 1969. *Soil Mechanics*. John Wiley & Sons, New York.

Oregon Department of Environmental Quality (DEQ), 2013. *Development of Oregon Background Metals Concentrations in Soil.* March 2013.

Port of Portland, 2013. *Port of Portland 104(e) Response for the Terminal 4 Slip 1 and Slip 3*. Document Number POP0505820. July 8, 2013.

Rosgen, D. L, 2001. *A Practical Method of Computing Streambank Erosion Rate*. Proceedings of the Seventh Federal Interagency Sedimentation Conference, 2(2): 9 – 15.

United States Army Corps of Engineers (USACE), 2016. Hydrologic Engineering Center's River Analysis System. https://www.hec.usace.army.mil/software/hec-ras/.

United States Geologic Survey (USGS), 2018. *Preliminary Flood-Duration Frequency Estimates Using Naturalized Streamflow Records for the Willamette River Basin, Oregon*. 2018.

USGS, 2021. *USGS Current Conditions for Oregon, USGS 14211720 Willamette River at Portland, OR.* https://waterdata.usgs.gov/or/nwis/uv?site_no=14211720. Accessed February 2021.

Table 1
Sampling and Analysis Program
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Type	Judgmental Sample Target	Sample Date	Coordinates		Sample Elevation (ft amsl)	Riverbank Soil COIs						Additional Analyses		
							Northing	Easting		TPH	PAHs	PCBs	Pesticides	Dioxins/ Furans	Metals	Chloro-benzene	Butyltins	BEHP
Berth 401	1	Upper	T4RB-1U-OS	Judgmental	Outfall - Drainage Basin S	9/29/2020	715389.912	7618744.342	12	X		X		X				
			T4RB-1U	Archive	--	9/29/2020	715414	7618763.5	17									
		Lower	T4RB-1L	Probabilistic	--	9/29/2020	715394.064	7618702.608	--	X		X		X				
	2	Upper	T4RB-2U	Probabilistic	--	9/30/2020	715271.222	7618737.17	16	X		X		X				
		Lower	T4RB-2L	Probabilistic	--	9/30/2020	715284.299	7618691.896	--	X		X		X				
	3	Upper	T4RB-3U	Probabilistic	--	9/30/2020	715153.943	7618769.349	17	X		X		X				
		Lower	T4RB-3L	Probabilistic	--	9/30/2020	715145.105	7618716.489	7	X	X	X	X	X	X	X	X	X
	4	Upper	T4RB-4U-OR	Judgmental	Outfall - Drainage Basin R	9/30/2020	715002.294	7618777.956	11	X		X		X				
			T4RB-4U	Archive	--	9/30/2020	715006.985	7618815.681	26									
		Lower	T4RB-4L	Probabilistic	--	9/30/2020	715017.095	7618761.724	--	X		X		X				
	5	Upper	T4RB-5U	Probabilistic	--	9/30/2020	714897.379	7618880.083	19	X	X	X	X	X	X	X	X	X
		Lower	T4RB-5L	Probabilistic	--	9/30/2020	714879.613	7618877.078	18	X		X		X				
North Side of Slip 1	6	Upper	T4RB-6U	Probabilistic	--	10/1/2020	714831.914	7618977.756	27	X				X				
		Lower	T4RB-6L	Probabilistic	--	--	--	--	--	Not Sampled								
	7	Upper	T4RB-7U	Probabilistic	--	10/1/2020	714826.197	7619105.703	26	X	X	X	X	X	X	X	X	X
		Lower	T4RB-7L	Probabilistic	--	10/1/2020	714776.966	7619077.747	--	X				X				
	8	Upper	T4RB-8U	Probabilistic	--	10/1/2020	714813.970	7619266.821	26	X				X				
		Lower	T4RB-8L	Probabilistic	--	10/1/2020	714769.479	7619232.196	12	X				X				
	9	Upper	T4RB-9U	Probabilistic	--	10/1/2020	714814.838	7619391.022	29	X				X				
		Lower	T4RB-9L	Probabilistic	--	10/2/2020	714763.024	7619383.886	11	X	X	X	X	X	X	X	X	X
	10	Upper	T4RB-10U	Probabilistic	--	10/2/2020	714806.478	7619535.576	29	X				X				
		Lower	T4RB-10L	Probabilistic	--	10/2/2020	714764.463	7619524.569	15	X				X				
	11	Upper	T4RB-11U	Probabilistic	--	10/2/2020	714804.234	7619699.342	30	X				X				
		Lower	T4RB-11L	Probabilistic	--	10/2/2020	714769.45	7619701.802	19	X				X				
Berth 405	12	Upper	T4RB-12U	Probabilistic	--	--	--	--	--	Not Sampled								
		Lower	T4RB-12L	Probabilistic	--	--	--	--	--	Not Sampled								
	13	Upper	T4RB-13U	Probabilistic	--	--	--	--	--	Not Sampled								
		Lower	T4RB-13L	Probabilistic	--	--	--	--	--	Not Sampled								
	14	Upper	T4RB-14U	Probabilistic	--	--	--	--	--	Not Sampled								
		Lower	T4RB-14L	Probabilistic	--	--	--	--	--	Not Sampled								
	15	Upper	T4RB-15U	Probabilistic	--	--	--	--	--	Not Sampled								
		Lower	T4RB-15L	Archive	--	--	--	--	--	Not Sampled								
			T4RB-15L-OQ	Judgmental	Outfall - Drainage Basin Q	--	--	--	--	Not Sampled								

Please see notes at end of table.

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Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Type	Judgmental Sample Target	Sample Date	Coordinates		Sample Elevation (ft amsl)	Riverbank Soil COIs						Additional Analyses		
							Northing	Easting		TPH	PAHs	PCBs	Pesticides	Dioxins/ Furans	Metals	Chloro-benzene	Butyltins	BEHP
Berth 409	16	Upper	T4RB-16U	Probabilistic	--	10/7/2020	714600.2243	7620420.5443	20	X	X	X		X				
		Lower	T4RB-16L	Archive	--	10/7/2020	714598.3204	7620393.5673	9									
			T4RB-16L-O52C	Judgmental	Outfall - City Outfall 52C	10/7/2020	714572.0429	7620389.5352	--	X	X	X	X	X	X	X	X	X
			T4RB-16L-OO	Judgmental	Outfall - Drainage Basin O	10/7/2020	714520.3341	7620410.0006	--	X	X	X		X				
	17	Upper	T4RB-17U	Probabilistic	--	10/8/2020	714443.1940	7620478.6977	16	X	X	X	X	X	X	X	X	X
		Lower	T4RB-17L	Archive	--	10/8/2020	714453.1179	7620455.9279	11									
			T4RB-17L-ON	Judgmental	Outfall - Drainage Basin N	10/8/2020	714438.9311	7620447.7203	--	X	X	X		X				
Berth 408	18	Upper	T4RB-18U	Probabilistic	--	10/5/2020	714278.1970	7620449.4708	--	X	X	X		X	X			
		Lower	T4RB-18L	Archive	--	10/5/2020	714320.6257	7620440.6351	--									
			T4RB-18L-OM	Judgmental	Outfall - Drainage Basin M	10/16/2020	--	--	--	Sampled as Sediment								
	19	Upper	T4RB-19U	Probabilistic	--	10/5/2020	714269.3800	7620267.2019	--	X	X	X		X	X			
		Lower	T4RB-19L	Probabilistic	--	10/5/2020	714312.5946	7620287.6677	--	X	X	X	X	X	X	X	X	X
	20	Upper	T4RB-20U	Probabilistic	--	10/5/2020	714274.1193	7620112.1166	--	X	X	X		X	X			
		Lower	T4RB-20L	Probabilistic	--	10/6/2020	714314.4189	7620128.6354	--	X	X	X		X	X			
	21	Upper	T4RB21U	Probabilistic	--	10/6/2020	714279.2281	7619964.6322	--	X	X	X	X	X	X	X	X	X
		Lower	T4RB-21L	Probabilistic	--	10/6/2020	714319.5286	7619984.5564	--	X	X	X		X	X			
	22	Upper	T4RB-22U	Probabilistic	--	10/6/2020	714286.5909	7619812.6362	--	X	X	X		X	X			
		Lower	T4RB-22L	Probabilistic	--	10/6/2020	714326.0791	7619827.8630	--	X	X	X		X	X			
South Side of Slip 1	23	Upper	T4RB-23U	Probabilistic	--	9/28/2020	714283.5464	7619663.4918	23	X	X	X	X	X	X			
		Lower	T4RB-23L	Probabilistic	--	9/28/2020	714322.1367	7619678.8052	11	X	X	X	X	X	X	X	X	X
	24	Upper	T4RB-24U	Probabilistic	--	9/28/2020	714294.7413	7619513.3065	16	X	X	X	X	X	X			
		Lower	T4RB-24L	Probabilistic	--	9/28/2020	714326.3308	7619530.6890	--	X	X	X	X	X	X			
	25	Upper	T4RB-25U	Probabilistic	--	9/28/2020	714296.0562	7619368.3408	22	X	X	X	X	X	X	X	X	X
		Lower	T4RB-25L	Probabilistic	--	9/28/2020	714329.3373	7619379.5621	11	X	X	X	X	X	X			
	26	Upper	T4RB-26U	Probabilistic	--	9/28/2020	714298.6198	7619223.8160	22	X	X	X	X	X	X			
		Lower	T4RB-26L	Probabilistic	--	9/28/2020	714326.4220	7619242.8388	10	X	X	X	X	X	X			
Riverside of Slip 1	27	Upper	T4RB-27U	Probabilistic	--	9/28/2020	714263.4430	7619164.8160	26	X								
		Lower	T4RB-27L	Probabilistic	--	9/28/2020	714307.3473	7619123.0178	13	X								
	28	Upper	T4RB-28U	Probabilistic	--	9/29/2020	714192.6431	7619213.9027	35	X	X	X	X	X	X	X	X	X
		Lower	T4RB-28L	Probabilistic	--	9/29/2020	714183.9865	7619149.9555	13	X								
	29	Upper	T4RB-29U	Probabilistic	--	9/29/2020	714135.1666	7619281.3632	35	X								
		Lower	T4RB-29L	Probabilistic	--	9/29/2020	714089.6276	7619241.4756	21	X								
Head of Slip 3	40	--	T4RB-K1	Judgmental	Outfall - Drainage Basin K1	10/8/2020	713401.5761	7620496.2398	--	X	X	X	X	X	X	X	X	X
		--	T4RB-K2	Judgmental	Outfall - Drainage Basin K2	10/8/2020	713362.6582	7620497.1279	--	X	X	X						
		--	T4RB-BEBRA	Judgmental	Erosion in BEBRA wall	10/8/2020	713328.2557	7620512.1179	10	X	X	X						
	41	--	T4RB-OJ	Judgmental	Outfall - Drainage Basin J	10/9/2020	713186.282	7620518.473	11	X	X	X						

Please see notes at end of table.

Table 1
Sampling and Analysis Program
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Type	Judgmental Sample Target	Sample Date	Coordinates		Sample Elevation (ft amsl)	Riverbank Soil COIs						Additional Analyses		
							Northing	Easting		TPH	PAHs	PCBs	Pesticides	Dioxins/ Furans	Metals	Chloro-benzene	Butyltins	BEHP
Former Berth 412	43	Upper	T4RB-43U	Probabilistic	--	10/12/2020	712974.3194	7620344.2321	30	X	X				X			
		Lower	T4RB-43L	Probabilistic	--	10/12/2020	713008.8299	7620365.4996	11	X	X				X			
	44	Upper	T4RB-44U-OD1	Judgmental	Outfall - Drainage Basin D	10/12/2020	712981.8126	7620274.2014	28	X	X				X			
			T4RB-44U	Archive	--	10/13/2020	712978.5198	7620192.6210	31									
		Lower	T4RB-44L	Probabilistic	--	10/12/2020	713010.0502	7620213.2863	12	X	X	X	X	X	X	X	X	X
	45	Upper	T4RB-45U-OD2	Judgmental	Outfall - Drainage Basin D	10/13/2020	712991.5957	7620104.6008	19	X	X				X			
			T4RB-45U-OD3	Judgmental	Outfall - Drainage Basin D	10/13/2020	712989.3998	7620064.5618	18	X	X				X			
			T4RB-45U	Archive	--	10/13/2020	712983.6224	7620041.7597	22									
		Lower	T4RB-45L	Probabilistic	--	10/12/2020	713012.6770	7620059.3923	13	X	X				X			
	46	Upper	T4RB-46U	Probabilistic	--	10/9/2020	712990.5316	7619896.9698	30	X	X	X	X	X	X	X	X	X
		Lower	T4RB-46L	Probabilistic	--	10/12/2020	713019.1722	7619911.8626	14	X	X				X			
	47	Upper	T4RB-47U	Probabilistic	--	10/9/2020	712992.5756	7619746.5286	25	X	X				X			
		Lower	T4RB-47L	Probabilistic	--	10/12/2020	713025.1362	7619755.4104	13	X	X				X			
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	Probabilistic	--	10/14/2020	712915.6055	7619784.4626	37	X	X							
		Lower	T4RB-48L	Probabilistic	--	10/14/2020	712913.0004	7619739.4233	13	X	X							
	49	Upper	T4RB-49U	Probabilistic	--	10/13/2020	712794.6979	7619864.2637	--	X	X							
		Lower	T4RB-49L	Probabilistic	--	10/13/2020	712785.9808	7619808.7123	13	X	X	X	X	X	X	X	X	X
	50	Upper	T4RB-50U	Probabilistic	--	10/14/2020	712652.6425	7619917.7802	38	X	X							
		Lower	T4RB-50L	Probabilistic	--	10/14/2020	712646.9358	7619874.9403	14	X	X							
	51	Upper	T4RB-51U	Probabilistic	--	10/14/2020	712566.9488	7619965.4119	36	X	X	X	X	X	X	X	X	X
		Lower	T4RB-51L	Probabilistic	--	10/14/2020	712559.436	7619914.585	11	X	X							
		Lower	T4RB-51L-OD4	Judgmental	Outfall - Drainage Basin D	10/14/2020	712520.014	7619914.571	--	X	X							

Sediment

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Type	Judgmental Sample Target	Sample Date	Coordinates		Mudline Elevation (ft amsl)	Sediment COIs						Additional Analyses		
							Northing	Easting		TPH	PAHs	PCBs	Pesticides	Dioxins/ Furans	Metals	VOCs	Butyltins	BEHP
Former Berth 412	--	--	SG04	Judgmental	Sediment	10/15/2020	713072.13	7619832.56	-10.86		X	X		X				
	--	--	SG05	Judgmental	Sediment	10/15/2020	713062.20	7619991.61	-7.94		X	X		X				
	--	--	SG06	Judgmental	Sediment	10/16/2020	713054.46	7620136.08	-9.01		X	X		X				
	--	--	SG07	Judgmental	Sediment	10/16/2020	713046.50	7620289.70	-7.40		X	X		X				
Berth 408	18	Lower	T4RB-18L-OM	Judgmental	Outfall - Drainage Basin M	10/16/2020	714379.6971	7620377.7477	-5.07		X	X		X				

Notes:
1. TPH = Total petroleum hydrocarbons.
2. PAHs = Polycyclic aromatic hydrocarbons.
3. PCBs = Polychlorinated biphenyls.
4. VOCs = Volatile organic compounds.
5. COIs = Contaminants of interest.
6. BEHP = Bis(2-ethylhexyl)phthalate.
7. Sediment samples were also analyzed for physical characteristics of grain size, total solids and total organic carbon.
8. Sample elevations were estimated from the survey topographic map to the nearest foot (NAV88). Values not included for sample points outside of the survey boundary.

Table 2
Riverbank Soil Analytical Results - Total Petroleum Hydrocarbons
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Diesel	Oil
					Concentrations in mg/kg	
				CUL	91	--
				RAL	--	--
				PTW	--	--
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	169 J	412 J
		Upper	T4RB-1U	9/29/2020	Archived	
		Lower	T4RB-1L	9/29/2020	12.2 U	135
	2	Upper	T4RB-2U	9/30/2020	10.3 U	20.5 U
		Lower	T4RB-2L	9/30/2020	13.1 U	51.4 J
	3	Upper	T4RB-3U	9/30/2020	10.7 U	21.4 U
		Upper	DUP-2 T4RB-3U	9/30/2020	10.3 U	20.5 U
		Upper	T4RB-3U *	9/30/2020	10.3 U	20.5 U
		Lower	T4RB-3L	9/30/2020	11.6 U	23.2 U
	4	Upper	T4RB-4U-OR	9/30/2020	10.2 U	20.3 U
		Upper	T4RB-4U	9/30/2020	Archived	
		Lower	T4RB-4L	9/30/2020	12.7 U	49.8 J
	5	Upper	T4RB-5U	9/30/2020	11.0 U	182
		Lower	T4RB-5L	9/30/2020	11.0 U	126 J+
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	10.5 U	20.9 U
		Lower	T4RB-6L	--	Not Sampled	
	7	Upper	T4RB-7U	10/1/2020	10.2 U	20.4 U
		Lower	T4RB-7L	10/1/2020	12.3 U	124
	8	Upper	T4RB-8U	10/1/2020	10.1 U	72.9 J+
		Lower	T4RB-8L	10/1/2020	12.5 U	173
	9	Upper	T4RB-9U	10/1/2020	10.7 U	51.2 J+
		Lower	T4RB-9L	10/2/2020	11.3 U	45.4 J
		Lower	DUP-3 T4RB-9L	10/2/2020	11.3 U	39.7 J
		Lower	T4RB-9L *	10/2/2020	11.3 U	42.6 J
	10	Upper	T4RB-10U	10/2/2020	10.4 U	150
		Lower	T4RB-10L	10/2/2020	10.4 U	28.7 J
	11	Upper	T4RB-11U	10/2/2020	10.4 U	68.2
		Lower	T4RB-11L	10/2/2020	10.0 U	200
Berth 405	12	Upper	T4RB-12U	--	Not Sampled	
		Lower	T4RB-12L	--	Not Sampled	
	13	Upper	T4RB-13U	--	Not Sampled	
		Lower	T4RB-13L	--	Not Sampled	
	14	Upper	T4RB-14U	--	Not Sampled	
		Lower	T4RB-14L	--	Not Sampled	
	15	Upper	T4RB-15U	--	Not Sampled	
		Lower	T4RB-15L	--	Not Sampled	
		Lower	T4RB-15L-OQ	--	Not Sampled	

Please see notes at end of table.

Table 2
Riverbank Soil Analytical Results - Total Petroleum Hydrocarbons
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Diesel	Oil
					Concentrations in mg/kg	
				CUL	91	--
				RAL	--	--
				PTW	--	--
Berth 409	16	Upper	T4RB-16U	10/7/2020	15.1 J	86.6 J
		Lower	T4RB-16L	10/7/2020	Archived	
		Lower	T4RB-16L-O52C	10/7/2020	13.7 U	88.1
		Lower	T4RB-16L-OO	10/7/2020	12.7 U	26.3 J
	17	Upper	T4RB-17U	10/8/2020	*287* UJ	1,770 J
		Lower	T4RB-17L	10/8/2020	Archived	
		Lower	T4RB-17L-ON	10/8/2020	42.5 U	917
Berth 408	18	Upper	T4RB-18U	10/5/2020	11.2 U	318
		Lower	T4RB-18L	10/5/2020	Archived	
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment	
	19	Upper	T4RB-19U	10/5/2020	93.5 J	236 J
		Lower	T4RB-19L	10/5/2020	10.3 U	41.8 J
	20	Upper	T4RB-20U	10/5/2020	16.9 J	77.9
		Lower	T4RB-20L	10/6/2020	10.4 U	20.9 U
	21	Upper	T4RB-21U	10/6/2020	12.3 J	109
		Lower	T4RB-21L	10/6/2020	10.2 U	95.5 J
		Lower	DUP-4 T4RB-21L	10/6/2020	10.6 U	269 J
		Lower	T4RB-21L *	10/6/2020	10.2 U	182 J
	22	Upper	T4RB-22U	10/6/2020	9.79 U	173
		Lower	T4RB-22L	10/6/2020	10.2 U	20.4 J
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	10.6 U	55.4
		Lower	T4RB-23L	9/28/2020	10.2 U	23.3 J
	24	Upper	T4RB-24U	9/28/2020	10.1 U	20.1 U
		Lower	T4RB-24L	9/28/2020	11.7 U	23.5 U
	25	Upper	T4RB-25U	9/28/2020	9.77 U	19.5 U
		Lower	T4RB-25L	9/28/2020	11.5 U	22.9 U
		Lower	DUP-1 T4RB-25L	9/28/2020	12.4 U	24.8 U
		Lower	T4RB-25L *	9/28/2020	11.5 U	22.9 U
	26	Upper	T4RB-26U	9/28/2020	10.1 U	20.2 U
		Lower	T4RB-26L	9/28/2020	11.0 U	22.1 U
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	49.2 J	226 J
		Lower	T4RB-27L	9/28/2020	11.9 U	195
	28	Upper	T4RB-28U	9/29/2020	12.2 U	385 J
		Lower	T4RB-28L	9/29/2020	10.7 U	135
	29	Upper	T4RB-29U	9/29/2020	22.0 U	242
		Lower	T4RB-29L	9/29/2020	11.1 U	25.4 J
Head of Slip 3	40	--	T4RB-K1	10/8/2020	*285* UJ	8,440 J
		--	T4RB-K2	10/8/2020	11.9 U	220 J
		--	T4RB-BEBRA	10/8/2020	10.8 U	662 J
	41	--	T4RB-OJ	10/9/2020	24.3 J	277 J

Please see notes at end of table.

Table 2
Riverbank Soil Analytical Results - Total Petroleum Hydrocarbons
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Diesel	Oil
					Concentrations in mg/kg	
				CUL	91	--
				RAL	--	--
				PTW	--	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	*101* U	774 J+
		Lower	T4RB-43L	10/12/2020	149 J	80.9 J
	44	Upper	T4RB-44U-OD1	10/12/2020	9.85 U	78.3 J+
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	10.4 U	71.0 J+
		Upper	T4RB-44U-OD1 *	10/12/2020	9.85 U	74.7 J+
		Upper	T4RB-44U	10/13/2020	Archived	
		Lower	T4RB-44L	10/12/2020	13.0 U	84.1
	45	Upper	T4RB-45U-OD2	10/13/2020	10.5 U	66.9 J+
		Upper	T4RB-45U-OD3	10/13/2020	15.2 J	47.0 J
		Upper	T4RB-45U	10/13/2020	Archived	
		Lower	T4RB-45L	10/12/2020	11.0 U	22.0 U
	46	Upper	T4RB-46U	10/9/2020	90.7 J	268 J
		Lower	T4RB-46L	10/12/2020	10.7 U	85.2
	47	Upper	T4RB-47U	10/9/2020	9.90 U	19.8 U
		Lower	T4RB-47L	10/12/2020	10.8 U	27.6 J
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	*199* UJ	880 J
		Lower	T4RB-48L	10/14/2020	10.5 U	219
	49	Upper	T4RB-49U	10/13/2020	10.8 U	329 J+
		Lower	T4RB-49L	10/13/2020	11.0 U	24.7 J
	50	Upper	T4RB-50U	10/14/2020	10.9 U	45.0 J
		Lower	T4RB-50L	10/14/2020	11.1 U	22.1 U
	51	Upper	T4RB-51U	10/14/2020	10.2 U	96.0 J+
		Lower	T4RB-51L	10/14/2020	10.5 U	21.0 U
		Lower	T4RB-51L-OD4	10/14/2020	10.8 U	126 J+

Notes:

1. mg/kg = Milligrams per kilogram (parts per million).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site Record of Decision (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Italicized values represent a method detection limit that is above one or more applicable screening levels.
7. -- = Value not available.
8. DUP = Field duplicate.
9. U = Analyte was not detected.
10. J = Result is estimated.
11. UJ = The analyte was analyzed for but was not detected. However, the detection limit may be inaccurate or imprecise.
12. J+ = Result is an estimated value and may be biased high.
13. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 3
Riverbank Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methyl naphthalene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	cPAHs (BaP Eq)
Concentrations in µg/kg																							
				CUL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23,000	774
				RAL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30,000	--
				PTW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	774,000
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-1U	9/29/2020	Archived																		
		Lower	T4RB-1L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2	Upper	T4RB-2U	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-2L	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3	Upper	T4RB-3U	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	DUP-2 T4RB-3U	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-3L	9/30/2020	1.56 U	1.57 J	4.27	2.27 J	3.22 J	4.33 J	2.44 J	2.54 J	3.26	1.56 U	2.70 J	1.56 U	1.65 J	3.12 U	3.12 U	1.96 J	4.29	36.8	4.85
	4	Upper	T4RB-4U-OR	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-4U	9/30/2020	Archived																		
		Lower	T4RB-4L	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	Upper	T4RB-5U	9/30/2020	29.3 U	29.3 U	29.3 U	41.3 J	74.5 J	105	49.2 J	56.2 J	63.7	29.3 U	56.6 J	29.3 U	40.1 J	58.9 U	58.9 U	29.3 U	62.0	593	108
		Lower	T4RB-5L	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-6L	--	Not Sampled																		
	7	Upper	T4RB-7U	10/1/2020	5.61 U	5.61 U	5.61 U	5.61 U	8.44 U	8.44 U	8.44 U	5.61 U	5.61 U	5.61 U	5.61 U	5.61 U	5.61 U	11.3 U	11.3 U	5.61 U	5.61 U	11.3 U	8.44 U
		Lower	T4RB-7L	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	Upper	T4RB-8U	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-8L	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9	Upper	T4RB-9U	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-9L	10/2/2020	15.7 U	15.7 U	15.7 U	45.8	75.2	75.4	37.6 J	54.5	50.2	15.7 U	84.9	15.7 U	42.9	83.3	70.2	73.4	91.8	801	100
		Lower	DUP-3 T4RB-9L	10/2/2020	15.7 U	15.7 U	15.7 U	62.9	99.3	97.9	43.7 J	78.0	59.4	15.7 U	109	15.7 U	65.5	31.5 U	31.5 U	39.0	119	797	130
		Lower	T4RB-9L *	10/2/2020	15.7 U	15.7 U	15.7 U	54.4	87.3	86.7	40.7 J	66.3	54.8	15.7 U	97.0	15.7 U	54.2	83.3	70.2	56.2	105	872	115
	10	Upper	T4RB-10U	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-10L	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11	Upper	T4RB-11U	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-11L	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Berth 405	12	Upper	T4RB-12U	--	Not Sampled																		
		Lower	T4RB-12L	--	Not Sampled																		
	13	Upper	T4RB-13U	--	Not Sampled																		
		Lower	T4RB-13L	--	Not Sampled																		
	14	Upper	T4RB-14U	--	Not Sampled																		
		Lower	T4RB-14L	--	Not Sampled																		
	15	Upper	T4RB-15U	--	Not Sampled																		
		Lower	T4RB-15L	--	Not Sampled																		
		Lower	T4RB-15L-OQ	--	Not Sampled																		

Please see notes at end of table.

Table 3
Riverbank Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	cPAHs (BaP Eq)
Concentrations in µg/kg																							
				CUL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23,000	774
				RAL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30,000	--
				PTW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	774,000
Berth 409	16	Upper	T4RB-16U	10/7/2020	172	57.1 U	156	1,190	1,910	2,100	718 J	1,270	1,350	264	1,810	57.1 U	1,200	115 U	115 U	733	1,710	14,600	2,630
		Lower	T4RB-16L	10/7/2020	Archived																		
		Lower	T4RB-16L-O52C	10/7/2020	73.4 U	73.4 U	73.4 U	202	303	351	176 J	191	198	73.4 U	289	73.4 U	176	147 U	147 U	130 J	278	2,400	415
		Lower	T4RB-16L-OO	10/7/2020	6.88 U	6.88 U	6.88 U	9.83 J	14.9 J	17.1 J	10.9 J	6.88 U	9.21 J	6.88 U	21.1	6.88 U	6.88 U	13.8 U	13.8 U	13.4 J	18.8	126	21.2
	17	Upper	T4RB-17U	10/8/2020	1,900	191 U	1,970	14,100	21,900	25,100	8,920 J	14,400	16,300	3,010	19,000	720	14,000	383 U	383 U	8,890	18,500	169,000	30,300
		Lower	T4RB-17L	10/8/2020	739	195 U	676	4,790	7,710	8,420	3,300 J	5,200	5,350	946	7,420	239 J	5,120	391 U	391 U	3,190	7,020	60,300	10,500
		Lower	T4RB-17L-ON	10/8/2020	749	282 U	681	4,710	7,550	8,760	3,040 J	5,050	5,170	1,030	7,060	282 U	4,900	566 U	566 U	3,240	6,930	59,200	10,500
Berth 408	18	Upper	T4RB-18U	10/5/2020	59.2 U	100 J	78.5 J	199	389	400	167 J	354	238	59.2 U	334	59.2 U	303	119 U	119 U	143	461	3,260	511
		Lower	T4RB-18L	10/5/2020	Archived																		
		Lower	T4RB-18L-OM	10/16/2020	Sample as Sediment																		
	19	Upper	T4RB-19U	10/5/2020	53.1 U	53.1 U	62.1 J	147	173	337	154 J	86.8 J	263	53.1 U	311	53.1 U	82.2 J	107 U	107 U	346	307	2,350	258
		Lower	T4RB-19L	10/5/2020	13.5 U	13.5 U	13.5 U	56.7	76.7	113	49.9 J	78.6	62.0	13.5 U	91.7	13.5 U	67.5	27.1 U	27.1 U	50.3	92.9	760	108
	20	Upper	T4RB-20U	10/5/2020	35.7 U	30.7 U	28.8	100	83.3	152	60.9 J	73.0	173	14.4 J	514	35.0	68.5	275	94.5	547	298	2,540	131
		Lower	T4RB-20L	10/6/2020	1.39 U	3.15	1.39 U	9.64	17.5	16.9	7.34 J	15.1	12.0	1.80 J	10.0	1.39 U	12.2	2.79 U	3.70 J	1.84 J	16.3	129	23.3
	21	Upper	T4RB-21U	10/6/2020	56.3 U	67.1 U	184	454	416	524	209 J	242	505	51.3	1,240	81.6	238	176	78.9	958	1,130	6,520	591
		Lower	T4RB-21L	10/6/2020	14.0 U	14.0 U	14.0 U	23.2 J	41.4 J	50.0	23.4 J	38.7	26.3 J	14.0 U	34.8	14.0 U	29.9	28.1 U	28.1 U	33.0	37.9	360	59.0
		Lower	DUP-4 T4RB-21L	10/6/2020	6.83 U	7.18 J	10.9 J	27.5	42.6	49.4	23.2 J	43.4	31.9	6.83 U	49.6	6.83 U	34.8	13.7 U	13.7 U	25.8	55.6	412	57.4
		Lower	T4RB-21L *	10/6/2020	6.83 U	7.18 J	10.9 J	25.4 J	42.0 J	49.7	23.3 J	41.1	29.1 J	6.83 U	42.2	6.83 U	32.4	13.7 U	13.7 U	29.4	46.8	390	56.4
	22	Upper	T4RB-22U	10/6/2020	47.8 U	59.2 U	78.7	191	207	298	112 J	164	309	35.1	699	89.7	148	162	158	1,010	451	4,140	307
		Lower	T4RB-22L	10/6/2020	5.45 U	5.55 J	5.45 U	8.47 J	24.4	24.6	11.8 J	30.8	10.1 J	5.45 U	16.5	5.45 U	23.1	10.9 U	13.2 J	11.5	16.1	204	32.9
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	5.77 U	5.77 U	5.77 U	29.7 J	49.2 J	60.9 J	23.1 J	38.2 J	35.1 J	7.50 J	46.1 J	5.77 U	32.4 J	11.6 U	11.6 U	19.7	46.8 J	395	69.3
		Lower	T4RB-23L	9/28/2020	1.43 U	1.43 U	1.43 U	2.70 J	4.85	6.74	2.91 J	4.20	3.42	1.43 U	4.12	1.43 U	3.14	2.86 U	2.86 U	1.81 J	4.06	40.1	6.86
	24	Upper	T4RB-24U	9/28/2020	1.45 U	1.45 U	1.45 U	2.20 J	3.69 J	4.05 J	2.35 J	2.32 J	1.87 J	1.45 U	2.46 J	1.45 U	2.01 J	2.91 U	2.91 U	1.45 U	2.60 J	25.7	5.27
		Lower	T4RB-24L	9/28/2020	6.25 U	6.25 U	6.25 U	8.67 J	15.6 J	17.8 J	10.0 J	10.6 J	9.11 J	6.25 U	12.1 J	6.25 U	9.13 J	12.5 U	12.5 U	7.38 J	14.0	124	22.4
	25	Upper	T4RB-25U	9/28/2020	1.34 U	1.34 U	1.34 U	4.94	8.49	9.63	4.05 J	5.28	5.29	1.34 U	7.29	1.34 U	5.07	2.69 U	2.69 U	3.00	7.38	62.4	11.2
		Lower	T4RB-25L	9/28/2020	1.61 U	1.61 U	1.61 U	3.51	5.94	6.82	3.21 J	3.90	3.61	1.61 U	5.24	1.61 U	3.55	3.24 U	3.24 U	2.67 J	5.13	46.0	8.17
		Lower	DUP-1 T4RB-25L	9/28/2020	1.60 U	1.60 U	1.60 U	4.97	9.80	10.3	4.66 J	8.26	5.74	1.60 U	9.46	1.60 U	6.54	3.22 U	3.22 U	4.15	9.57	75.9	12.8
		Lower	T4RB-25L *	9/28/2020	1.60 U	1.60 U	1.60 U	4.24	7.87	8.56	3.94 J	6.08	4.68	1.60 U	7.35	1.60 U	5.05	3.22 U	3.22 U	3.41 J	7.35	60.9	10.5
	26	Upper	T4RB-26U	9/28/2020	1.43 U	1.43 U	1.70 J	16.4	27.9	31.4	11.9 J	18.5	19.1	3.36	26.1	1.43 U	17.3	2.88 U	2.88 U	9.58	25.9	211	37.9
		Lower	T4RB-26L	9/28/2020	1.48 U	2.23 J	10.3	61.8	65.6	73.1	26.6 J	32.2	56.5	6.66	91.8	1.65 J	31.8	2.97 U	3.89 J	11.9	90	568	89.3
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-27L	9/28/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	28	Upper	T4RB-28U	9/29/2020	66.5 U	66.5 U	66.5 U	236	387	472	194 J	226	255	66.5 U	346	66.5 U	219	133 U	133 U	143	316	2,890	515
		Lower	T4RB-28L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	29	Upper	T4RB-29U	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-29L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	6,020	475 U	5,750	40,600	61,600	69,400	25,100 J	39,700	45,300	8,510	58,400	2,640	37,600	953 U	1,360 J	25,600	57,100	485,000	85,200
		--	T4RB-K2	10/8/2020	229 J	158 U	233 J	1,660	2,700	3,210	1,140 J	1,730	2,020	385	2,760	158 U	1,690	317 U	317 U	1,200	2,630	21,700	3,750
		--	T4RB-BEBRA	10/8/2020	1,130	146 U	1,140	8,610	13,200	15,300	5,110 J	8,330	9,360	1,700	12,300	400	8,050	293 U	293 U	5,250	11,900	102,000	18,200
	41	--	T4RB-OJ	10/9/2020	145 U	145 U	145 U	522	940	1,230	448 J	654	646	145 U	814	145 U	654	290 U	290 U	272 J	806	7,200	1,260

Please see notes at end of table.

Table 3
Riverbank Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenanthrene	Pyrene	Total PAHs	cPAHs (BaP Eq)
Concentrations in µg/kg																							
				CUL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	23,000	774
				RAL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30,000	--
				PTW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	774,000
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	764 J	151 J	838 J	6,460 J	10,000 J	13,000 J	4,060 J	7,210 J	8,130 J	1,480 J	10,500 J	334 J	7,020 J	187 J	423 J	4,840 J	9,470 J	84,900 J	14,200 J
		Lower	T4RB-43L	10/12/2020	33.3 U	34.1 J	34.0 J	68.5	176	160	84.6 J	188	74.6	33.3 U	91.9	72.2	146	71.7 J	280	136	107	1,760	231
	44	Upper	T4RB-44U-OD1	10/12/2020	33.9	45.7	80.4	477	722	898	327 J	625	651	97.3	903	18.8 J	553	41.2 J	150	332	1,060	7,020	1,020
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	46.7	49.8	96.2	608	857	1,190	372 J	767	816	127	1,180	27.2 J	680	60.2	219	433	1,280	8,810	1,240
		Upper	T4RB-44U-OD1 *	10/12/2020	40.3	47.8	88.3	543	790	1,044	350 J	696	734	112	1,042	23.0 J	617	50.7	185	383	1,170	7,910	1,130
		Upper	T4RB-44U	10/13/2020	Archived																		
		Lower	T4RB-44L	10/12/2020	7.11 U	14.3 U	13.5 J	58.7	79.7	86.5	36.4 J	66.9	74.4	8.76 J	139	7.11 U	55.1	14.3 U	49.6	69.4	179	924	109
	45	Upper	T4RB-45U-OD2	10/13/2020	58.1 U	58.1 U	58.1 U	296	478	553	224 J	332	370	62.3 J	563	58.1 U	309	117 U	117 U	214	739	4,200	659
		Upper	T4RB-45U-OD3	10/13/2020	13.7 U	36.7	42.9	321	361	502	150 J	350	383	41.0	668	13.7 U	318	27.5 U	111	132	939	4,370	518
		Upper	T4RB-45U	10/13/2020	Archived																		
		Lower	T4RB-45L	10/12/2020	59.8 U	59.8 U	59.8 U	165	254	244	136 J	177	198	59.8 U	327	59.8 U	166	120 U	120 U	93.6 J	457	2,310	343
	46	Upper	T4RB-46U	10/9/2020	1.42 U	1.54 J	1.42 U	5.91	13.0	12.3	4.70 J	14.0	7.37	1.42 U	10.8	1.42 U	9.68	2.84 U	2.84 U	5.03	14.8	101	16.6
		Lower	T4RB-46L	10/12/2020	59.9 U	59.9 U	59.9 U	203	318	316	135 J	239	239	59.9 U	405	59.9 U	223	120 U	120 U	100 J	591	2,860	424
	47	Upper	T4RB-47U	10/9/2020	1.43 U	1.43 U	1.43 U	9.11	15.7	19.3	7.81 J	10.8	11.1	1.96 J	15.6	1.43 U	10.3	2.87 U	2.87 U	5.70	17.2	126	21.6
		Lower	T4RB-47L	10/12/2020	60.6 U	60.6 U	60.6 U	182	200	187	106 J	114 J	207	60.6 U	295	60.6 U	111 J	122 U	122 U	173	377	2,040	280
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	1,420 UJ	1,420 UJ	1,420 UJ	5,920 J	10,000 J	13,300 J	4,970 J	8,360 J	7,630 J	1,420 UJ	9,330 J	1,420 UJ	7,450 J	2,850 UJ	2,850 UJ	3,590 J	10,500 J	83,200 J	13,400 J
		Lower	T4RB-48L	10/14/2020	14.6 U	14.6 U	14.6 U	24.7 J	45.8	54.9	27.1 J	33.3	32.3	14.6 U	35.0	14.6 U	22.9 J	29.3 U	29.3 U	20.9 J	39.8	359	63.7
	49	Upper	T4RB-49U	10/13/2020	152 U	152 U	171 J	1,340	1,780	2,390	862 J	1,330	1,670	267 J	2,300	152 U	1,270	306 U	306 U	1,090	2,030	16,700	2,560
		Lower	T4RB-49L	10/13/2020	6.09 U	6.09 U	6.19 J	19.6	31.8	27.2	14.1 J	26.3	23.3	6.09 U	30.6	6.09 U	19.8	12.2 U	12.2 U	14.1	43.5	266	41.7
	50	Upper	T4RB-50U	10/14/2020	5.68 U	5.68 U	5.68 U	9.35 J	15.3 J	19.8	9.93 J	8.16 J	10.4 J	5.68 U	14.2	5.68 U	8.13 J	11.4 U	11.4 U	6.75 J	12.4	123	22.0
		Lower	T4RB-50L	10/14/2020	14.5 U	14.5 U	15.4 J	108	122	109	48.2 J	65.6	125	14.5 U	138	14.5 U	62.9	29.1 U	29.1 U	58.1	198	1,070	158
	51	Upper	T4RB-51U	10/14/2020	5.79 U	5.79 U	5.79 U	11.8	20.7	22.1	13.1 J	13.3	11.9	5.79 U	16.3	5.79 U	11.2 J	11.6 U	11.6 U	7.09 J	16.4	153	28.2
		Lower	T4RB-51L	10/14/2020	1.45 U	1.45 U	1.45 U	1.81 J	2.41 J	2.63 J	2.18 U	1.45 U	1.60 J	1.45 U	2.64 J	1.45 U	1.45 U	2.91 U	2.91 U	3.52	3.10	20.3	3.58
		Lower	T4RB-51L-OD4	10/14/2020	8.96 U	8.96 U	13.1 J	76.5	151	183	71.5 J	119	108	20.8	137	8.96 U	110	18.0 U	18.0 U	51.7	138	1,190	210

Notes:

1. µg/kg = Micrograms per kilogram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site Explanation of Significant Differences (ESD, 2019).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site Explanation of Significant Differences (ESD, 2019).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Shaded values exceed Portland Harbor ROD Explanation of Significant Differences Remedial Action Level (ESD RAL).
7. -- = Value not available or sample was not analyzed for PAHs per sampling program.
8. DUP = Field duplicate.
9. U = Analyte was not detected.
10. J = Result is estimated.
11. UJ = The analyte was analyzed for but was not detected. However, the detection limit may be inaccurate or imprecise.
12. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 4a
Riverbank Soil Analytical Results - PCB Aroclors
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	PCB Aroclors (µg/kg)									Total PCBs
					1016	1221	1232	1242	1248	1254	1260	1262	1268	
				CUL	--	--	--	--	--	--	--	--	--	9
				RAL	--	--	--	--	--	--	--	--	--	75
				PTW	--	--	--	--	--	--	--	--	--	200
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	2.27 U	2.27 U	2.27 U	2.27 U	2.27 U	203 J	175 J	2.27 U	2.27 U	379 J
		Upper	T4RB-1U	9/29/2020	Archived									
		Lower	T4RB-1L	9/29/2020	2.56 U	2.56 U	2.56 U	2.56 U	2.56 U	62.3 J	15.7 J	2.56 U	2.56 U	79.3 J
	2	Upper	T4RB-2U	9/30/2020	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U
		Lower	T4RB-2L	9/30/2020	2.68 U	2.68 U	2.68 U	2.68 U	2.68 U	19.2 J	23.4 J	2.68 U	2.68 U	43.9 J
	3	Upper	T4RB-3U	9/30/2020	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U
		Upper	DUP-2 T4RB-3U	9/30/2020	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U	2.15 U
		Upper	T4RB-3U *	9/30/2020	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U
		Lower	T4RB-3L	9/30/2020	2.36 U	2.36 U	2.36 U	2.36 U	2.36 U	2.36 U	2.36 U	2.36 U	2.36 U	2.36 U
	4	Upper	T4RB-4U-OR	9/30/2020	2.04 U	2.04 U	4.09 U	2.04 U	2.04 U	2.04 U	2.04 U	2.04 U	2.04 U	4.09 U
		Upper	T4RB-4U	9/30/2020	Archived									
		Lower	T4RB-4L	9/30/2020	2.51 U	2.51 U	2.51 U	2.51 U	2.51 U	2.51 U	2.51 U	2.51 U	2.51 U	2.51 U
	5	Upper	T4RB-5U	9/30/2020	4.40 U	2.20 U	5.17 U	6.05 U	6.16 U	34.5 U	10.4 JN	2.20 U	2.20 U	27.7 J
		Lower	T4RB-5L	9/30/2020	2.17 U	2.17 U	2.17 U	2.17 U	2.17 U	7.21 J	7.60 J	2.17 U	2.17 U	15.9 J
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-6L	--	Not Sampled									
	7	Upper	T4RB-7U	10/1/2020	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U
		Lower	T4RB-7L	10/1/2020	--	--	--	--	--	--	--	--	--	--
	8	Upper	T4RB-8U	10/1/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-8L	10/1/2020	--	--	--	--	--	--	--	--	--	--
	9	Upper	T4RB-9U	10/1/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-9L	10/2/2020	2.38 U	2.38 U	2.38 U	2.38 U	2.38 U	2.38 U	2.38 U	2.38 U	2.38 U	2.38 U
		Lower	DUP-3 T4RB-9L	10/2/2020	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U
		Lower	T4RB-9L *	10/2/2020	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U	2.30 U
	10	Upper	T4RB-10U	10/2/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-10L	10/2/2020	--	--	--	--	--	--	--	--	--	--
	11	Upper	T4RB-11U	10/2/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-11L	10/2/2020	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table 4a
Riverbank Soil Analytical Results - PCB Aroclors
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	PCB Aroclors (µg/kg)									Total PCBs
					1016	1221	1232	1242	1248	1254	1260	1262	1268	
				CUL	--	--	--	--	--	--	--	--	--	9
				RAL	--	--	--	--	--	--	--	--	--	75
				PTW	--	--	--	--	--	--	--	--	--	200
Berth 405	12	Upper	T4RB-12U	--	Not Sampled									
		Lower	T4RB-12L	--	Not Sampled									
	13	Upper	T4RB-13U	--	Not Sampled									
		Lower	T4RB-13L	--	Not Sampled									
	14	Upper	T4RB-14U	--	Not Sampled									
		Lower	T4RB-14L	--	Not Sampled									
	15	Upper	T4RB-15U	--	Not Sampled									
		Lower	T4RB-15L	--	Not Sampled									
		Lower	T4RB-15L-OQ	--	Not Sampled									
Berth 409	16	Upper	T4RB-16U	10/7/2020	4.27 U	9.18 U	5.87 U	4.27 U	4.27 U	15.4 J	6.24 J	2.13 U	2.13 U	26.2 J
		Lower	T4RB-16L	10/7/2020	Archived									
		Lower	T4RB-16L-O52C	10/7/2020	2.76 U	5.52 U	5.52 U	2.76 U	2.76 U	11.5 J	3.99 J	2.76 U	2.76 U	18.3 J
		Lower	T4RB-16L-OO	10/7/2020	2.54 U	5.07 U	5.07 U	2.54 U	2.54 U	2.54 U	2.54 U	2.54 U	2.54 U	5.07 U
	17	Upper	T4RB-17U	10/8/2020	2.81 U	2.81 U	2.81 U	11.5 J+	2.81 U	68.5 J	101 J	2.81 U	2.81 U	182 J
		Lower	T4RB-17L	10/8/2020	Archived									
		Lower	T4RB-17L-ON	10/8/2020	16.6 U	16.6 U	16.6 U	16.6 U	8.31 U	109 J	106 J	8.31 U	8.31 U	223 J
Berth 408	18	Upper	T4RB-18U	10/5/2020	2.14 U	2.14 U	2.14 U	2.14 U	2.14 U	62.2 J	51.2 J	2.14 U	2.14 U	114 J
		Lower	T4RB-18L	10/5/2020	Archived									
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment									
	19	Upper	T4RB-19U	10/5/2020	1.92 U	1.92 U	1.92 U	1.92 U	1.92 U	49.9 J	26.9 J	1.92 U	7.31 U	80.5 J
		Lower	T4RB-19L	10/5/2020	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	9.36 J	7.58 J	2.02 U	2.02 U	18.0 J
	20	Upper	T4RB-20U	10/5/2020	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	10.9 J	29.6 J	2.00 U	5.49 U	43.2 J
		Lower	T4RB-20L	10/6/2020	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U	2.12 U
	21	Upper	T4RB-21U	10/6/2020	2.04 U	2.04 U	2.04 U	2.04 U	2.04 U	7.99 J	15.7 J	2.04 U	4.09 U	25.7 J
		Lower	T4RB-21L	10/6/2020	2.09 U	2.09 U	2.09 U	2.09 U	2.09 U	6.06 U	11.0	2.09 U	4.18 U	14.0
		Lower	DUP-4 T4RB-21L	10/6/2020	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	6.17 U	13.5	2.02 U	4.05 U	16.6
		Lower	T4RB-21L *	10/6/2020	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	6.06 U	12.3	2.02 U	4.05 U	15.3
	22	Upper	T4RB-22U	10/6/2020	1.92 U	1.92 U	1.92 U	1.92 U	1.92 U	25.3 J	35.7 J	1.92 U	5.17 U	63.6 J
		Lower	T4RB-22L	10/6/2020	2.02 U	14.5 U	4.04 U	2.02 U	2.02 U	2.02 U	6.93 JN	2.02 U	4.04 U	14.2 J

Please see notes at end of table.

Table 4a
Riverbank Soil Analytical Results - PCB Aroclors
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	PCB Aroclors (µg/kg)									Total PCBs
					1016	1221	1232	1242	1248	1254	1260	1262	1268	
				CUL	--	--	--	--	--	--	--	--	--	9
				RAL	--	--	--	--	--	--	--	--	--	75
				PTW	--	--	--	--	--	--	--	--	--	200
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	2.12 U	4.24 U	2.12 U	2.12 U	2.12 U	2.12 U	3.40 J	2.12 U	2.12 U	5.52 J
		Lower	T4RB-23L	9/28/2020	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.08 U	2.27 J	2.08 U	2.08 U	3.31 J
	24	Upper	T4RB-24U	9/28/2020	2.18 U	4.36 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	4.36 U
		Lower	T4RB-24L	9/28/2020	2.29 U	4.58 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	2.29 U	4.58 U
	25	Upper	T4RB-25U	9/28/2020	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U	2.02 U
		Lower	T4RB-25L	9/28/2020	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U
		Lower	DUP-1 T4RB-25L	9/28/2020	2.45 U	2.45 U	2.45 U	2.45 U	2.45 U	2.45 U	2.45 U	2.45 U	2.45 U	2.45 U
		Lower	T4RB-25L *	9/28/2020	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U
	26	Upper	T4RB-26U	9/28/2020	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U
		Lower	T4RB-26L	9/28/2020	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U	2.19 U
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-27L	9/28/2020	--	--	--	--	--	--	--	--	--	--
	28	Upper	T4RB-28U	9/29/2020	2.57 U	2.57 U	5.14 U	2.57 U	5.14 U	5.52 U	5.14 U	2.57 U	2.57 U	5.52 U
		Lower	T4RB-28L	9/29/2020	--	--	--	--	--	--	--	--	--	--
	29	Upper	T4RB-29U	9/29/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-29L	9/29/2020	--	--	--	--	--	--	--	--	--	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	28.4 U	28.4 U	28.4 U	28.4 U	28.4 U	28.4 U	1,190	28.4 U	28.4 U	1,204
		--	T4RB-K2	10/8/2020	2.40 U	2.40 U	2.40 U	2.40 U	2.40 U	2.40 U	27.5	2.40 U	2.40 U	28.7
		--	T4RB-BEBRA	10/8/2020	2.16 U	2.16 U	2.16 U	2.16 U	2.16 U	36.7 J	49.9 J	2.16 U	2.16 U	87.7 J
	41	--	T4RB-OJ	10/9/2020	4.42 U	4.42 U	4.42 U	4.42 U	2.21 U	7.36 J	8.15 J	2.21 U	2.21 U	17.7 J
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-43L	10/12/2020	--	--	--	--	--	--	--	--	--	--
	44	Upper	T4RB-44U-OD1	10/12/2020	--	--	--	--	--	--	--	--	--	--
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-44U	10/13/2020	Archived									
		Lower	T4RB-44L	10/12/2020	2.64 U	2.64 U	5.29 U	2.64 U	2.64 U	2.64 U	2.64 U	2.64 U	2.64 U	5.29 U
	45	Upper	T4RB-45U-OD2	10/13/2020	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-45U-OD3	10/13/2020	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-45U	10/13/2020	Archived									
		Lower	T4RB-45L	10/12/2020	--	--	--	--	--	--	--	--	--	--
	46	Upper	T4RB-46U	10/9/2020	2.03 U	2.03 U	4.06 U	4.06 U	4.06 U	13.4 U	7.92 U	5.99 U	4.16 U	*13.4* U
		Lower	T4RB-46L	10/12/2020	--	--	--	--	--	--	--	--	--	--
	47	Upper	T4RB-47U	10/9/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-47L	10/12/2020	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table 4a
Riverbank Soil Analytical Results - PCB Aroclors
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	PCB Aroclors (µg/kg)									Total PCBs
					1016	1221	1232	1242	1248	1254	1260	1262	1268	
				CUL	--	--	--	--	--	--	--	--	--	9
				RAL	--	--	--	--	--	--	--	--	--	75
				PTW	--	--	--	--	--	--	--	--	--	200
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-48L	10/14/2020	--	--	--	--	--	--	--	--	--	--
	49	Upper	T4RB-49U	10/13/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-49L	10/13/2020	2.28 U	2.28 U	4.56 U	2.28 U	2.28 U	2.28 U	2.28 U	2.28 U	2.28 U	4.56 U
	50	Upper	T4RB-50U	10/14/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-50L	10/14/2020	--	--	--	--	--	--	--	--	--	--
	51	Upper	T4RB-51U	10/14/2020	2.14 U	2.14 U	5.01 U	4.29 U	2.14 U	4.29 U	5.67	2.14 U	4.29 U	8.18
		Lower	T4RB-51L	10/14/2020	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-51L-OD4	10/14/2020	--	--	--	--	--	--	--	--	--	--

Notes:

1. µg/kg = Micrograms per kilogram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Shaded values exceed Portland Harbor ROD Remedial Action Level (ROD RAL).
7. Italicized values represent a method detection limit that is above one or more applicable screening levels.
8. -- = Value not available or sample was not analyzed for PCB Aroclors per sampling program.
9. DUP = Field duplicate.
10. U = Analyte was not detected.
11. J = Result is estimated.
12. JN = The analyte was tentatively identified and did not meet method criteria for confirmation.
13. J+ = Result is an estimated value and may be biased high.
14. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 4b
Riverbank Soil Analytical Results - PCB Congeners
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Berth 401		Berth 409	CUL	RAL	PTW
Riverbank Cell	1		17			
Unit	Upper	Lower	Lower			
Sample Name	T4RB-1U	T4RB-1L	T4RB-17L			
Sample Date	9/29/2020	9/29/2020	10/8/2020			
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)						
2-MonoCB-(1)	0.00825 J	0.00645	0.0326	--	--	--
3-MonoCB-(2)	0.00343 J	0.00093 J	0.0131	--	--	--
4-MonoCB-(3)	0.00873 J	0.00334 J	0.0273	--	--	--
22'-DiCB-(4)	0.0321	0.0619	0.168	--	--	--
2,3-DiCB-(5)	0.00065 U	0.0014 JN	0.0003 U	--	--	--
2,3'-DiCB-(6)	0.0197	0.0236	0.0939	--	--	--
2,4-DiCB-(7)	0.00286 J	0.00281	0.0148	--	--	--
2,4'-DiCB-(8)	0.0848	0.0416	0.396	--	--	--
2,5-DiCB-(9)	0.00471 J	0.0059	0.0238	--	--	--
2,6-DiCB-(10)	0.0025 U	0.00485	0.006 JN	--	--	--
3,3'-DiCB-(11)	0.0293 J	0.014	0.134	--	--	--
DiCB-(12)+(13)	0.0134 J	0.00888	0.0534	--	--	--
3,5-DiCB-(14)	0.0007 U	0.00022 U	0.00029 U	--	--	--
4,4'-DiCB-(15)	0.167	0.339	0.419	--	--	--
22'3-TriCB-(16)	0.0681	0.339	0.23	--	--	--
22'4-TriCB-(17)	0.0537	0.308	0.185	--	--	--
TriCB-(18)+(30)	0.122	0.669	0.365	--	--	--
22'6-TriCB-(19)	0.025	0.263	0.0484	--	--	--
TriCB-(20) + (28)	0.211	0.921	0.817	--	--	--
TriCB-(21)+(33)	0.122	0.174	0.4	--	--	--
234'-TriCB-(22)	0.0775	0.131	0.299	--	--	--
235-TriCB-(23)	0.0011 U	0.00049 U	0.00037 U	--	--	--
236-TriCB-(24)	0.00095 U	0.00027 U	0.00296	--	--	--
23'4-TriCB-(25)	0.0184	0.039 JN	0.0538	--	--	--
TriCB-(26)+(29)	0.0335	0.0843	0.125	--	--	--
23'6-TriCB-(27)	0.0099 J	0.118	0.0278	--	--	--
24'5-TriCB-(31)	0.189	0.778	0.646	--	--	--
24'6-TriCB-(32)	0.037	0.484	0.11	--	--	--
23'5'-TriCB-(34)	0.0013 U	0.00191	0.00174 J	--	--	--
33'4-TriCB-(35)	0.0072 J	0.00762	0.0195	--	--	--
33'5-TriCB-(36)	0.0011 U	0.00041 U	0.00029 U	--	--	--
344'-TriCB-(37)	0.205	0.428	0.487	--	--	--
345-TriCB-(38)	0.0012 U	0.00117 J	0.00033 U	--	--	--
34'5-TriCB-(39)	0.0017 J	0.0111	0.002 JN	--	--	--
TetraCB-(40)+(41)+(71)	0.315	2.47	0.31	--	--	--
22'34'-TetraCB-(42)	0.182	1.41	0.164	--	--	--

Please see notes at end of table.

Table 4b
Riverbank Soil Analytical Results - PCB Congeners
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Berth 401		Berth 409	CUL	RAL	PTW
Riverbank Cell	1		17			
Unit	Upper	Lower	Lower			
Sample Name	T4RB-1U	T4RB-1L	T4RB-17L			
Sample Date	9/29/2020	9/29/2020	10/8/2020			
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)						
22'35-TetraCB-(43)	0.0095 J	0.183	0.0226	--	--	--
TetraCB-(44)+(47)+(65)	0.757	4.96	0.74	--	--	--
TetraCB-(45)+(51)	0.165	0.887	0.0974	--	--	--
22'36'-TetraCB-(46)	0.0452	0.311	0.0345	--	--	--
22'45-TetraCB-(48)	0.0548	0.736	0.0995	--	--	--
TetraCB-(49)+TetraCB-(69)	0.526	3.3	0.431	--	--	--
TetraCB-(50)+(53)	0.158	0.803	0.0772	--	--	--
22'55'-TetraCB-(52)	1.26	7.02	1.26	--	--	--
22'66'-TetraCB-(54)	0.00231 J	0.0115	0.00028 U	--	--	--
233'4-TetraCB-(55)	0.0017 U	0.0014 U	0.00068 U	--	--	--
233'4'-Tetra CB(56)	0.144	1.39	0.258	--	--	--
233'5-TetraCB-(57)	0.0016 U	0.0015 U	0.00163 J	--	--	--
233'5'-TetraCB-(58)	0.0016 U	0.0015 U	0.00069 U	--	--	--
TetraCB-(59)+(62)+(75)	0.0559	0.259	0.0583	--	--	--
2344'-TetraCB -(60)	0.0511	0.285	0.158	--	--	--
TetraCB-(61)+(70)+(74)+(76)	0.701	4.71	1.37	--	--	--
234'5-TetraCB-(63)	0.0111 J	0.0428	0.0238	--	--	--
234'6-TetraCB-(64)	0.355	1.78	0.469	--	--	--
23'44'-TetraCB-(66)	0.323	3.68	0.656	--	--	--
23'45-TetraCB-(67)	0.0097 J	0.0264	0.0176	--	--	--
23'45'-TetraCB-(68)	0.0054 J	0.0117	0.00286 J	--	--	--
23'55'-TetraCB-(72)	0.0077 J	0.0227	0.00433 J	--	--	--
23'5'6-TetraCB-(73)	0.0039 J	0.0133	0.00062 U	--	--	--
33'44'-TetraCB-(77)	0.0857	0.332	0.188	--	--	--
33'45-TetraCB-(78)	0.0019 U	0.0015 U	0.00065 U	--	--	--
33'45'-TetraCB(79)	0.0234 J	0.0338	0.0115	--	--	--
33'55'-TetraCB-(80)	0.0015 U	0.0013 U	0.00058 U	--	--	--
344'5-TetraCB-(81)	0.005 J	0.0049	0.00818	--	--	--
22'33'4-PentaCB-(82)	0.633	0.807	0.262	--	--	--
PentaCB-(83)+(99)	2.87	3.61	1.34	--	--	--
22'33'6-PentaCB-(84)	1.25	1.71	0.619	--	--	--
PentaCB-(85)+(116)+(117)	0.638	0.987	0.4	--	--	--
PentaCB-(86)(87)(97)(109)(119)(125)	2.6	4.55	1.46	--	--	--
PentaCB-(88)+(91)	0.864	0.976	0.4	--	--	--

Please see notes at end of table.

Table 4b
Riverbank Soil Analytical Results - PCB Congeners
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Berth 401		Berth 409	CUL	RAL	PTW
Riverbank Cell	1		17			
Unit	Upper	Lower	Lower			
Sample Name	T4RB-1U	T4RB-1L	T4RB-17L			
Sample Date	9/29/2020	9/29/2020	10/8/2020			
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)						
22'346'-PentaCB-(89)	0.0349	0.0722	0.0174	--	--	--
PentaCB-(90)+(101)+(113)	4.31	7.15	2.32	--	--	--
22'355'-PentaCB-(92)	0.829	1.25	0.444	--	--	--
PentaCB-(93)+(98)+(100)+(102)	0.161	0.242	0.0759	--	--	--
22'356'-PentaCB-(94)	0.0222 J	0.0299	0.0099	--	--	--
22'35'6-PentaCB-(95)	5.25	5.75	2.08	--	--	--
22'366'-PentaCB-(96)	0.0269	0.0448	0.0135	--	--	--
22'45'6-PentaCB-(103)	0.0222 J	0.03	0.0105	--	--	--
22'466'-PentaCB-(104)	0.00084 U	0.00042 J	0.00023 U	--	--	--
233'44'-PentaCB-(105)	1.28	2.06	1.13	--	--	--
233'45-PentaCB-(106)	0.0032 U	0.00098 U	0.00082 U	--	--	--
233'4'5-PentaCB-(107)	0.239	0.366	0.199	--	--	--
PentaCB-(108)+(124)	0.17	0.237	0.0876	--	--	--
PentaCB-(110)+(115)	9.28	8.92	4.32	--	--	--
233'55'-PentaCB-(111)	0.0013 U	0.00077 U	0.002 JN	--	--	--
233'56-PentaCB-(112)	0.0012 U	0.00076 U	0.00086 U	--	--	--
2344'5-PentaCB-(114)	0.0432	0.0704	0.103	--	--	--
23'44'5-PentaCB-(118)	2.76	5.33	2.6	--	--	--
23'455'-PentaCB-(120)	0.0084 J	0.0034 J	0.00471 J	--	--	--
23'45'6-PentaCB-(121)	0.0011 U	0.00076 U	0.00088 U	--	--	--
233'4'5'-PentaCB-(122)	0.0675	0.0712	0.0432	--	--	--
23'44'5'-PentaCB-(123)	0.0789	0.0745	0.0565	--	--	--
33'44'5-PentaCB-(126)	0.0195 J	0.0082	0.0789	--	--	--
33'455'-PentaCB-(127)	0.013 J	0.00856	0.00624	--	--	--
HexaCB-(128)+(166)	2.32	1.16	1.2	--	--	--
HexaCB-(129)+(138)+(163)	14.4	8.14	6.56	--	--	--
22'33'45'-HexaCB-(130)	0.811	0.472	0.422	--	--	--
22'33'46-HexaCB-(131)	0.131	0.0973	0.0792	--	--	--
22'33'46'-HexaCB-(132)	4.42	2.68	2.22	--	--	--
22'33'55'-HexaCB-(133)	0.131	0.0723	0.0755	--	--	--
HexaCB-(134)+(143)	0.607	0.213	0.199	--	--	--
HexaCB-(135)+(151)	4.54	2.32	1.71	--	--	--
22'33'66'-HexaCB-(136)	1.66	0.928	0.526	--	--	--
22'344'5-HexaCB-(137)	0.477	0.408	0.289	--	--	--

Please see notes at end of table.

Table 4b
Riverbank Soil Analytical Results - PCB Congeners
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Berth 401		Berth 409	CUL	RAL	PTW
Riverbank Cell	1		17			
Unit	Upper	Lower	Lower			
Sample Name	T4RB-1U	T4RB-1L	T4RB-17L			
Sample Date	9/29/2020	9/29/2020	10/8/2020			
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)						
HexaCB-(139)+(140)	0.143	0.115	0.106	--	--	--
22'3455'-HexaCB-(141)	2.51	1.36	0.966	--	--	--
22'3456-HexaCB-(142)	0.014 U	0.0041 U	0.0023 U	--	--	--
22'345'6-HexaCB-(144)	0.648	0.384	0.219	--	--	--
22'3466'-HexaCB-(145)	0.0034 J	0.00205 J	0.00071 U	--	--	--
22'34'55'-HexaCB-(146)	1.69	0.869	0.699	--	--	--
HexaCB-(147)+(149)	10.3	4.92	3.91	--	--	--
22'34'56'-HexaCB-(148)	0.0047 J	0.00276 J	0.00622	--	--	--
22'34'66'-HexaCB-(150)	0.0063 J	0.00469 J	0.00528	--	--	--
22'3566'-HexaCB-(152)	0.0037 JN	0.00503	0.00316 J	--	--	--
HexaCB-(153)+(168)	8.73	6.1	4.27	--	--	--
22'44'56'-HexaCB-(154)	0.0456	0.0299	0.0545	--	--	--
22'44'66'-HexaCB-(155)	0.0013 U	0.00038 U	0.00049 U	--	--	--
HexaCB-(156)+(157)	1.11	0.835	0.83	--	--	--
233'44'6-HexaCB-(158)	1.21	0.813	0.61	--	--	--
233'455'-HexaCB-(159)	0.197	0.0337	0.0407	--	--	--
233'456-HexaCB-(160)	0.011 U	0.0029 U	0.0016 U	--	--	--
233'45'6-HexaCB-(161)	0.0083 U	0.0029 U	0.0015 U	--	--	--
233'4'55'-HexaCB-(162)	0.0268	0.0167	0.0506	--	--	--
233'4'5'6-HexaCB-(164)	0.985	0.535	0.524	--	--	--
233'55'6-HexaCB-(165)	0.0094 U	0.0031 U	0.0016 U	--	--	--
23'44'55'-HexaCB-(167)	0.539	0.3	0.332	--	--	--
33'44'55'-HexaCB-(169)	0.0057 J	0.0011 U	0.0073 U	--	--	--
22'33'44'5-HeptaCB-(170)	4.45	1.22	1.51	--	--	--
HeptaCB-(171)+(173)	1.22	0.424	0.417	--	--	--
22'33'455'-HeptaCB-(172)	0.749	0.197	0.235	--	--	--
22'33'456'-HeptaCB-(174)	3.96	1.23	1.38	--	--	--
22'33'45'6-HeptaCB-(175)	0.16	0.0704	0.0606	--	--	--
22'33'466'-HeptaCB-(176)	0.412	0.16	0.137	--	--	--
22'33'45'6'-HeptaCB-(177)	2.57	0.713	0.823	--	--	--
22'33'55'6-HeptaCB-(178)	0.822	0.219	0.265	--	--	--
22'33'566'-HeptaCB-(179)	1.45	0.493	0.621	--	--	--
HeptaCB-(180)+(193)	9.49	2.57	3.29	--	--	--
22'344'56-HeptaCB-(181)	0.0263	0.0208	0.017	--	--	--
22'344'56'-HeptaCB-(182)	0.0033 U	0.00083 U	0.0012 U	--	--	--

Please see notes at end of table.

Table 4b
Riverbank Soil Analytical Results - PCB Congeners
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Berth 401		Berth 409	CUL	RAL	PTW
Riverbank Cell	1		17			
Unit	Upper	Lower	Lower			
Sample Name	T4RB-1U	T4RB-1L	T4RB-17L			
Sample Date	9/29/2020	9/29/2020	10/8/2020			
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)						
22'344'5'6-HeptaCB-(183)	2.22	1.04	0.999	--	--	--
22'344'66'-HeptaCB-(184)	0.002 U	0.00062 U	0.00087 U	--	--	--
22'3455'6-HeptaCB-(185)	0.0037 U	0.00068 U	0.0013 U	--	--	--
22'34566'-HeptaCB-(186)	0.0026 U	0.00066 U	0.00095 U	--	--	--
22'34'55'6-HeptaCB-(187)	5.18	1.48	1.86	--	--	--
22'34'566'-HeptaCB-(188)	0.0051 J	0.00186 J	0.00091 U	--	--	--
233'44'55'-HeptaCB-(189)	0.163	0.0448	0.0711	--	--	--
233'44'56-HeptaCB-(190)	0.874	0.235	0.277	--	--	--
233'44'5'6-HeptaCB-(191)	0.205	0.0447	0.058	--	--	--
233'455'6-HeptaCB-(192)	0.003 U	0.00065 U	0.0012 U	--	--	--
22'33'44'55'-OctaCB-(194)	2.37	0.451	0.779	--	--	--
22'33'44'56-OctaCB-(195)	0.942	0.192	0.285	--	--	--
22'33'44'56'-OctaCB-(196)	1.33	0.301	0.429	--	--	--
22'33'44'66'OctaCB-(197)	0.0409	0.0204	0.0231	--	--	--
OctaCB-(198)+(199)	3.06	0.678	1.22	--	--	--
22'33'4566'-OctaCB-(200)	0.268	0.0676	0.108	--	--	--
22'33'45'66'-OctaCB-(201)	0.24	0.0823	0.117	--	--	--
22'33'55'66'-OctaCB-(202)	0.457	0.145	0.212	--	--	--
22'344'55'6-OctaCB-(203)	2.13	0.455	0.786	--	--	--
22'344'566'-OctaCB-(204)	0.002 U	0.00057 U	0.0009 U	--	--	--
233'44'55'6-OctaCB-(205)	0.112	0.0202	0.0458	--	--	--
22'33'44'55'6-NonaCB-(206)	1.29	0.335	0.737	--	--	--
22'33'44'566'-NonaCB-(207)	0.143	0.0365	0.0883	--	--	--
22'33'455'66'-NonaCB-(208)	0.353	0.0856	0.212	--	--	--
DecaCB-(209)	0.37	0.0646	0.205	--	--	--
Total PCB	145	130	72.9	9	75	200

Notes:

1. ng/g = Nanograms per gram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Shaded values exceed Portland Harbor ROD Remedial Action Level (ROD RAL).
7. -- = Value not available.
8. U = Analyte was not detected.
9. J = Result is estimated.
10. JN = The analyte was tentatively identified and did not meet method criteria for confirmation. The reported result is an estimated maximum possible concentration (EMPC).

Table 5
Riverbank Soil Analytical Results - Organochlorine Pesticides
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Aldrin	gamma-BHC (Lindane)	cis-Chlordane	trans-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Chlordane (Technical)	cis-Nonachlor	2,4'-DDD	2,4'-DDE	2,4'-DDT	Oxychlordane	trans-Nonachlor	Total Chlordanes	Total DDD	Total DDE	Total DDT	Total DDx
Concentrations in µg/kg																											
				CUL	2	5	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	1.4	114	50	246	6.1
				RAL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160
				PTW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7,050
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-1U	9/29/2020	Archived																						
		Lower	T4RB-1L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2	Upper	T4RB-2U	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-2L	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3	Upper	T4RB-3U	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	DUP-2 T4RB-3U	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-3L	9/30/2020	1.12 U	2.46 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	3.46	1.12 U	1.12 U	1.12 U	33.6 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U	1.12 U
	4	Upper	T4RB-4U-OR	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-4U	9/30/2020	Archived																						
		Lower	T4RB-4L	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5	Upper	T4RB-5U	9/30/2020	*2.18* U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	7.33 JN	*2.18* U	2.18 U	2.18 U	2.18 U	65.4 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	2.18 U	*2.18* U	2.18 U	2.18 U	8.42	8.42
		Lower	T4RB-5L	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-6L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7	Upper	T4RB-7U	10/1/2020	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	*1.04* UJ	1.04 UJ	1.04 UJ	1.04 UJ	31.1 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ	1.04 UJ
		Lower	T4RB-7L	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	Upper	T4RB-8U	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-8L	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9	Upper	T4RB-9U	10/1/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-9L	10/2/2020	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	*1.16* UJ	1.16 UJ	1.16 UJ	1.16 UJ	34.7 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ	1.16 UJ
		Lower	DUP-3 T4RB-9L	10/2/2020	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	*1.13* UJ	1.13 UJ	1.13 UJ	1.13 UJ	33.8 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ
		Lower	T4RB-9L *	10/2/2020	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	*1.13* UJ	1.13 UJ	1.13 UJ	1.13 UJ	33.8 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ	1.13 UJ
	10	Upper	T4RB-10U	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-10L	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11	Upper	T4RB-11U	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-11L	10/2/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Berth 405	12	Upper	T4RB-12U	--	Not Sampled																						
		Lower	T4RB-12L	--	Not Sampled																						
	13	Upper	T4RB-13U	--	Not Sampled																						
		Lower	T4RB-13L	--	Not Sampled																						
	14	Upper	T4RB-14U	--	Not Sampled																						
		Lower	T4RB-14L	--	Not Sampled																						
	15	Upper	T4RB-15U	--	Not Sampled																						
		Lower	T4RB-15L	--	Not Sampled																						
		Lower	T4RB-15L-OQ	--	Not Sampled																						
Berth 409	16	Upper	T4RB-16U	10/7/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-16L	10/7/2020	Archived																						
		Lower	T4RB-16L-O52C	10/7/2020	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	*1.32* U	1.32 U	1.32 U	1.32 U	39.7 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U	1.32 U
		Lower	T4RB-16L-OO	10/7/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	17	Upper	T4RB-17U	10/8/2020	*14.4* U	*28.9* U	14.4 U	14.4 U	14.4 U	14.4 U	14.4 U	*14.4* U	14.4 U	14.4 U	14.4 U	433 U	14.4 U	14.4 U	14.4 U	14.4 U	14.4 U	14.4 U	*14.4* U	14.4 U	14.4 U	14.4 U	*14.4* U
		Lower	T4RB-17L	10/8/2020	Archived																						
		Lower	T4RB-17L-ON	10/8/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Berth 408	18	Upper	T4RB-18U	10/5/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-18L	10/5/2020	Archived																						
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment																						
	19	Upper	T4RB-19U	10/5/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-19L	10/5/2020	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	1.90 JN	*1.03* U	1.03 U	1.03 U	1.03 U	30.8 U	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U	2.42 J	2.42 J
	20	Upper	T4RB-20U	10/5/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-20L	10/6/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	21	Upper	T4RB21U	10/6/2020	0.996 U	1.99 U	0.996 U	0.996 U	8.96 U	2.29 U	11.3	*1.99* U	2.39 U	1.99 U	1.99 U	29.9 U	5.58 U	4.48 U	2.49 U	3.98 U	1.99 U	1.99 U	*5.58* U	8.96 U	2.49 U	13.3	15.8
		Lower	T4RB-21L	10/6/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	DUP-4 T4RB-21L	10/6/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22	Upper	T4RB-22U	10/6/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-22L	10/6/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.41 J	0.036 JN	1.06 U	1.06 U	1.06 U	31.9 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.94 J	1.94 J
		Lower	T4RB-23L	9/28/2020	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	*1.04* U	1.04 U	1.04 U	1.04 U	31.2 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U	1.04 U
	24	Upper	T4RB-24U	9/28/2020	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	*1.08* U	1.08 U	1.08 U	1.08 U	32.4 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U	1.08 U
		Lower	T4RB-24L	9/28/2020	1.18 UJ	2.37 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	*1.18* UJ	1.18 UJ	1.18 UJ	1.18 UJ	35.5 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ	1.18 UJ
	25	Upper	T4RB-25U	9/28/2020	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	0.025 U	1.00 U	1.00 U	1.00 U	30.1 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
		Lower	T4RB-25L	9/28/2020	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	*1.20* U	1.20 U	1.20 U	1.20 U	36.0 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
		Lower	DUP-1 T4RB-25L	9/28/2020	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	*1.14* UJ	1.14 UJ	1.14 UJ	1.14 UJ	34.2 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ
		Lower	T4RB-25L *	9/28/2020	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	*1.14* UJ	1.14 UJ	1.14 UJ	1.14 UJ	34.2 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ	1.14 UJ
	26	Upper	T4RB-26U	9/28/2020	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.65 J	1.06 U	1.06 U	1.06 U	31.7 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U	1.06 U
		Lower	T4RB-26L	9/28/2020	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	*1.11* U	1.11 U	1.11 U	1.11 U	33.4 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U

Please see notes at end of table.

Table 5
Riverbank Soil Analytical Results - Organochlorine Pesticides
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Aldrin	gamma-BHC (Lindane)	cis-Chlordane	trans-Chlordane	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Chlordane (Technical)	cis-Nonachlor	2,4'-DDD	2,4'-DDE	2,4'-DDT	Oxychlordane	trans-Nonachlor	Total Chlordanes	Total DDD	Total DDE	Total DDT	Total DDx
Concentrations in µg/kg																											
				CUL	2	5	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	1.4	114	50	246	6.1
				RAL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	160
				PTW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7,050
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-27L	9/28/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	28	Upper	T4RB-28U	9/29/2020	33.1	2.45 U	2.45 U	2.45 U	21.8	207	306	967	2.45 U	4.29 U	10.7 U	36.8 U	19.1 U	13.6 U	6.74 U	90.2	2.57 U	2.45 U	*19.1* U	28.6	210	396	632
		Lower	T4RB-28L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	29	Upper	T4RB-29U	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-29L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	*13.5* U	*13.5* U	13.5 U	13.5 U	75.0 JN J+	27.0 U	67.4 U	*27.0* U	13.5 U	13.5 U	27.0 U	405 U	51.3 U	37.8 U	27.0 U	13.5 U	13.5 U	13.5 U	*51.3* U	93.9	27 U	67 U	109
		--	T4RB-K2	10/8/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	T4RB-BEBRA	10/8/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	41	Upper	T4RB-41U		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-41L		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	T4RB-OJ	10/9/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-43L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	44	Upper	T4RB-44U-OD1	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-44U	10/13/2020	Archived																						
		Lower	T4RB-44L	10/12/2020	1.31 U	1.31 U	1.31 U	1.31 U	2.61 U	2.61 U	22.5	0.033 U	1.31 U	1.31 U	1.31 U	39.2 U	2.61 U	1.31 U	2.61 U	3.29	1.31 U	1.31 U	*2.61* U	2.61 U	2.61 U	25.8	27.1
	45	Upper	T4RB-45U-OD2	10/13/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-45U-OD3	10/13/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-45U	10/13/2020	Archived																						
		Lower	T4RB-45L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	46	Upper	T4RB-46U	10/9/2020	*9.81* U	*19.6* U	9.81 U	9.81 U	19.6 U	25.8 J+	268 J+	*9.81* U	9.81 U	9.81 U	31.4 U	294 U	19.6 U	9.81 U	9.81 U	43.3 J+	9.81 U	9.81 U	*19.6* U	19.6 U	30.7	311	347
		Lower	T4RB-46L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	47	Upper	T4RB-47U	10/9/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-47L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-48L	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	49	Upper	T4RB-49U	10/13/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-49L	10/13/2020	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	*1.11* U	1.11 U	1.11 U	1.11 U	33.4 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U
	50	Upper	T4RB-50U	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-50L	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	51	Upper	T4RB-51U	10/14/2020	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.15 J-	1.13 J-	0.221	1.07 UJ	1.07 UJ	1.07 UJ	32.1 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.07 UJ	1.69	1.67	2.82
		Lower	T4RB-51L	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-51L-OD4	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. µg/kg = Micrograms per kilogram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Shaded values exceed Portland Harbor ROD Remedial Action Level (ROD RAL).
7. Italicized values represent a method detection limit that is above one or more applicable screening levels.
8. -- = Value not available or sample was not analyzed for pesticides per sampling program.
9. DUP = Field duplicate.
10. U = Analyte was not detected.
11. J = Result is estimated.
12. JN = The analyte was tentatively identified and did not meet method criteria for confirmation.
13. UJ = The analyte was analyzed for but was not detected. However, the detection limit may be inaccurate or imprecise.
14. J- = Result is an estimated value and may be biased low.
15. J+ = Result is an estimated value and may be biased high.
16. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 6
Riverbank Soil Analytical Results - Dioxins/Furans
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	2,3,7,8-Tetra CDD	1,2,3,7,8-Penta CDD	1,2,3,4,7,8-Hexa CDD	1,2,3,6,7,8-Hexa CDD	1,2,3,7,8,9-Hexa CDD	1,2,3,4,6,7,8-Hepta CDD	Octa CDD	2,3,7,8-Tetra CDF	1,2,3,7,8-Penta CDF	2,3,4,7,8-Penta CDF	1,2,3,4,7,8-Hexa CDF	1,2,3,6,7,8-Hexa CDF	2,3,4,6,7,8-Hexa CDF	1,2,3,7,8,9-Hexa CDF	1,2,3,4,6,7,8-Hepta CDF	1,2,3,4,7,8,9-Hepta CDF	Octa CDF	Total TEQ
					Concentrations in pg/g																	
				CUL	0.2	0.2	--	--	--	--	--	0.40658	--	0.3	0.4	--	--	--	--	--	--	10
				RAL	0.6	0.8	--	--	--	--	--	--	--	200	--	--	--	--	--	--	--	--
				PTW	10	10	--	--	--	--	--	600	--	200	40	--	--	--	--	--	--	--
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	3.28	2.31 J	3.45 J	18.4	15.7 JN	778	11,100	*11.3* U	2.21 J	4.53 J	16.2 JN	6.46	6.47	0.326 J	153	13.6	681	27.3
		Upper	T4RB-1U	9/29/2020	0.337 J	1.33 J	1.86 J	6.26	4.57 J	181	1,240	2.08	0.943 J	1.38 J	4.45 J	1.89 J	1.42 J	0.184 J	28.9	2.25 J	63.6	6.89
		Lower	T4RB-1L	9/29/2020	0.115 U	0.285 J	0.411 J	2.60 J	1.59 J	96.5	938	0.498 J	0.116 U	0.286 J	1.24 J	0.451 J	0.345 J	0.113 U	22.9	1.88 J	167	2.69
	2	Upper	T4RB-2U	9/30/2020	0.111 U	0.102 U	0.0997 U	0.0994 U	0.104 U	1.16 J+	11.0	0.107 U	0.114 U	0.107 U	0.102 U	0.105 U	0.102 U	0.106 U	0.494 J+	0.110 U	0.701 J+	0.0756
		Lower	T4RB-2L	9/30/2020	0.265 J	0.524 J	1.28 J	9.44	3.23 J	489	7,680	0.471 J	0.365 J	0.603 J	3.93 J	1.01 J	0.561 J	0.111 U	97.2	25.8	537	11.6
	3	Upper	T4RB-3U	9/30/2020	0.109 U	0.670 J	1.86 J	15.0	4.04 J	663	6,540	0.113 U	0.108 U	0.101 U	1.48 J	0.504 J	0.382 J	0.116 U	152	7.69	1,210	13.6
		Upper	DUP-2 T4RB-3U	9/30/2020	0.113 U	0.654 J	2.23 J	19.8	5.07	773	8,130	0.104 U	0.110 U	0.102 U	1.82 J	0.538 JN	0.537 J	0.117 U	166	8.66	1,380	16.0
		Upper	T4RB-3U *	9/30/2020	0.109 U	0.662 J	2.05 J	17.4	4.56 J	718	7,335	0.104 U	0.108 U	0.101 U	1.65 J	0.521 J	0.460 J	0.116 U	159	8.18	1,295	14.8
		Lower	T4RB-3L	9/30/2020	0.105 U	0.317 J	1.37 J	24.6	4.55 J	1,160	12,000	0.117 U	0.116 U	0.108 U	2.98 J	0.609 J	0.247 J	0.114 U	230	11.4	1,950 JN	22.0
	4	Upper	T4RB-4U-OR	9/30/2020	0.114 U	0.279 J	0.881 J	7.61	2.02 J	306	3,210	0.105 J	0.120 U	0.112 JN	2.33 J	0.602 J	0.174 J	0.104 U	113	7.45	701	7.18
		Upper	T4RB-4U	9/30/2020	Archived																	
		Lower	T4RB-4L	9/30/2020	0.111 U	0.348 J	0.718 J	6.04	2.13 J	242	2,710	0.230 J	0.137 JN	0.115 JN	1.27 J	0.565 J	0.255 J	0.112 U	60.2	3.11 J	388	5.55
	5	Upper	T4RB-5U	9/30/2020	0.529 J	2.96 J	5.91	46.4	14.4	1,880	22,800	1.13	0.831 J	1.07 J	11.4	4.00 J	2.99 J	0.172 J	600	26.6	2,760 JN	45.2
		Lower	T4RB-5L	9/30/2020	1.09	9.68	20.3	106	42.7	5,000	69,400	0.890 J	1.38 J+	2.99 J	54.5	30.1	5.99	0.219 JN	1,440	69.2	10,700	127
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	0.112 U	0.108 U	1.06 J	3.97 J	1.24 J	162	2,370	0.110 U	0.110 U	0.102 U	0.627 JN	0.157 JN	0.178 J	0.119 U	70.3	2.94 J	384	3.96
		Lower	T4RB-6L	--	Not Sampled																	
	7	Upper	T4RB-7U	10/1/2020	0.108 U	0.107 U	0.126 JN	0.665 J	0.193 JN	26.6	327	0.107 U	0.123 U	0.115 U	0.113 U	0.116 U	0.113 U	0.118 U	9.47	0.363 JN	56.8	0.632
		Lower	T4RB-7L	10/1/2020	0.116 U	0.119 U	0.142 JN	5.80	0.985 J	255	3,870	0.108 U	0.122 U	0.113 U	1.30 J	0.232 JN	0.135 JN	0.109 U	103	3.98 J	606	5.88
	8	Upper	T4RB-8U	10/1/2020	0.103 U	0.223 JN	0.561 J	8.24	2.21 J	356	6,930	0.301 J	0.175 JN	0.200 J	1.41 J	0.517 J	0.557 J	0.108 U	87.9	4.99 J	641	8.48
		Lower	T4RB-8L	10/1/2020	0.112 U	0.109 U	0.155 J	0.669 JN	0.525 J	24.5	342	0.189 J	0.178 U	0.108 U	0.706 J	0.198 JN	0.160 J	0.114 U	6.97	0.578 J	40.7	0.751
	9	Upper	T4RB-9U	10/1/2020	0.117 U	0.285 JN	0.387 J	2.05 J	1.02 J	79.4	846	0.281 J	0.245 U	0.233 J	1.21 J	0.402 J	0.279 J	0.106 U	15.4 JN	0.790 J	60.4	2.20
		Lower	T4RB-9L	10/2/2020	0.106 U	0.264 J	0.368 J	2.35 J	1.06 J	59.6	557	0.156 J	0.176 J+	0.193 J	1.16 J	0.306 J	0.553 JN	0.107 U	11.8	0.763 J	46.6	1.88
		Lower	DUP-3 T4RB-9L	10/2/2020	0.110 U	0.209 J	0.369 J	2.37 J	1.36 J	73.3	832	0.119 U	0.197 J+	0.237 J	1.25 J	0.336 J	0.275 J	0.121 U	13.8	0.801 J	74.3	2.09
		Lower	T4RB-9L *	10/2/2020	0.106 U	0.237 J	0.369 J	2.36 J	1.21 J	66.5	695	0.156 J	0.187 J+	0.215 J	1.21 J	0.321 J	0.414 J	0.107 U	12.8	0.782 J	60.5	1.99
	10	Upper	T4RB-10U	10/2/2020	0.157 J	0.816 JN	2.51 J	52.7	9.54	2,060	27,700	0.716 J	0.486 J+	0.593 JN	5.96	1.88 J	1.17 J	0.112 U	531	20.9	4,220	44.3
		Lower	T4RB-10L	10/2/2020	0.155 JN	1.90 J	3.17 J	28.1	8.04	1,140	13,200	0.109 U	0.108 U	0.244 J	3.02 J	0.846 J	0.823 J	0.120 U	269	12.5	2,270	25.4
	11	Upper	T4RB-11U	10/2/2020	0.144 J	0.815 J	2.03 J	21.2	8.60	981	9,670	0.241 J	0.226 U	0.311 J	2.65 J	0.890 J	0.620 J	0.122 U	183	7.00	1,320	19.7
		Lower	T4RB-11L	10/2/2020	9.87	86.3	191	841	357	34,900	126,000	2.85	9.37	34.1	252	70.7	42.7	1.21 JN	8,270	366	64,400 JN	775
Berth 405	12	Upper	T4RB-12U	--	Not Sampled																	
		Lower	T4RB-12L	--	Not Sampled																	
	13	Upper	T4RB-13U	--	Not Sampled																	
		Lower	T4RB-13L	--	Not Sampled																	
	14	Upper	T4RB-14U	--	Not Sampled																	
		Lower	T4RB-14L	--	Not Sampled																	
	15	Upper	T4RB-15U	--	Not Sampled																	
		Lower	T4RB-15L	--	Not Sampled																	
		Lower	T4RB-15L-OQ	--	Not Sampled																	

Please see notes at end of table.

Table 6
Riverbank Soil Analytical Results - Dioxins/Furans
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	2,3,7,8-Tetra CDD	1,2,3,7,8-Penta CDD	1,2,3,4,7,8-Hexa CDD	1,2,3,6,7,8-Hexa CDD	1,2,3,7,8,9-Hexa CDD	1,2,3,4,6,7,8-Hepta CDD	Octa CDD	2,3,7,8-Tetra CDF	1,2,3,7,8-Penta CDF	2,3,4,7,8-Penta CDF	1,2,3,4,7,8-Hexa CDF	1,2,3,6,7,8-Hexa CDF	2,3,4,6,7,8-Hexa CDF	1,2,3,7,8,9-Hexa CDF	1,2,3,4,6,7,8-Hepta CDF	1,2,3,4,7,8,9-Hepta CDF	Octa CDF	Total TEQ
Concentrations in pg/g																						
				CUL	0.2	0.2	--	--	--	--	--	0.40658	--	0.3	0.4	--	--	--	--	--	--	10
				RAL	0.6	0.8	--	--	--	--	--	--	--	200	--	--	--	--	--	--	--	--
				PTW	10	10	--	--	--	--	--	600	--	200	40	--	--	--	--	--	--	--
Berth 409	16	Upper	T4RB-16U	10/7/2020	0.148 U	0.661 J	0.934 J	3.49 J	1.83 J	129	1,210	0.745 J	0.480 J	0.919 J	5.39	1.10 J	0.707 U	0.150 U	25.2	3.11 J	101	4.34
		Lower	T4RB-16L	10/7/2020	Archived																	
		Lower	T4RB-16L-O52C	10/7/2020	0.144 U	0.515 J	1.02 J	7.59	2.76 JN	347	3,870	0.421 J	0.416 J	0.725 J	4.58 J	1.04 J	0.715 J	0.148 U	73.0	4.75 J	433	8.17
		Lower	T4RB-16L-OO	10/7/2020	0.137 U	0.142 U	0.197 J	0.786 J	0.418 JN	26.4	261	0.148 U	0.149 U	0.189 J	1.08 J	0.349 J	0.169 J	0.147 U	7.11	0.798 J	34.8	0.859
	17	Upper	T4RB-17U	10/8/2020	3.73 J	33.5 J	60.6 J	264	178	10,800	92,600	9.77 J	15.9 J	22.2 J	273 JN	49.9 J	20.8 J	2.28 U	2,920	391	12,100	303
		Lower	T4RB-17L	10/8/2020	*1.46* U	6.47 J	11.1 J	45.5 J	29.5 J	1,710	15,800	4.39 J	1.10 U	13.8 J	68.0	14.5 J	8.27 J	1.14 U	282	26.6 J	1,250	55.6
		Lower	T4RB-17L-ON	10/8/2020	1.97 J	8.05 J	5.43 J+	42.8	16.0 J	1,490	11,400	5.83 J	3.70 J	6.33 J	43.2 J	13.4 J	8.41 J	2.19 U	319	19.2 J	1,080	47.7
Berth 408	18	Upper	T4RB-18U	10/5/2020	0.300 J	2.07 J	2.96 J	52.7	11.7	1,480	13,300 J+	3.96	6.50	26.1	265	37.2	13.5	1.48 J	634	206	1,540	76.9
		Lower	T4RB-18L	10/5/2020	Archived																	
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment																	
	19	Upper	T4RB-19U	10/5/2020	0.123 JN	0.598 J	0.980 J	38.6	4.77 J	1,270	12,600	2.16	3.55 J	15.7	137	18.9	6.48	0.396 J	407	102	1,550	48.5
		Lower	T4RB-19L	10/5/2020	0.119 U	0.291 JN	0.515 J	15.6	2.06 J	402 J+	3,560 J+	1.02	3.19 J	15.5	111	17.9	4.61 J	0.256 J	189	54.7	397	28.0
	20	Upper	T4RB-20U	10/5/2020	0.146 JN	0.484 J	0.448 J	7.67	2.19 J	303	2,650	1.75	1.19 J	4.86 J	29.1	6.30	3.16 J	0.113 U	83.1	22.2	272	12.2
		Lower	T4RB-20L	10/6/2020	0.108 U	0.109 U	0.123 JN	1.32 J	0.246 JN	26.9	231	0.205 J	0.471 U	2.53 J	11.7	1.80 J	0.614 J	0.105 U	12.4	2.38 J	19.8	2.91
	21	Upper	T4RB-21U	10/6/2020	0.228 J	0.481 J	0.481 JN	8.82	2.11 J	388	3,530	1.02	0.726 J	2.72 J	10.2	2.74 J	1.76 J	0.110 U	114	7.73	770	10.7
		Lower	T4RB-21L	10/6/2020	0.113 U	0.446 J	0.756 J	44.2	4.05 J	1,140	17,300 J+	2.76	11.3	54.8	271	39.9	12.2	0.812 J	454	66.2	1,280	77.0
		Lower	DUP-4 T4RB-21L	10/6/2020	0.107 U	0.347 JN	0.688 J	37.7 J+	3.67 J	1,110	15,200	2.81	9.79	50.1	255	35.6	6.67	0.283 JN	455	62.7	1,270	71.2
		Lower	T4RB-21L *	10/6/2020	0.107 U	0.397 J	0.722 J	41.0 J+	3.86 J	1,125	16,250 J+	2.79	10.5	52.5	263	37.8	9.44	0.548 J	455	64.5	1,275	74.1
	22	Upper	T4RB-22U	10/6/2020	0.325 JN	1.68 J	3.15 J	15.4	8.71	497	4,700	2.88	1.96 JN	7.89	36.2	10.8	4.82 J	0.128 J	167	20.6	498	21.0
		Lower	T4RB-22L	10/6/2020	0.114 U	0.315 J	2.87 J	20.6	2.53 J	540	3,990	0.636 J	2.48 J	12.0	110	12.8	4.40 J	0.113 U	261	70.5	691	29.5
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	0.103 U	0.294 J	0.375 J	2.93 J	1.44 J	171	2,190	0.333 J	0.480 J	2.45 J	9.84	2.29 J	1.59 J	0.110 U	24.2	2.61 J	94.8	5.64
		Lower	T4RB-23L	9/28/2020	0.110 U	0.114 U	0.227 J	3.83 J	0.958 J	126	1,140	0.213 J	0.930 J	4.66 J	25.9	3.69 J	1.31 J	0.172 JN	40.5	5.28	117	7.21
	24	Upper	T4RB-24U	9/28/2020	0.118 U	0.110 U	0.105 U	1.80 J	0.359 J	71.8	811	0.107 U	0.372 J	1.70 J	9.21	1.32 J	0.443 JN	0.120 U	19.4	2.34 J	74.9	3.09
		Lower	T4RB-24L	9/28/2020	0.112 U	0.108 U	0.300 J	19.9	1.98 J	450	3,330	1.10	5.24	32.0	154	22.1	7.70	0.927 J	209	23.4	697	38.6
	25	Upper	T4RB-25U	9/28/2020	0.114 U	0.120 U	0.112 U	0.331 J	0.170 J	10.5	101	0.108 U	0.116 U	0.397 J	1.63 J	0.286 J	0.144 J	0.111 U	3.19 J	0.406 J	14.1	0.611
		Lower	T4RB-25L	9/28/2020	0.113 U	0.120 U	0.156 J	2.09 J	0.740 J	64.3	611	0.151 J	0.591 J	3.53 J	20.0	2.81 J	0.994 J	0.112 JN	21.8	2.91 J	40.3	4.93
		Lower	DUP-1 T4RB-25L	9/28/2020	0.103 U	0.107 U	0.104 U	1.50 J	0.563 J	43.6	402 J+	0.133 U	0.444 J	2.57 J	14.8	2.08 J	0.797 J	0.111 U	16.2	2.36 J	29.7	3.56
		Lower	T4RB-25L *	9/28/2020	0.103 U	0.107 U	0.156 J	1.80 J	0.652 J	54.0	507 J+	0.151 J	0.518 J	3.05 J	17.4	2.45 J	0.896 J	0.112 JN	19.0	2.64 J	35.0	4.26
	26	Upper	T4RB-26U	9/28/2020	0.115 U	0.105 U	0.110 U	0.382 J	0.234 J	16.0	184	0.107 U	0.118 U	0.158 J	0.638 J	0.111 U	0.105 U	0.112 U	2.90 J	0.201 JN	19.4	0.482
		Lower	T4RB-26L	9/28/2020	0.111 U	0.116 U	0.111 U	0.588 J	0.185 J	29.8	325	0.110 U	0.116 U	0.106 U	0.235 J	0.104 U	0.0979 U	0.105 U	6.14	0.369 J	55.3	0.636
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-27L	9/28/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	28	Upper	T4RB-28U	9/29/2020	0.106 U	0.430 J	0.702 J	3.32 J	3.20 J	128	1,370	0.691 J	0.629 J	2.16 J	10.5	1.67 J	0.857 J	0.112 J	22.2	2.25 J	72.2	5.21
		Lower	T4RB-28L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	29	Upper	T4RB-29U	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-29L	9/29/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	3.50 J	6.47 J	6.68 J	27.2 J	23.4 J	838	8,180	49.5	166	50.0 J	138	37.2 J	12.8 J	2.24 U	196	19.7 J	374	72.6
		--	T4RB-K2	10/8/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	T4RB-BEBRA	10/8/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	41	--	T4RB-OJ	10/9/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Please see notes at end of table.

Table 6
Riverbank Soil Analytical Results - Dioxins/Furans
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	2,3,7,8-Tetra CDD	1,2,3,7,8-Penta CDD	1,2,3,4,7,8-Hexa CDD	1,2,3,6,7,8-Hexa CDD	1,2,3,7,8,9-Hexa CDD	1,2,3,4,6,7,8-Hepta CDD	Octa CDD	2,3,7,8-Tetra CDF	1,2,3,7,8-Penta CDF	2,3,4,7,8-Penta CDF	1,2,3,4,7,8-Hexa CDF	1,2,3,6,7,8-Hexa CDF	2,3,4,6,7,8-Hexa CDF	1,2,3,7,8,9-Hexa CDF	1,2,3,4,6,7,8-Hepta CDF	1,2,3,4,7,8,9-Hepta CDF	Octa CDF	Total TEQ
					Concentrations in pg/g																	
				CUL	0.2	0.2	--	--	--	--	--	0.40658	--	0.3	0.4	--	--	--	--	--	--	10
				RAL	0.6	0.8	--	--	--	--	--	--	--	200	--	--	--	--	--	--	--	--
				PTW	10	10	--	--	--	--	--	600	--	200	40	--	--	--	--	--	--	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-43L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	44	Upper	T4RB-44U-OD1	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-44U	10/13/2020	Archived																	
		Lower	T4RB-44L	10/12/2020	0.117 U	0.115 U	0.227 J	0.507 J	0.510 J	14.9 J+	113 J+	0.118 U	0.107 U	0.147 J	0.668 J	0.168 J	0.0971 U	0.104 U	1.49 J	0.110 U	4.03 J	0.510
	45	Upper	T4RB-45U-OD2	10/13/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-45U-OD3	10/13/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Upper	T4RB-45U	10/13/2020	Archived																	
		Lower	T4RB-45L	10/12/2020																		
	46	Upper	T4RB-46U	10/9/2020	6.53	60.0	74.8	610	163	14,500	72,000	8.49	24.0	35.5	112	34.9	78.5	1.55 J	763	36.9	680	361
		Lower	T4RB-46L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	47	Upper	T4RB-47U	10/9/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-47L	10/12/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-48L	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	49	Upper	T4RB-49U	10/13/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-49L	10/13/2020	0.115 U	0.101 U	0.109 U	0.353 J	0.186 J	7.67	54.1	0.107 U	0.107 U	0.0975 U	0.153 J	0.122 U	0.115 U	0.123 U	0.919 J	0.106 U	2.08 U	0.229
	50	Upper	T4RB-50U	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-50L	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	51	Upper	T4RB-51U	10/14/2020	0.143 U	0.141 U	0.218 J	1.05 J	0.763 J	60.8	670	0.140 U	0.155 U	0.142 U	0.628 J	0.240 J	0.161 J	0.121 U	4.11 J	0.437 J	12.5	1.24
		Lower	T4RB-51L	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Lower	T4RB-51L-OD4	10/14/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

1. pg/g = Picograms per gram (parts per trillion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Shaded values exceed Portland Harbor ROD Remedial Action Level (RAL).
7. Italicized values represent a method detection limit that is above one or more applicable screening levels.
8. -- = Value not available or sample was not analyzed for dioxins/furans per sampling program.
9. DUP = Field duplicate.
10. U = Analyte was not detected.
11. J = Result is estimated.
12. JN = The analyte was tentatively identified and did not meet method criteria for confirmation. The reported result is an estimated maximum possible concentration (EMPC).
13. J+ = Result is an estimated value and may be biased high.
14. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 7
Riverbank Soil Analytical Results - Metals
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
					Concentrations in mg/kg					
				CUL	3	0.51	359	196	0.085	459
				RAL	--	--	--	--	--	--
				PTW	--	--	--	--	--	--
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	--	--	--	--	--	--
		Upper	T4RB-1U	9/29/2020	Archived					
		Lower	T4RB-1L	9/29/2020	--	--	--	--	--	--
	2	Upper	T4RB-2U	9/30/2020	--	--	--	--	--	--
		Lower	T4RB-2L	9/30/2020	--	--	--	--	--	--
	3	Upper	T4RB-3U	9/30/2020	--	--	--	--	--	--
		Upper	DUP-2 T4RB-3U	9/30/2020	--	--	--	--	--	--
		Lower	T4RB-3L	9/30/2020	2.93	0.132 U	11.8	6.86	0.0527 U	46.9
	4	Upper	T4RB-4U-OR	9/30/2020	--	--	--	--	--	--
		Upper	T4RB-4U	9/30/2020	Archived					
		Lower	T4RB-4L	9/30/2020	--	--	--	--	--	--
	5	Upper	T4RB-5U	9/30/2020	2.61	0.486	30.2	61.1	0.113	162
		Lower	T4RB-5L	9/30/2020	--	--	--	--	--	--
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--	--	--	--	--	--
		Lower	T4RB-6L	--	Not Sampled					
	7	Upper	T4RB-7U	10/1/2020	3.02	0.119 U	13.0	2.52	0.0474 U	38.5
		Lower	T4RB-7L	10/1/2020	--	--	--	--	--	--
	8	Upper	T4RB-8U	10/1/2020	--	--	--	--	--	--
		Lower	T4RB-8L	10/1/2020	--	--	--	--	--	--
	9	Upper	T4RB-9U	10/1/2020	--	--	--	--	--	--
		Lower	T4RB-9L	10/2/2020	3.58	0.123 U	16,200 J	9.25	0.0494 U	50.6
		Lower	DUP-3 T4RB-9L	10/2/2020	2.94	0.132 U	18.5 J	6.66	0.0529 U	47.2
		Lower	T4RB-9L *	10/2/2020	3.26	0.123 U	8,109 J	7.96	0.0494 U	48.9
	10	Upper	T4RB-10U	10/2/2020	--	--	--	--	--	--
		Lower	T4RB-10L	10/2/2020	--	--	--	--	--	--
	11	Upper	T4RB-11U	10/2/2020	--	--	--	--	--	--
		Lower	T4RB-11L	10/2/2020	--	--	--	--	--	--
Berth 405	12	Upper	T4RB-12U	--	Not Sampled					
		Lower	T4RB-12L	--	Not Sampled					
	13	Upper	T4RB-13U	--	Not Sampled					
		Lower	T4RB-13L	--	Not Sampled					
	14	Upper	T4RB-14U	--	Not Sampled					
		Lower	T4RB-14L	--	Not Sampled					
	15	Upper	T4RB-15U	--	Not Sampled					
		Lower	T4RB-15L	--	Not Sampled					
		Lower	T4RB-15L-OQ	--	Not Sampled					
Berth 409	16	Upper	T4RB-16U	10/7/2020	--	--	--	--	--	--
		Lower	T4RB-16L	10/7/2020	Archived					
		Lower	T4RB-16L-O52C	10/7/2020	5.72	0.135 U	17.5	23.6	*0.108* U	67.4
		Lower	T4RB-16L-OO	10/7/2020	--	--	--	--	--	--
	17	Upper	T4RB-17U	10/8/2020	8.31	1.21	61.2	199	*0.123* U	311
		Lower	T4RB-17L	10/8/2020	Archived					
		Lower	T4RB-17L-ON	10/8/2020	--	--	--	--	--	--

Please see notes at end of table.

Table 7
Riverbank Soil Analytical Results - Metals
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
					Concentrations in mg/kg					
				CUL	3	0.51	359	196	0.085	459
				RAL	--	--	--	--	--	--
				PTW	--	--	--	--	--	--
Berth 408	18	Upper	T4RB-18U	10/5/2020	4.72	3.80	26.8	432	0.0556 J	631
		Lower	T4RB-18L	10/5/2020	Archived					
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment					
	19	Upper	T4RB-19U	10/5/2020	12.5	20.0	58.5	1,280	0.150	3,080
		Lower	T4RB-19L	10/5/2020	4.88	10.0	28.2	173 J-	0.0461 U	1,420 J-
	20	Upper	T4RB-20U	10/5/2020	4.63	2.14	24.7	266	0.0416 U	354
		Lower	T4RB-20L	10/6/2020	2.46	0.149 J	12.8	4.99	0.0459 U	51.1
	21	Upper	T4RB-21U	10/6/2020	8.20	7.60	40.5	705	0.106	1,010
		Lower	T4RB-21L	10/6/2020	5.08	5.34	40.7	773	0.0592 J	953
		Lower	DUP-4 T4RB-21L	10/6/2020	4.87	4.27	37.0	735	0.0438 U	818
		Lower	T4RB-21L *	10/6/2020	4.98	4.81	38.9	754	0.0592 J	886
	22	Upper	T4RB-22U	10/6/2020	7.29	5.35	36.7	725	0.0499 J	760
		Lower	T4RB-22L	10/6/2020	2.76	0.275	15.1	47.5	0.0431 U	59.9
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	3.15	0.149 J	16.1	14.7	0.0456 U	57.0
		Lower	T4RB-23L	9/28/2020	2.99	0.118 U	13.1	6.78	0.0472 U	49.0
	24	Upper	T4RB-24U	9/28/2020	2.97	0.119 U	16.5	4.76	0.0477 U	45.7
		Lower	T4RB-24L	9/28/2020	4.04	0.119 U	16.5	6.19	0.117	53.1
	25	Upper	T4RB-25U	9/28/2020	2.99	0.108 U	15.3	5.19	0.0668 J	43.9
		Lower	T4RB-25L	9/28/2020	7.00	0.137 J	20.9	10.8	0.0541 U	68.7
		Lower	DUP-1 T4RB-25L	9/28/2020	6.92	0.167 J	21.5	11.9	0.0499 U	72.9
		Lower	T4RB-25L *	9/28/2020	6.96	0.152 J	21.2	11.4	0.0499 U	70.8
	26	Upper	T4RB-26U	9/28/2020	3.16	0.120 U	15.2	4.48	0.0481 U	42.2
		Lower	T4RB-26L	9/28/2020	3.32	0.116 U	14.5	4.73	0.0462 U	44.8
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--	--	--	--	--	--
		Lower	T4RB-27L	9/28/2020	--	--	--	--	--	--
	28	Upper	T4RB-28U	9/29/2020	2.97	0.267	25.5	21.4	0.0933 J	41.3
		Lower	T4RB-28L	9/29/2020	--	--	--	--	--	--
	29	Upper	T4RB-29U	9/29/2020	--	--	--	--	--	--
		Lower	T4RB-29L	9/29/2020	--	--	--	--	--	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	65.5	74.5	434	11,100	0.851	12,600
		--	T4RB-K2	10/8/2020	--	--	--	--	--	--
		--	T4RB-BEBRA	10/8/2020	--	--	--	--	--	--
	41	--	T4RB-OJ	10/9/2020	--	--	--	--	--	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	23.1	18.0	85.2	2,410	0.205	4,890
		Lower	T4RB-43L	10/12/2020	2.19	0.922	14.4	22.8	0.0526 U	597
	44	Upper	T4RB-44U-OD1	10/12/2020	3.91	0.847	16.4	308	0.0438 U	181
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	3.64	0.710	16.7	198	0.0419 U	144
		Upper	T4RB-44U-OD1 *	10/12/2020	3.78	0.779	16.6	253	0.0419 U	163
		Upper	T4RB-44U	10/13/2020	Archived					
		Lower	T4RB-44L	10/12/2020	3.92	0.756	20.2	58.9	0.0898 J	89.7
	45	Upper	T4RB-45U-OD2	10/13/2020	3.84	1.09	22.2	911	0.0469 U	219
		Upper	T4RB-45U-OD3	10/13/2020	3.45	0.113 U	13.8	6.27	0.0453 U	35.2
		Upper	T4RB-45U	10/13/2020	Archived					
		Lower	T4RB-45L	10/12/2020	3.35	0.354	17.3	10.2	0.0500 U	80.1
	46	Upper	T4RB-46U	10/9/2020	5.58	7.13	79.3	662	*0.0897* U	1,130
		Lower	T4RB-46L	10/12/2020	3.17	0.561	14.8	14.0	0.0466 U	106
	47	Upper	T4RB-47U	10/9/2020	1.56	0.286	19.8	10.7	*0.0926* U	54.0
		Lower	T4RB-47L	10/12/2020	3.89	0.185 J	14.7	4.23	0.0499 U	52.4

Please see notes at end of table.

Table 7
Riverbank Soil Analytical Results - Metals
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
					Concentrations in mg/kg					
				CUL	3	0.51	359	196	0.085	459
				RAL	--	--	--	--	--	--
				PTW	--	--	--	--	--	--
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--	--	--	--	--	--
		Lower	T4RB-48L	10/14/2020	--	--	--	--	--	--
	49	Upper	T4RB-49U	10/13/2020	--	--	--	--	--	--
		Lower	T4RB-49L	10/13/2020	3.61	0.723	16.9	17.7	0.0793 J	147
	50	Upper	T4RB-50U	10/14/2020	--	--	--	--	--	--
		Lower	T4RB-50L	10/14/2020	--	--	--	--	--	--
	51	Upper	T4RB-51U	10/14/2020	3.58	0.182 J	18.0	9.66	0.0471 U	58.3
		Lower	T4RB-51L	10/14/2020	--	--	--	--	--	--
		Lower	T4RB-51L-OD4	10/14/2020	--	--	--	--	--	--

Notes:

1. mg/kg = Milligrams per kilogram (parts per million).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Italicized values represent a method detection limit that is above one or more applicable screening levels.
7. -- = Value not available or sample was not analyzed for metals per sampling program.
8. DUP = Field duplicate.
9. U = Analyte was not detected.
10. J = Result is estimated.
11. J- = Result is an estimated value and may be biased low.
12. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 8
Riverbank Soil Analytical Results - BEHP
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	BEHP
Concentrations in µg/kg					
				CUL	135
				RAL	--
				PTW	--
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	--
		Upper	T4RB-1U	9/29/2020	Archived
		Lower	T4RB-1L	9/29/2020	--
	2	Upper	T4RB-2U	9/30/2020	--
		Lower	T4RB-2L	9/30/2020	--
	3	Upper	T4RB-3U	9/30/2020	--
		Upper	DUP-2 T4RB-3U	9/30/2020	--
		Lower	T4RB-3L	9/30/2020	23.4 U
	4	Upper	T4RB-4U-OR	9/30/2020	--
		Upper	T4RB-4U	9/30/2020	Archived
		Lower	T4RB-4L	9/30/2020	--
	5	Upper	T4RB-5U	9/30/2020	*441* U
		Lower	T4RB-5L	9/30/2020	--
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--
		Lower	T4RB-6L	--	Not Sampled
	7	Upper	T4RB-7U	10/1/2020	235
		Lower	T4RB-7L	10/1/2020	--
	8	Upper	T4RB-8U	10/1/2020	--
		Lower	T4RB-8L	10/1/2020	--
	9	Upper	T4RB-9U	10/1/2020	--
		Lower	T4RB-9L	10/2/2020	561
		Lower	DUP-3 T4RB-9L	10/2/2020	*236* U
		Lower	T4RB-9L *	10/2/2020	561
	10	Upper	T4RB-10U	10/2/2020	--
		Lower	T4RB-10L	10/2/2020	--
	11	Upper	T4RB-11U	10/2/2020	--
		Lower	T4RB-11L	10/2/2020	--

Please see notes at end of table.

Table 8
Riverbank Soil Analytical Results - BEHP
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	BEHP
Concentrations in µg/kg					
				CUL	135
				RAL	--
				PTW	--
Berth 405	12	Upper	T4RB-12U	--	Not Sampled
		Lower	T4RB-12L	--	Not Sampled
	13	Upper	T4RB-13U	--	Not Sampled
		Lower	T4RB-13L	--	Not Sampled
	14	Upper	T4RB-14U	--	Not Sampled
		Lower	T4RB-14L	--	Not Sampled
	15	Upper	T4RB-15U	--	Not Sampled
		Lower	T4RB-15L	--	Not Sampled
		Lower	T4RB-15L-OQ	--	Not Sampled
Berth 409	16	Upper	T4RB-16U	10/7/2020	--
		Lower	T4RB-16L	10/7/2020	Archived
		Lower	T4RB-16L-O52C	10/7/2020	*1,100* U
		Lower	T4RB-16L-OO	10/7/2020	--
	17	Upper	T4RB-17U	10/8/2020	*2,870* U
		Lower	T4RB-17L	10/8/2020	*2,930* U
		Lower	T4RB-17L-ON	10/8/2020	--
Berth 408	18	Upper	T4RB-18U	10/5/2020	--
		Lower	T4RB-18L	10/5/2020	Archived
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment
	19	Upper	T4RB-19U	10/5/2020	--
		Lower	T4RB-19L	10/5/2020	*203* U
	20	Upper	T4RB-20U	10/5/2020	--
		Lower	T4RB-20L	10/6/2020	--
	21	Upper	T4RB21U	10/6/2020	*197* U
		Lower	T4RB-21L	10/6/2020	--
		Lower	DUP-4 T4RB-21L	10/6/2020	--
	22	Upper	T4RB-22U	10/6/2020	--
		Lower	T4RB-22L	10/6/2020	--

Please see notes at end of table.

Table 8
Riverbank Soil Analytical Results - BEHP
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	BEHP
Concentrations in µg/kg					
				CUL	135
				RAL	--
				PTW	--
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	--
		Lower	T4RB-23L	9/28/2020	21.4 U
	24	Upper	T4RB-24U	9/28/2020	--
		Lower	T4RB-24L	9/28/2020	--
	25	Upper	T4RB-25U	9/28/2020	20.2 U
		Lower	T4RB-25L	9/28/2020	--
		Lower	DUP-1 T4RB-25L	9/28/2020	--
	26	Upper	T4RB-26U	9/28/2020	--
		Lower	T4RB-26L	9/28/2020	--
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--
		Lower	T4RB-27L	9/28/2020	--
	28	Upper	T4RB-28U	9/29/2020	*999* U
		Lower	T4RB-28L	9/29/2020	--
	29	Upper	T4RB-29U	9/29/2020	--
		Lower	T4RB-29L	9/29/2020	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	*7,140* U
		--	T4RB-K2	10/8/2020	--
		--	T4RB-BEBRA	10/8/2020	--
	41	--	T4RB-OJ	10/9/2020	--

Please see notes at end of table.

Table 8
Riverbank Soil Analytical Results - BEHP
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	BEHP
Concentrations in µg/kg					
				CUL	135
				RAL	--
				PTW	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	--
		Lower	T4RB-43L	10/12/2020	--
	44	Upper	T4RB-44U-OD1	10/12/2020	--
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	--
		Upper	T4RB-44U	10/13/2020	Archived
		Lower	T4RB-44L	10/12/2020	107 U
	45	Upper	T4RB-45U-OD2	10/13/2020	--
		Upper	T4RB-45U-OD3	10/13/2020	--
		Upper	T4RB-45U	10/13/2020	Archived
		Lower	T4RB-45L	10/12/2020	--
	46	Upper	T4RB-46U	10/9/2020	21.3 U
		Lower	T4RB-46L	10/12/2020	--
	47	Upper	T4RB-47U	10/9/2020	--
		Lower	T4RB-47L	10/12/2020	--

Please see notes at end of table.

Table 8
Riverbank Soil Analytical Results - BEHP
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	BEHP
Concentrations in µg/kg					
				CUL	135
				RAL	--
				PTW	--
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--
		Lower	T4RB-48L	10/14/2020	--
	49	Upper	T4RB-49U	10/13/2020	--
		Lower	T4RB-49L	10/13/2020	91.6 U
	50	Upper	T4RB-50U	10/14/2020	--
		Lower	T4RB-50L	10/14/2020	--
	51	Upper	T4RB-51U	10/14/2020	87.1 U
		Lower	T4RB-51L	10/14/2020	--
		Lower	T4RB-51L-OD4	10/14/2020	--

Notes:

1. µg/kg = Micrograms per kilogram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. Italicized values represent a method detection limit that is above one or more applicable screening levels.
7. -- = Value not available or sample was not analyzed for phthalates per sampling program.
8. DUP = Field duplicate.
9. U = Analyte was not detected.
10. BEHP = Bis(2-ethylhexyl)phthalate.
11. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 9
Riverbank Soil Analytical Results - Chlorobenzene
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Chlorobenzene
Concentrations in µg/kg					
				CUL	--
				RAL	--
				PTW	320
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	--
		Upper	T4RB-1U	9/29/2020	Archived
		Lower	T4RB-1L	9/29/2020	--
	2	Upper	T4RB-2U	9/30/2020	--
		Lower	T4RB-2L	9/30/2020	--
	3	Upper	T4RB-3U	9/30/2020	--
		Upper	DUP-2 T4RB-3U	9/30/2020	--
		Lower	T4RB-3L	9/30/2020	15.5 U
	4	Upper	T4RB-4U-OR	9/30/2020	--
		Upper	T4RB-4U	9/30/2020	Archived
		Lower	T4RB-4L	9/30/2020	--
	5	Upper	T4RB-5U	9/30/2020	16.0 U
		Lower	T4RB-5L	9/30/2020	--
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--
		Lower	T4RB-6L	--	Not Sampled
	7	Upper	T4RB-7U	10/1/2020	14.5 U
		Lower	T4RB-7L	10/1/2020	--
	8	Upper	T4RB-8U	10/1/2020	--
		Lower	T4RB-8L	10/1/2020	--
	9	Upper	T4RB-9U	10/1/2020	--
		Lower	T4RB-9L	10/2/2020	22.1 U
		Lower	DUP-3 T4RB-9L	10/2/2020	27.8 U
		Lower	T4RB-9L *	10/2/2020	22.1 U
	10	Upper	T4RB-10U	10/2/2020	--
		Lower	T4RB-10L	10/2/2020	--
	11	Upper	T4RB-11U	10/2/2020	--
		Lower	T4RB-11L	10/2/2020	--

Please see notes at end of table.

Table 9
Riverbank Soil Analytical Results - Chlorobenzene
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Chlorobenzene
Concentrations in µg/kg					
				CUL	--
				RAL	--
				PTW	320
Berth 405	12	Upper	T4RB-12U	--	Not Sampled
		Lower	T4RB-12L	--	Not Sampled
	13	Upper	T4RB-13U	--	Not Sampled
		Lower	T4RB-13L	--	Not Sampled
	14	Upper	T4RB-14U	--	Not Sampled
		Lower	T4RB-14L	--	Not Sampled
	15	Upper	T4RB-15U	--	Not Sampled
		Lower	T4RB-15L	--	Not Sampled
		Lower	T4RB-15L-OQ	--	Not Sampled
Berth 409	16	Upper	T4RB-16U	10/7/2020	--
		Lower	T4RB-16L	10/7/2020	Archived
		Lower	T4RB-16L-O52C	10/7/2020	19.3 U
		Lower	T4RB-16L-OO	10/7/2020	--
	17	Upper	T4RB-17U	10/8/2020	26.7 U
		Lower	T4RB-17L	10/8/2020	Archived
		Lower	T4RB-17L-ON	10/8/2020	--
Berth 408	18	Upper	T4RB-18U	10/5/2020	--
		Lower	T4RB-18L	10/5/2020	Archived
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment
	19	Upper	T4RB-19U	10/5/2020	--
		Lower	T4RB-19L	10/5/2020	14.4 U
	20	Upper	T4RB-20U	10/5/2020	--
		Lower	T4RB-20L	10/6/2020	--
	21	Upper	T4RB21U	10/6/2020	15.6 U
		Lower	T4RB-21L	10/6/2020	--
		Lower	DUP-4 T4RB-21L	10/6/2020	--
	22	Upper	T4RB-22U	10/6/2020	--
		Lower	T4RB-22L	10/6/2020	--

Please see notes at end of table.

Table 9
Riverbank Soil Analytical Results - Chlorobenzene
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Chlorobenzene
Concentrations in µg/kg					
				CUL	--
				RAL	--
				PTW	320
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	--
		Lower	T4RB-23L	9/28/2020	16.4 U
	24	Upper	T4RB-24U	9/28/2020	--
		Lower	T4RB-24L	9/28/2020	--
	25	Upper	T4RB-25U	9/28/2020	15.7 U
		Lower	T4RB-25L	9/28/2020	--
		Lower	DUP-1 T4RB-25L	9/28/2020	--
	26	Upper	T4RB-26U	9/28/2020	--
		Lower	T4RB-26L	9/28/2020	--
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--
		Lower	T4RB-27L	9/28/2020	--
	28	Upper	T4RB-28U	9/29/2020	28.0 U
		Lower	T4RB-28L	9/29/2020	--
	29	Upper	T4RB-29U	9/29/2020	--
		Lower	T4RB-29L	9/29/2020	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	22.9 U
		--	T4RB-K2	10/8/2020	--
		--	T4RB-BEBRA	10/8/2020	--
	41	--	T4RB-OJ	10/9/2020	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	--
		Lower	T4RB-43L	10/12/2020	--
	44	Upper	T4RB-44U-OD1	10/12/2020	--
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	--
		Upper	T4RB-44U	10/13/2020	Archived
		Lower	T4RB-44L	10/12/2020	20.2 U
	45	Upper	T4RB-45U-OD2	10/13/2020	--
		Upper	T4RB-45U-OD3	10/13/2020	--
		Upper	T4RB-45U	10/13/2020	Archived
		Lower	T4RB-45L	10/12/2020	--
	46	Upper	T4RB-46U	10/9/2020	15.4 U
		Lower	T4RB-46L	10/12/2020	--
	47	Upper	T4RB-47U	10/9/2020	--
		Lower	T4RB-47L	10/12/2020	--

Please see notes at end of table.

Table 9
Riverbank Soil Analytical Results - Chlorobenzene
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Chlorobenzene
Concentrations in µg/kg					
				CUL	--
				RAL	--
				PTW	320
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--
		Lower	T4RB-48L	10/14/2020	--
	49	Upper	T4RB-49U	10/13/2020	--
		Lower	T4RB-49L	10/13/2020	16.9 U
	50	Upper	T4RB-50U	10/14/2020	--
		Lower	T4RB-50L	10/14/2020	--
	51	Upper	T4RB-51U	10/14/2020	14.5 U
		Lower	T4RB-51L	10/14/2020	--
		Lower	T4RB-51L-OD4	10/14/2020	--

Notes:

1. µg/kg = Micrograms per kilogram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed PTW value.
6. -- = Value not available or sample was not analyzed for chlorobenzene per sampling program.
7. DUP = Field duplicate.
8. U = Analyte was not detected.
9. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 10
Riverbank Soil Analytical Results - Tributyltin Ion
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Tributyltin Ion
Concentrations in µg/kg					
				CUL	3,080
				RAL	--
				PTW	--
Berth 401	1	Upper	T4RB-1U-OS	9/29/2020	--
		Upper	T4RB-1U	9/29/2020	Archived
		Lower	T4RB-1L	9/29/2020	--
	2	Upper	T4RB-2U	9/30/2020	--
		Lower	T4RB-2L	9/30/2020	--
	3	Upper	T4RB-3U	9/30/2020	--
		Upper	DUP-2 T4RB-3U	9/30/2020	--
		Lower	T4RB-3L	9/30/2020	0.450 U
	4	Upper	T4RB-4U-OR	9/30/2020	--
		Upper	T4RB-4U	9/30/2020	Archived
		Lower	T4RB-4L	9/30/2020	--
	5	Upper	T4RB-5U	9/30/2020	0.444 U
		Lower	T4RB-5L	9/30/2020	--
North Side of Slip 1	6	Upper	T4RB-6U	10/1/2020	--
		Lower	T4RB-6L	--	Not Sampled
	7	Upper	T4RB-7U	10/1/2020	0.450 U
		Lower	T4RB-7L	10/1/2020	--
	8	Upper	T4RB-8U	10/1/2020	--
		Lower	T4RB-8L	10/1/2020	--
	9	Upper	T4RB-9U	10/1/2020	--
		Lower	T4RB-9L	10/2/2020	0.446 U
		Lower	DUP-3 T4RB-9L	10/2/2020	0.450 U
		Lower	T4RB-9L *	10/2/2020	0.446 U
	10	Upper	T4RB-10U	10/2/2020	--
		Lower	T4RB-10L	10/2/2020	--
	11	Upper	T4RB-11U	10/2/2020	--
		Lower	T4RB-11L	10/2/2020	--

Please see notes at end of table.

Table 10
Riverbank Soil Analytical Results - Tributyltin Ion
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Tributyltin Ion
Concentrations in µg/kg					
				CUL	3,080
				RAL	--
				PTW	--
Berth 405	12	Upper	T4RB-12U	--	Not Sampled
		Lower	T4RB-12L	--	Not Sampled
	13	Upper	T4RB-13U	--	Not Sampled
		Lower	T4RB-13L	--	Not Sampled
	14	Upper	T4RB-14U	--	Not Sampled
		Lower	T4RB-14L	--	Not Sampled
	15	Upper	T4RB-15U	--	Not Sampled
		Lower	T4RB-15L	--	Not Sampled
		Lower	T4RB-15L-OQ	--	Not Sampled
Berth 409	16	Upper	T4RB-16U	10/7/2020	--
		Lower	T4RB-16L	10/7/2020	Archived
		Lower	T4RB-16L-O52C	10/7/2020	0.447 U
		Lower	T4RB-16L-OO	10/7/2020	--
	17	Upper	T4RB-17U	10/8/2020	2.65 J
		Lower	T4RB-17L	10/8/2020	Archived
		Lower	T4RB-17L-ON	10/8/2020	--
Berth 408	18	Upper	T4RB-18U	10/5/2020	--
		Lower	T4RB-18L	10/5/2020	Archived
		Lower	T4RB-18L-OM	10/16/2020	Sampled as Sediment
	19	Upper	T4RB-19U	10/5/2020	--
		Lower	T4RB-19L	10/5/2020	0.446 U
	20	Upper	T4RB-20U	10/5/2020	--
		Lower	T4RB-20L	10/6/2020	--
	21	Upper	T4RB-21U	10/6/2020	0.445 U
		Lower	T4RB-21L	10/6/2020	--
		Lower	DUP-4 T4RB-21L	10/6/2020	--
	22	Upper	T4RB-22U	10/6/2020	--
		Lower	T4RB-22L	10/6/2020	--

Please see notes at end of table.

Table 10
Riverbank Soil Analytical Results - Tributyltin Ion
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Tributyltin Ion
Concentrations in µg/kg					
				CUL	3,080
				RAL	--
				PTW	--
South Side of Slip 1	23	Upper	T4RB-23U	9/28/2020	--
		Lower	T4RB-23L	9/28/2020	0.445 U
	24	Upper	T4RB-24U	9/28/2020	--
		Lower	T4RB-24L	9/28/2020	--
	25	Upper	T4RB-25U	9/28/2020	0.446 U
		Lower	T4RB-25L	9/28/2020	--
		Lower	DUP-1 T4RB-25L	9/28/2020	--
	26	Upper	T4RB-26U	9/28/2020	--
		Lower	T4RB-26L	9/28/2020	--
Riverside of Slip 1	27	Upper	T4RB-27U	9/28/2020	--
		Lower	T4RB-27L	9/28/2020	--
	28	Upper	T4RB-28U	9/29/2020	0.446 U
		Lower	T4RB-28L	9/29/2020	--
	29	Upper	T4RB-29U	9/29/2020	--
		Lower	T4RB-29L	9/29/2020	--
Head of Slip 3	40	--	T4RB-K1	10/8/2020	0.688 J
		--	T4RB-K2	10/8/2020	--
		--	T4RB-BEBRA	10/8/2020	--
	41	--	T4RB-OJ	10/9/2020	--

Please see notes at end of table.

Table 10
Riverbank Soil Analytical Results - Tributyltin Ion
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Area	Riverbank Cell	Unit	Sample Name	Sample Date	Tributyltin Ion
Concentrations in µg/kg					
				CUL	3,080
				RAL	--
				PTW	--
Former Berth 412	43	Upper	T4RB-43U	10/12/2020	--
		Lower	T4RB-43L	10/12/2020	--
	44	Upper	T4RB-44U-OD1	10/12/2020	--
		Upper	DUP-5 T4RB-44U-OD1	10/12/2020	--
		Upper	T4RB-44U	10/13/2020	Archived
		Lower	T4RB-44L	10/12/2020	0.449 U
	45	Upper	T4RB-45U-OD2	10/13/2020	--
		Upper	T4RB-45U-OD3	10/13/2020	--
		Upper	T4RB-45U	10/13/2020	Archived
		Lower	T4RB-45L	10/12/2020	--
	46	Upper	T4RB-46U	10/9/2020	0.446 U
		Lower	T4RB-46L	10/12/2020	--
	47	Upper	T4RB-47U	10/9/2020	--
		Lower	T4RB-47L	10/12/2020	--
Berth 414 (Riverside of Slip 3)	48	Upper	T4RB-48U	10/14/2020	--
		Lower	T4RB-48L	10/14/2020	--
	49	Upper	T4RB-49U	10/13/2020	--
		Lower	T4RB-49L	10/13/2020	0.445 U
	50	Upper	T4RB-50U	10/14/2020	--
		Lower	T4RB-50L	10/14/2020	--
	51	Upper	T4RB-51U	10/14/2020	0.449 U
		Lower	T4RB-51L	10/14/2020	--
		Lower	T4RB-51L-OD4	10/14/2020	--

Notes:

1. µg/kg = Micrograms per kilogram (parts per billion).
2. CUL = Cleanup Levels from the Portland Harbor Superfund Site Record of Decision for Riverbank Soil, Table 17 January 2020 Errata #2 update, (ROD, 2017).
3. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017).
4. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017).
5. Bolded values exceed Portland Harbor ROD Cleanup Level (CUL).
6. -- = Value not available or sample was not analyzed for tributyltin ion per sampling program.
7. DUP = Field duplicate.
8. U = Analyte was not detected.
9. J = Result is estimated.
10. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270E (µg/kg)									
Acenaphthene	72.2 U	75.9 U	93.3	75.0 U	75.6 UJ	75.0 UJ	86.2	--	--
Acenaphthylene	72.2 U	75.9 U	127	75.0 U	75.6 UJ	75.0 UJ	7.75 U	--	--
Anthracene	72.2 U	113	275	107	105 J	106 J	13.9	--	--
Benz(a)anthracene	311	158	577	467	462 J	465 J	46.9	--	--
Benzo(a)pyrene	411	239	877	681	693 J	687 J	41.0	--	--
Benzo(b)fluoranthene	370	215	753	675	664 J	670 J	50.4	--	--
Benzo(k)fluoranthene	184	124	321 J	283 J	300 J	292 J	21.8	--	--
Benzo(g,h,i)perylene	246	134	586	423	449 J	436 J	13.1	--	--
Chrysene	316	167	632	516	466 J	491 J	47.5	--	--
Dibenz(a,h)anthracene	72.2 U	75.9 U	74.6 U	75.0 U	75.6 UJ	75.0 UJ	7.75 U	--	--
Fluoranthene	634	440	1770	904	907 J	906 J	80.8	--	--
Fluorene	72.2 U	91.8	162	91.9	118 J	105 J	7.75 U	--	--
Indeno(1,2,3-cd)pyrene	239	110	504	399	411 J	405 J	14.6	--	--
2-Methylnaphthalene	145 U	152 U	150 U	151 U	152 UJ	151 UJ	15.6 U	--	--
Naphthalene	145 U	163	265	151 U	152 UJ	151 UJ	15.6 U	--	140,000
Phenanthrene	229	515	497	329	347 J	338 J	42.1	--	--
Pyrene	858	541	2,080	1,130	1,060 J	1,095 J	79.1	--	--
Total PAHs	3,910	3,120	9,630	6,120	6,100 J	6,110 J	549	30,000	--
cPAHs (BaP eq)	541	327	1,100	876	888 J	882 J	56.3	--	774,000
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)									
2-MonoCB-(1)	0.00023 JN	0.00081 J	0.00123 J	0.00232	0.00215	0.002235	0.00146 J	--	--
3-MonoCB-(2)	0.000391 J	0.00162 J	0.00131 J	0.00216	0.00164 J	0.0019 J	0.00113 J	--	--
4-MonoCB-(3)	0.000376 J	0.00157 J	0.0014 J	0.00271 J	0.0025 J	0.002605 J	0.00111 J	--	--
22'-DiCB-(4)	0.00035 U	0.00092 U	0.0018 U	0.0046 U	0.0048 U	0.0046 U	0.0027 U	--	--
2,3-DiCB-(5)	0.00015 U	0.00041 U	0.00012 U	0.00051 U	0.00042 U	0.00042 U	0.00007 U	--	--
2,3'-DiCB-(6)	0.00014 U	0.00039 U	0.00046 J	0.00097 J	0.0013 J	0.001135 J	0.000241 J	--	--
2,4-DiCB-(7)	0.00013 U	0.00037 U	0.0001 U	0.00046 U	0.00038 U	0.00038 U	0.000063 U	--	--
2,4'-DiCB-(8)	0.00053 J	0.00048 J	0.00165 J	0.00348 J	0.00448 J	0.00398 J	0.000358 J	--	--
2,5-DiCB-(9)	0.00016 U	0.00044 U	0.00012 U	0.00054 U	0.00044 U	0.00044 U	0.000075 U	--	--
2,6-DiCB-(10)	0.00053 U	0.0014 U	0.0027 U	0.0071 U	0.0073 U	0.0071 U	0.0041 U	--	--
3,3'-DiCB-(11)	0.00136 J	0.00198 J	0.00318 J	0.00367 J	0.0037 JN	0.003685 J	0.00124 J	--	--

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)									
DiCB-(12)+(13)	0.00015 U	0.00041 U	0.00032 JN	0.00092 J	0.0009 JN	0.00091 J	0.00047 JN	--	--
3,5-DiCB-(14)	0.00014 U	0.00039 U	0.00011 U	0.00048 U	0.0004 U	0.0004 U	0.000067 U	--	--
4,4'-DiCB-(15)	0.00080 JN	0.001 J	0.00233 J	0.00418 J	0.00477 J	0.004475 J	0.00039 JN	--	--
22'3-TriCB-(16)	0.00055 J	0.0011 U	0.00258 J	0.00252 J	0.00293 J	0.002725 J	0.00026 U	--	--
22'4-TriCB-(17)	0.00048 J	0.00067 U	0.00217	0.00212	0.00321	0.002665	0.00016 U	--	--
TriCB-(18)+(30)	0.00088 J	0.00094 J	0.00428 J	0.00393 J	0.0052	0.004565 J	0.00023 J	--	--
22'6-TriCB-(19)	0.00045 J	0.00043 U	0.00088 JN	0.00177 J	0.00257	0.00217 J	0.0001 U	--	--
TriCB-(20) + (28)	0.00289 J	0.0022 JN	0.0107	0.0171	0.0206	0.01885	0.00041 J	--	--
TriCB-(21)+(33)	0.00109 J	0.00141 J	0.00436 J	0.00519	0.00649	0.00584	0.00021 J	--	--
234'-TriCB-(22)	0.00072 J	0.00093 J	0.00306	0.00393	0.00479	0.00436	0.00011 U	--	--
235-TriCB-(23)	0.00013 U	0.00045 U	0.00015 U	0.00032 U	0.00027 U	0.00027 U	0.00011 U	--	--
236-TriCB-(24)	0.000099 U	0.00042 U	0.00014 U	0.00029 U	0.0003 U	0.00029 U	0.000099 U	--	--
23'4-TriCB-(25)	0.00023 J	0.00039 U	0.00064 J	0.00112 J	0.00125 J	0.001185 J	0.000099 U	--	--
TriCB-(26)+(29)	0.00044 J	0.0007 JN	0.00161 J	0.00235 J	0.00262 J	0.002485 J	0.00011 U	--	--
23'6-TriCB-(27)	0.00011 U	0.00045 U	0.00041 J	0.00032 U	0.00044 J	0.00044 J	0.00011 U	--	--
24'5-TriCB-(31)	0.00193 J	0.00246 J	0.00882	0.0107	0.0127	0.0117	0.00034 J	--	--
24'6-TriCB-(32)	0.00042 J	0.00043 U	0.00148 J	0.0014 JN	0.00213	0.001765 J	0.0001 U	--	--
23'5'-TriCB-(34)	0.00013 U	0.00043 U	0.00014 U	0.00031 U	0.00026 U	0.00026 U	0.00011 U	--	--
33'4-TriCB-(35)	0.00014 U	0.00046 U	0.00024 JN	0.00043 JN	0.00028 U	0.00043 J	0.00012 U	--	--
33'5-TriCB-(36)	0.00012 U	0.00039 U	0.00013 U	0.00028 U	0.00024 U	0.00024 U	0.000099 U	--	--
344'-TriCB-(37)	0.00138 J	0.00134 J	0.00425	0.00667	0.00794	0.007305	0.00022 U	--	--
345-TriCB-(38)	0.00014 U	0.00048 U	0.00016 U	0.00034 U	0.00029 U	0.00029 U	0.00012 U	--	--
34'5-TriCB-(39)	0.00012 U	0.00043 U	0.00014 U	0.00031 U	0.00025 U	0.00025 U	0.00011 U	--	--
TetraCB-(40)+(41)+(71)	0.00249 J	0.00163 J	0.00723 J	0.0098 J	0.0119	0.01085 J	0.00029 U	--	--
22'34'-TetraCB-(42)	0.00113 J	0.00096 U	0.00346 J	0.00511	0.00593	0.00552	0.0003 U	--	--
22'35-TetraCB-(43)	0.00026 U	0.001 U	0.0005 J	0.00037 U	0.00046 U	0.00037 U	0.00032 U	--	--
TetraCB-(44)+(47)+(65)	0.00558 J	0.0058 J	0.0159	0.0221	0.0236	0.02285	0.0008 J	--	--
TetraCB-(45)+(51)	0.00122 J	0.00091 U	0.00235 J	0.00268 J	0.00304 J	0.00286 J	0.00029 U	--	--
22'36'-TetraCB-(46)	0.00026 U	0.001 U	0.00082 J	0.00069 J	0.00093 J	0.00081 J	0.00032 U	--	--
22'45-TetraCB-(48)	0.00064 J	0.0009 U	0.00225 J	0.00224 J	0.00225 J	0.002245 J	0.00028 U	--	--
TetraCB-(49)+TetraCB-(69)	0.00300 J	0.00375 J	0.00937 J	0.0186	0.02	0.0193	0.00026 U	--	--

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)									
TetraCB-(50)+(53)	0.00105 J	0.00087 U	0.002 J	0.00222 J	0.00261 J	0.002415 J	0.00027 U	--	--
22'55'-TetraCB-(52)	0.00598	0.0148	0.0237	0.025	0.0277	0.02635	0.00057 J	--	--
22'66'-TetraCB-(54)	0.00041 U	0.0021 U	0.00064 U	0.0018 U	0.0025 U	0.0018 U	0.00036 U	--	--
233'4-TetraCB-(55)	0.00015 U	0.00073 U	0.00016 U	0.00035 U	0.00032 U	0.00032 U	0.00018 U	--	--
233'4'-Tetra CB(56)	0.00175 J	0.00256 J	0.00707	0.0104	0.0131	0.01175	0.00021 U	--	--
233'5-TetraCB-(57)	0.00015 U	0.00077 U	0.00017 U	0.00037 U	0.00034 U	0.00034 U	0.00019 U	--	--
233'5'-TetraCB-(58)	0.00016 U	0.00077 U	0.00017 U	0.00037 U	0.00034 U	0.00034 U	0.00019 U	--	--
TetraCB-(59)+(62)+(75)	0.00049 J	0.00069 U	0.00116 J	0.00144 J	0.00175 J	0.001595 J	0.00022 U	--	--
2344'-TetraCB -(60)	0.00065 J	0.00114 J	0.00386 J	0.00424 J	0.00566	0.00495 J	0.00021 U	--	--
TetraCB-(61)+(70)+(74)+(76)	0.00738 J	0.0218	0.0352	0.052	0.061	0.0565	0.00052 J	--	--
234'5-TetraCB-(63)	0.00015 U	0.00075 U	0.00067 J	0.00126 J	0.00115 J	0.001205 J	0.00018 U	--	--
234'6-TetraCB-(64)	0.00230 J	0.00241 J	0.00745	0.00802	0.00936	0.00869	0.00026 J	--	--
23'44'-TetraCB-(66)	0.00412 J	0.00642	0.0163	0.0322	0.0386	0.0354	0.00028 J	--	--
23'45-TetraCB-(67)	0.00014 U	0.00068 U	0.00043 J	0.00067 J	0.00046 J	0.000565 J	0.00017 U	--	--
23'45'-TetraCB-(68)	0.00017 J	0.00069 U	0.00021 J	0.00068 J	0.00089 J	0.000785 J	0.00017 U	--	--
23'55'-TetraCB-(72)	0.00015 U	0.00074 U	0.00025 J	0.00085 J	0.0011 J	0.000975 J	0.00018 U	--	--
23'5'6-TetraCB-(73)	0.00019 U	0.00072 U	0.00019 U	0.00026 U	0.00033 U	0.00026 U	0.00023 U	--	--
33'44'-TetraCB-(77)	0.00062 J	0.0014 U	0.00221 J	0.0031 J	0.00409 J+	0.003595 J	0.00034 U	--	--
33'45-TetraCB-(78)	0.00018 U	0.00089 U	0.00019 U	0.00043 U	0.00039 U	0.00039 U	0.00022 U	--	--
33'45'-TetraCB(79)	0.00015 U	0.00077 U	0.00042 J	0.00094 J	0.00089 J	0.000915 J	0.00019 U	--	--
33'55'-TetraCB-(80)	0.00013 U	0.00066 U	0.00014 U	0.00032 U	0.00029 U	0.00029 U	0.00016 U	--	--
344'5-TetraCB-(81)	0.00028 U	0.0014 U	0.0003 U	0.00066 U	0.00061 U	0.00061 U	0.00034 U	--	--
22'33'4-PentaCB-(82)	0.00130 J	0.00378 J	0.00455 J	0.0066	0.00741	0.007005	0.00042 U	--	--
PentaCB-(83)+(99)	0.00678 J	0.0169	0.0197	0.0453	0.0547	0.05	0.0004 U	--	--
22'33'6-PentaCB-(84)	0.00273	0.00547	0.00989	0.0131	0.0143	0.0137	0.00047 J	--	--
PentaCB-(85)+(116)+(117)	0.00157 J	0.00432 J	0.00584 J	0.00795 J	0.00788 J	0.007915 J	0.00032 U	--	--
PentaCB-(86)(87)(97)(109)(119)(125)	0.00640 J	0.0197 J	0.0265	0.0398	0.0478	0.0438	0.00033 U	--	--
PentaCB-(88)+(91)	0.00198 J	0.00314 J	0.0045 JN	0.00982	0.0103	0.01006	0.00037 U	--	--
22'346'-PentaCB-(89)	0.00059 U	0.00086 U	0.00026 U	0.00059 U	0.00054 U	0.00054 U	0.0004 U	--	--
PentaCB-(90)+(101)+(113)	0.01170 J	0.034	0.0475	0.0778	0.105	0.0914	0.00099 J	--	--

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)									
22'355'-PentaCB-(92)	0.00263 J	0.0056	0.00779	0.0147	0.0202	0.01745	0.00038 U	--	--
PentaCB-(93)+(98)+(100)+(102)	0.00054 U	0.00078 U	0.00153 J	0.00278 J	0.00328 J	0.00303 J	0.00036 U	--	--
22'356'-PentaCB-(94)	0.00057 U	0.00083 U	0.00025 U	0.00057 U	0.00052 U	0.00052 U	0.00039 U	--	--
22'35'6-PentaCB-(95)	0.00991	0.0179	0.0355	0.0469	0.0614	0.05415	0.00154 J	--	--
22'366'-PentaCB-(96)	0.00062 U	0.0031 U	0.00048 U	0.0011 U	0.0016 U	0.0011 U	0.00056 U	--	--
22'45'6-PentaCB-(103)	0.00048 U	0.0007 U	0.00037 J	0.00099 J	0.00158 J	0.001285 J	0.00033 U	--	--
22'466'-PentaCB-(104)	0.00029 U	0.0014 U	0.00022 U	0.00052 U	0.00072 U	0.00052 U	0.00026 U	--	--
233'44'-PentaCB-(105)	0.00461 J	0.0185	0.0188	0.0315	0.0351	0.0333	0.00054 J	--	--
233'45-PentaCB-(106)	0.00024 U	0.0006 U	0.00016 U	0.00022 U	0.00035 U	0.00022 U	0.00011 U	--	--
233'4'5-PentaCB-(107)	0.00092 J	0.00297 J	0.00284 J	0.00726	0.00927	0.008265	0.00012 U	--	--
PentaCB-(108)+(124)	0.00043 J	0.00162 J	0.00151 J	0.00268 J	0.00309 J	0.002885 J	0.00012 U	--	--
PentaCB-(110)+(115)	0.01660	0.0383	0.0561	0.0952	0.119	0.1071	0.00256 J	--	--
233'55'-PentaCB-(111)	0.00042 U	0.00061 U	0.00019 U	0.00042 U	0.00039 U	0.00039 U	0.00029 U	--	--
233'56-PentaCB-(112)	0.00039 U	0.00056 U	0.00017 U	0.00039 U	0.00035 U	0.00035 U	0.00026 U	--	--
2344'5-PentaCB-(114)	0.00036 U	0.00107 J	0.00119 J	0.0017 J	0.00207 J	0.001885 J	0.00017 U	--	--
23'44'5-PentaCB-(118)	0.01140	0.0467	0.0482	0.101	0.122	0.1115	0.00109	--	--
23'455'-PentaCB-(120)	0.00042 U	0.00062 U	0.00019 U	0.00042 U	0.0009 J	0.0009 J	0.00029 U	--	--
23'45'6-PentaCB-(121)	0.00040 U	0.00058 U	0.00018 U	0.0004 U	0.00037 U	0.00037 U	0.00027 U	--	--
233'4'5'-PentaCB-(122)	0.00029 U	0.00073 U	0.00083 J	0.00137 J	0.00159 J	0.00148 J	0.00014 U	--	--
23'44'5'-PentaCB-(123)	0.00039 U	0.00099 U	0.00081 J	0.00147 J	0.00086 J	0.001165 J	0.00018 U	--	--
33'44'5-PentaCB-(126)	0.00034 U	0.00086 U	0.00023 U	0.00032 U	0.0005 U	0.00032 U	0.00016 U	--	--
33'455'-PentaCB-(127)	0.00029 U	0.00073 U	0.0002 U	0.00027 U	0.00043 U	0.00027 U	0.00014 U	--	--
HexaCB-(128)+(166)	0.00314 J	0.00848 J	0.00909 J	0.0175	0.0192	0.01835	0.00059 J	--	--
HexaCB-(129)+(138)+(163)	0.02660	0.0591	0.0803	0.148	0.195	0.1715	0.00372 J	--	--
22'33'45'-HexaCB-(130)	0.00164 J	0.0022 J	0.00371 J	0.0077	0.00989	0.008795	0.00039 U	--	--
22'33'46-HexaCB-(131)	0.00077 U	0.0011 U	0.00082 J	0.0014 J	0.00158 J	0.00149 J	0.00036 U	--	--
22'33'46'-HexaCB-(132)	0.00765	0.012 JN	0.0238	0.0406	0.0543	0.04745	0.00133 J	--	--
22'33'55'-HexaCB-(133)	0.00067 U	0.00097 U	0.00091 J	0.00226 J	0.00282 J	0.00254 J	0.00032 U	--	--
HexaCB-(134)+(143)	0.00087 J	0.0025 J	0.00245 J	0.00538 J	0.00726 J	0.00632 J	0.00038 U	--	--

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)									
HexaCB-(135)+(151)	0.00789 J	0.0131 J	0.0229	0.0356	0.0562	0.0459	0.00109 J	--	--
22'33'66'-HexaCB-(136)	0.00285 J	0.0044 J	0.0081	0.0108	0.0164	0.0136	0.0005 U	--	--
22'344'5-HexaCB-(137)	0.00079 U	0.0015 J	0.0015 JN	0.00449 J	0.00446 J	0.004475 J	0.00038 U	--	--
HexaCB-(139)+(140)	0.00060 U	0.00087 U	0.00077 J	0.0015 JN	0.00211 J	0.001805 J	0.00028 U	--	--
22'3455'-HexaCB-(141)	0.00420 J	0.00975	0.0134	0.0214	0.0312	0.0263	0.0005 J	--	--
22'3456-HexaCB-(142)	0.00070 U	0.001 U	0.00033 U	0.00059 U	0.0006 U	0.00059 U	0.00033 U	--	--
22'345'6-HexaCB-(144)	0.00099 J	0.0028 U	0.00317 J	0.0039 J	0.0065	0.0052 J	0.0007 U	--	--
22'3466'-HexaCB-(145)	0.00059 U	0.002 U	0.00047 U	0.0014 U	0.0017 U	0.0014 U	0.00049 U	--	--
22'34'55'-HexaCB-(146)	0.00410 J	0.00702	0.00928	0.0204	0.0294	0.0249	0.0005 J	--	--
HexaCB-(147)+(149)	0.02040	0.0418	0.0629	0.108	0.16	0.134	0.00312 J	--	--
22'34'56'-HexaCB-(148)	0.00079 U	0.0027 U	0.00062 U	0.0019 U	0.0023 U	0.0019 U	0.00066 U	--	--
22'34'66'-HexaCB-(150)	0.00057 U	0.0019 U	0.00045 U	0.0013 U	0.0016 U	0.0013 U	0.00047 U	--	--
22'3566'-HexaCB-(152)	0.00055 U	0.0019 U	0.00044 U	0.0013 U	0.0016 U	0.0013 U	0.00046 U	--	--
HexaCB-(153)+(168)	0.02140	0.0506	0.0637	0.12	0.17	0.145	0.00207 J	--	--
22'44'56'-HexaCB-(154)	0.00067 U	0.0023 U	0.00053 U	0.0016 J	0.0024 J	0.002 J	0.00056 U	--	--
22'44'66'-HexaCB-(155)	0.00041 U	0.0014 U	0.00032 U	0.00096 U	0.0012 U	0.00096 U	0.00034 U	--	--
HexaCB-(156)+(157)	0.00224 J	0.0083 J	0.0084 J	0.0153	0.0171	0.0162	0.00041 J	--	--
233'44'6-HexaCB-(158)	0.00235 J	0.00546	0.00613	0.0116	0.013 JN	0.0123 J	0.00036 J	--	--
233'455'-HexaCB-(159)	0.00045 U	0.0011 U	0.00068 J	0.00158 J	0.00207 J	0.001825 J	0.00026 U	--	--
233'456-HexaCB-(160)	0.00055 U	0.00079 U	0.00026 U	0.00046 U	0.00047 U	0.00046 U	0.00026 U	--	--
233'45'6-HexaCB-(161)	0.00050 U	0.00072 U	0.00024 U	0.00042 U	0.00043 U	0.00042 U	0.00023 U	--	--
233'4'55'-HexaCB-(162)	0.00042 U	0.001 U	0.00022 U	0.0005 J	0.00045 J	0.000475 J	0.00025 U	--	--
233'4'5'6-HexaCB-(164)	0.00175 J	0.00391 J	0.00502	0.00866	0.0119	0.01028	0.00041 J	--	--
233'55'6-HexaCB-(165)	0.00054 U	0.00077 U	0.00026 U	0.00045 U	0.00046 U	0.00045 U	0.00025 U	--	--
23'44'55'-HexaCB-(167)	0.00089 J	0.0024 J	0.00291 J	0.00578	0.00648	0.00613	0.00038 U	--	--
33'44'55'-HexaCB-(169)	0.00068 U	0.0017 U	0.00035 U	0.00075 U	0.0007 U	0.0007 U	0.0004 U	--	--
22'33'44'5-HeptaCB-(170)	0.00695	0.021	0.0222	0.0386	0.0548	0.0467	0.00119 J	--	--
HeptaCB-(171)+(173)	0.00212 J	0.0063 J	0.00607 J	0.0113	0.0156	0.01345	0.00046 U	--	--
22'33'455'-HeptaCB-(172)	0.00149 J	0.0059	0.00383 J	0.00719	0.00994	0.008565	0.00053 U	--	--
22'33'456'-HeptaCB-(174)	0.00605	0.0259	0.0184	0.0387	0.0576	0.04815	0.001 J	--	--
22'33'45'6-HeptaCB-(175)	0.00068 U	0.0015 U	0.00082 J	0.0016 J	0.00197 J	0.001785 J	0.00052 U	--	--
22'33'466'-HeptaCB-(176)	0.00086 J	0.0026 J	0.00254 J	0.00418 J	0.00612	0.00515 J	0.00036 U	--	--

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Polychlorinated Biphenyl Congeners (PCBs) by EPA Method 1668C (ng/g)									
22'33'45'6'-HeptaCB-(177)	0.00457 J	0.0137	0.013	0.0238	0.0362	0.03	0.0008 J	--	--
22'33'55'6-HeptaCB-(178)	0.00155 J	0.0068	0.00382 J	0.00713	0.0107	0.008915	0.00052 U	--	--
22'33'566'-HeptaCB-(179)	0.00290 J	0.0099	0.00794	0.0125	0.0194	0.01595	0.00042 J	--	--
HeptaCB-(180)+(193)	0.01650	0.0702	0.0519	0.0936	0.138	0.1158	0.00293 J	--	--
22'344'56-HeptaCB-(181)	0.00056 U	0.0012 U	0.00031 U	0.00051 U	0.00064 U	0.00051 U	0.00045 U	--	--
22'344'56'-HeptaCB-(182)	0.00065 U	0.0014 U	0.00046 U	0.00081 U	0.00094 U	0.00081 U	0.00049 U	--	--
22'344'5'6-HeptaCB-(183)	0.00466 J	0.0236	0.0134	0.0283	0.0411	0.0347	0.00077 J	--	--
22'344'66'-HeptaCB-(184)	0.00043 U	0.00095 U	0.00031 U	0.00054 U	0.00063 U	0.00054 U	0.00033 U	--	--
22'3455'6-HeptaCB-(185)	0.00050 U	0.0011 U	0.00028 U	0.00046 U	0.00058 U	0.00046 U	0.00041 U	--	--
22'34566'-HeptaCB-(186)	0.00049 U	0.0011 U	0.00035 U	0.00062 U	0.00072 U	0.00062 U	0.00037 U	--	--
22'34'55'6-HeptaCB-(187)	0.00874	0.0323	0.0214	0.0387	0.0568	0.04775	0.00143 J	--	--
22'34'566'-HeptaCB-(188)	0.00050 U	0.0011 U	0.00036 U	0.00062 U	0.00072 U	0.00062 U	0.00038 U	--	--
233'44'55'-HeptaCB-(189)	0.00052 U	0.0014 U	0.00087 JN	0.00179 J	0.00217 J	0.00198 J	0.00028 U	--	--
233'44'56-HeptaCB-(190)	0.00137 J	0.0049 J	0.00425 J	0.00837	0.0119	0.010135	0.00049 U	--	--
233'44'5'6-HeptaCB-(191)	0.00048 U	0.001 U	0.00114 J	0.0019 J	0.00261 J	0.002255 J	0.00039 U	--	--
233'455'6-HeptaCB-(192)	0.00050 U	0.0011 U	0.00028 U	0.00046 U	0.00058 U	0.00046 U	0.00041 U	--	--
22'33'44'55'-OctaCB-(194)	0.00370 J	0.0544	0.0121	0.0218	0.0293	0.02555	0.0008 J	--	--
22'33'44'56-OctaCB-(195)	0.00176 J	0.0132	0.00417 J	0.00823	0.0112	0.009715	0.00047 U	--	--
22'33'44'56'-OctaCB-(196)	0.00180 JN	0.0514	0.00587	0.0114	0.0158	0.0136	0.00091 U	--	--
22'33'44'66'OctaCB-(197)	0.00056 U	0.0015 U	0.00041 J	0.00067 U	0.0009 J	0.0009 J	0.00051 U	--	--
OctaCB-(198)+(199)	0.00473 J	0.323	0.0113	0.0256	0.0332	0.0294	0.00084 J	--	--
22'33'4566'-OctaCB-(200)	0.00053 U	0.0062	0.00119 J	0.00233 J	0.00294 J	0.002635 J	0.00049 U	--	--
22'33'45'66'-OctaCB-(201)	0.00053 U	0.015	0.00126 J	0.00281 J	0.00348 J	0.003145 J	0.00049 U	--	--
22'33'55'66'-OctaCB-(202)	0.00115 J	0.11	0.00243 J	0.00595 J	0.00735 J	0.00665 J	0.00054 U	--	--
22'344'55'6-OctaCB-(203)	0.00291 J	0.11	0.00652	0.0141	0.0184	0.01625	0.00078 U	--	--
22'344'566'-OctaCB-(204)	0.00055 U	0.0015 U	0.00038 U	0.00066 U	0.0006 U	0.0006 U	0.0005 U	--	--
233'44'55'6-OctaCB-(205)	0.00050 U	0.0035 J	0.00055 J	0.00138 J	0.00166 J	0.00152 J	0.00047 U	--	--
22'33'44'55'6-NonaCB-(206)	0.00434 J	2.62	0.00769	0.0329	0.0411	0.037	0.00062 U	--	--
22'33'44'566'-NonaCB-(207)	0.00054 U	0.123	0.00069 U	0.00258 J	0.00302 J	0.0028 J	0.00049 U	--	--
22'33'455'66'-NonaCB-(208)	0.00157 J	1.19	0.00231 J	0.0126	0.0155	0.01405	0.00065 U	--	--
DecaCB-(209)	0.00490 J	4.01	0.0093	0.0378	0.0497	0.04375	0.0016 U	--	--
Total PCB	0.327	9.38	1.06	1.89	2.48	2.18	0.0435	75	200

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Dioxins/Furans by EPA Method 1613B (pg/g)									
2,3,7,8-Tetra CDD	0.117 U	--	--	0.115 U	0.112 U	0.112 U	0.114 U	0.6	10
1,2,3,7,8-Penta CDD	0.204 J	--	--	0.229 J	0.298 J	0.264 J	0.115 U	0.8	10
1,2,3,4,7,8-Hexa CDD	0.228 JN	--	--	0.225 JN	0.241 JN	0.233 J	0.106 U	--	--
1,2,3,6,7,8-Hexa CDD	1.80 J	--	--	1.67 J+	1.63 J	1.65 J	1.37 J+	--	--
1,2,3,7,8,9-Hexa CDD	0.751 J	--	--	0.745 J	0.840 JN	0.793 J	0.305 J	--	--
1,2,3,4,6,7,8-Hepta CDD	59.0	--	--	78.6	76.7	77.7	34.4	--	--
Octa CDD	560	--	--	691	613	652	318	--	--
2,3,7,8-Tetra CDF	0.114 U	--	--	0.232 J	0.280 J	0.256 J	0.243 J	--	600
1,2,3,7,8-Penta CDF	0.107 U	--	--	0.221 J	0.231 J	0.226 J	0.597 JN	--	--
2,3,4,7,8-Penta CDF	0.222 J	--	--	0.349 J	0.394 J	0.372 J	3.19 J	200	200
1,2,3,4,7,8-Hexa CDF	1.19 J	--	--	2.23 J	2.56 J	2.395 J	13.3	--	40
1,2,3,6,7,8-Hexa CDF	0.278 J	--	--	0.462 J	0.503 J	0.483 J	1.79 J	--	--
2,3,4,6,7,8-Hexa CDF	0.187 J	--	--	0.222 J	0.253 JN	0.238 J	0.710 J	--	--
1,2,3,7,8,9-Hexa CDF	0.118 U	--	--	0.117 U	0.103 U	0.103 U	0.113 U	--	--
1,2,3,4,6,7,8-Hepta CDF	4.59 J	--	--	9.60	8.05	8.83	13.0	--	--
1,2,3,4,7,8,9-Hepta CDF	0.462 J	--	--	0.894 J	0.882 J	0.888 J	2.10 J	--	--
Octa CDF	10.1 U	--	--	39.1	23.1	31.1	15.3	--	--
Total TEQ	1.58	--	--	2.09	2.16	2.12	3.40	--	--

Please see notes at end of table.

Table 11
Surface Sediment Analytical Results
Terminal 4 Riverbank Characterization
Portland, Oregon

Location ID	SG04	SG05	SG06	SG07	SG07 DUP (DUP-6)	SG07 *	T4RB-18L-OM	RAL	PTW
Sample Date	10/15/2020	10/15/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020	10/16/2020		
Conventional Parameters									
Grain Size (% of total)									
Gravel (>2.00mm)	0.23	0.94	3.37	2.46	6.03	4.25	3.35	--	--
Sand (0.063mm - 2.00mm)	97.9	85.1	58.9	72.6	69.0	70.80	56.5	--	--
Silt (0.005mm < 0.063mm)	0.50	9.00	29.1	20.2	20.1	20.15	24.8	--	--
Clay (< 0.005 mm)	1.40	4.90	8.60	4.80	4.90	4.85	15.3	--	--
% Retained 4.75 mm sieve (#4)	0.01 U	0.61	2.80	1.97	5.50	3.74	3.09	--	--
% Retained 2.00 mm sieve (#10)	0.23	0.32	0.57	0.48	0.54	0.51	0.26	--	--
% Retained 0.85 mm sieve (#20)	2.21	0.59	1.79	1.24	1.11	1.18	0.78	--	--
% Retained 0.425 mm sieve (#40)	28.7	16.4	7.38	15.8	15.0	15.40	5.54	--	--
% Retained 0.250 mm sieve (#60)	55.6	47.4	8.55	36.3	34.7	35.50	16.8	--	--
% Retained 0.150 mm sieve (#100)	10.1	17.2	11.4	12.3	11.3	11.80	13.0	--	--
% Retained 0.106 mm sieve (#140)	0.83	1.94	12.2	3.50	3.38	3.44	9.17	--	--
% Retained 0.075 mm sieve (#200)	0.31	0.99	12.1	2.36	2.29	2.33	7.82	--	--
% Retained 0.063 mm sieve (#230)	0.10	0.57	5.55	1.15	1.17	1.16	3.31	--	--
Total Solids (%)	73.2	68.4	69.1	69.1	68.4	68.8	68.3	--	--
Total Organic Carbon (mg/kg)	720	9,000	3,600	4,700	4,600	4,650	4,000	--	--

Notes:

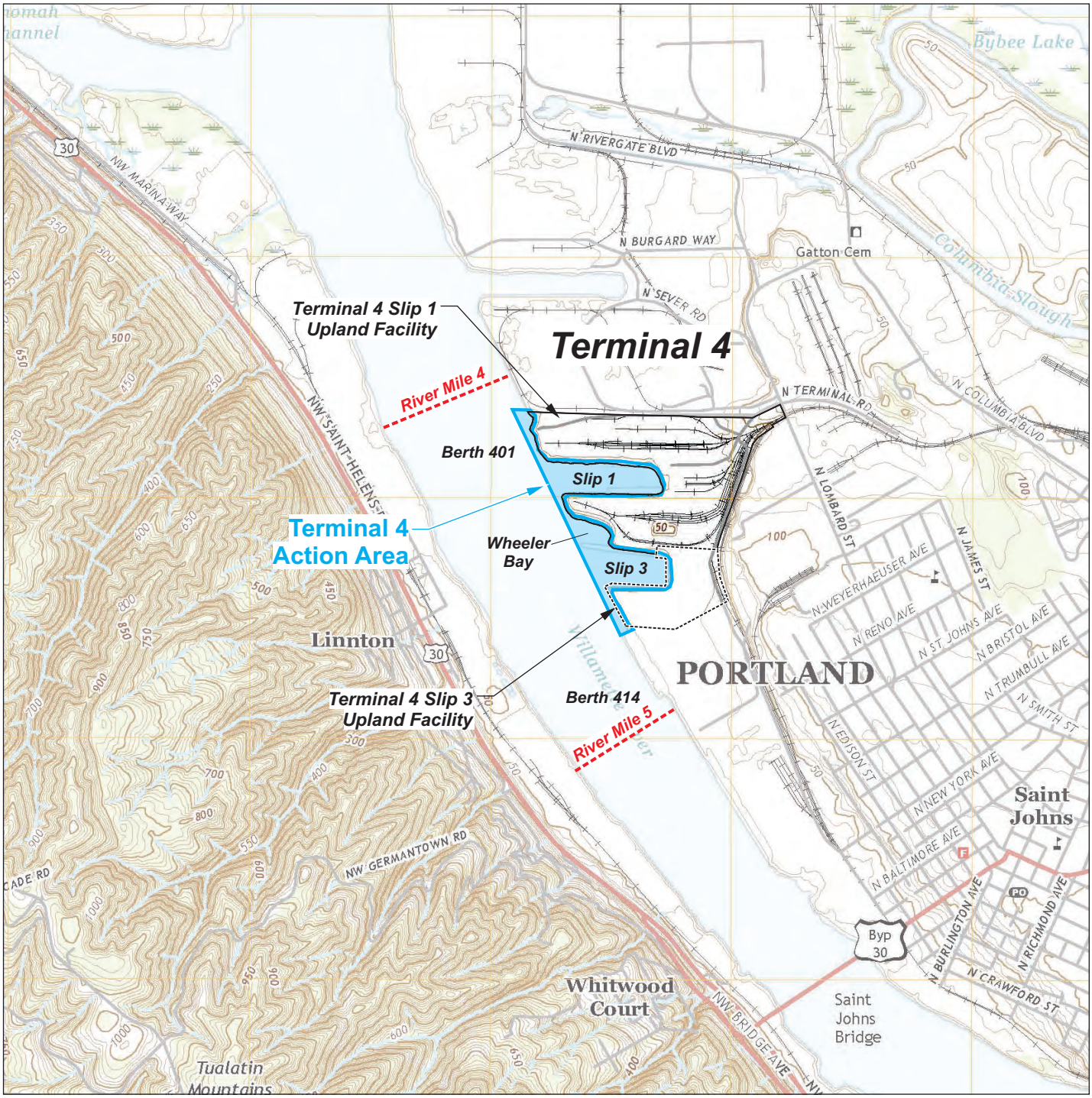
1. µg/kg = Micrograms per kilogram (parts per billion).
2. ng/g = Nanograms per gram (parts per billion).
3. pg/g = Picograms per gram (parts per trillion).
4. RAL = Remedial Action Levels from the Portland Harbor Superfund Site ROD (2017) as updated by the Explanation of Significant Differences (ESD, 2019).
5. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site ROD (2017) as updated by the Explanation of Significant Differences (ESD, 2019).
6. Bolded values exceed Portland Harbor ROD Cleanup Level (RAL).
7. Shaded values exceed Portland Harbor ROD Principal Threat Waste threshold (PTW).
8. -- = Value not available.
9. DUP = Field duplicate.
10. U = Analyte was not detected.
11. J = Result is estimated.
12. JN = The analyte was tentatively identified and did not meet method criteria for confirmation. The reported result is an estimated maximum possible concentration (EMPC).
13. UJ = The analyte was analyzed for but was not detected. However, the detection limit may be inaccurate or imprecise.
14. J+ = Result is an estimated value and may be biased high.
15. * = Sample results are statistically adjusted using data from the primary and field duplicate samples.

Table 12
Probabilistic Riverbank Soil Summary Screening Table
Terminal 4 Riverbank Characterization
Portland, Oregon

Potential Portland Harbor Chemical of Concern[1]	Screening Value	Screening Value Type	Units	All Areas											
				Number of Reported Results	Number of Detected Results	Number of Detected Exceedances	Frequency of Detected Exceedance (%)	Number of ND Results	Number of ND Exceedances	Frequency of ND Exceedance (%)	Total Frequency of Exceedances (%)	Mean Detected Exceedance Factor	Minimum Detected Exceedance Factor	Maximum Detected Exceedance Factor
1,2,3,4,7,8-Hexa CDF	40	PTW	pg/g	45	43	11	26%	2	0	NE	24%	4.1	1.4	6.8
1,2,3,7,8-Penta CDD	0.8	RAL	pg/g	45	29	12	41%	16	0	NE	27%	22	1.0	108
1,2,3,7,8-Penta CDD	10	PTW	pg/g	45	29	3	10%	16	0	NE	NE	6.0	3.4	8.6
2,3,4,7,8-Penta CDF	200	RAL	pg/g	45	35	0	NE	10	0	NE	NE	NE	NE	NE
2,3,7,8-Tetra CDD	0.6	RAL	pg/g	45	15	4	27%	30	1	3%	11%	8.8	1.8	16
2,3,7,8-Tetra CDF	600	PTW	pg/g	45	31	0	NE	14	0	NE	NE	NE	NE	NE
Total PAHs	30,000	RAL	µg/kg	41	40	4	10%	1	0	NE	10%	3.3	2.0	5.6
cPAHs (BaP Eq)	774,000	PTW	µg/kg	41	40	0	NE	1	0	NE	NE	NE	NE	NE
Total PCBs	75	RAL	µg/kg	36	19	5	26%	17	0	NE	14%	1.7	1.1	2.4
Total DDx	160	RAL	µg/kg	20	8	2	25%	12	0	NE	10%	3.1	2.2	3.9
Chlorobenzene	320	PTW	µg/kg	16	0	0	ND	16	0	NE	NE	ND	ND	ND

Notes:

1. COCs were derived from Table 17 of the Portland Harbor Record of Decision (EPA 2017) and USEPA's *Explanation of Significant Differences, Portland Harbor Superfund Site* (EPA 2019). Only COCs with associated RALs or PTWs were included in this summary.
2. Shaded values indicate that the frequency of exceedance is great than 5 percent.
3. NE = No exceedance.
4. ND = Not detected.
5. RAL = Remedial Action Levels from the Portland Harbor Superfund Site Explanation of Significant Differences (ESD, 2019).
6. PTW = Principal Threat Waste threshold from the Portland Harbor Superfund Site Explanation of Significant Differences (ESD, 2019).
7. pg/g = Picograms per gram (parts per trillion).
8. µg/kg = Micrograms per kilogram (parts per billion).
9. COC = Chemical of concern.
10. Exceedance factors calculated from detected results that are greater than the screening value.



Note: Base map prepared from USGS 7.5-minute quadrangle of Linnton, OR, dated 2020 as provided by USGS.gov.





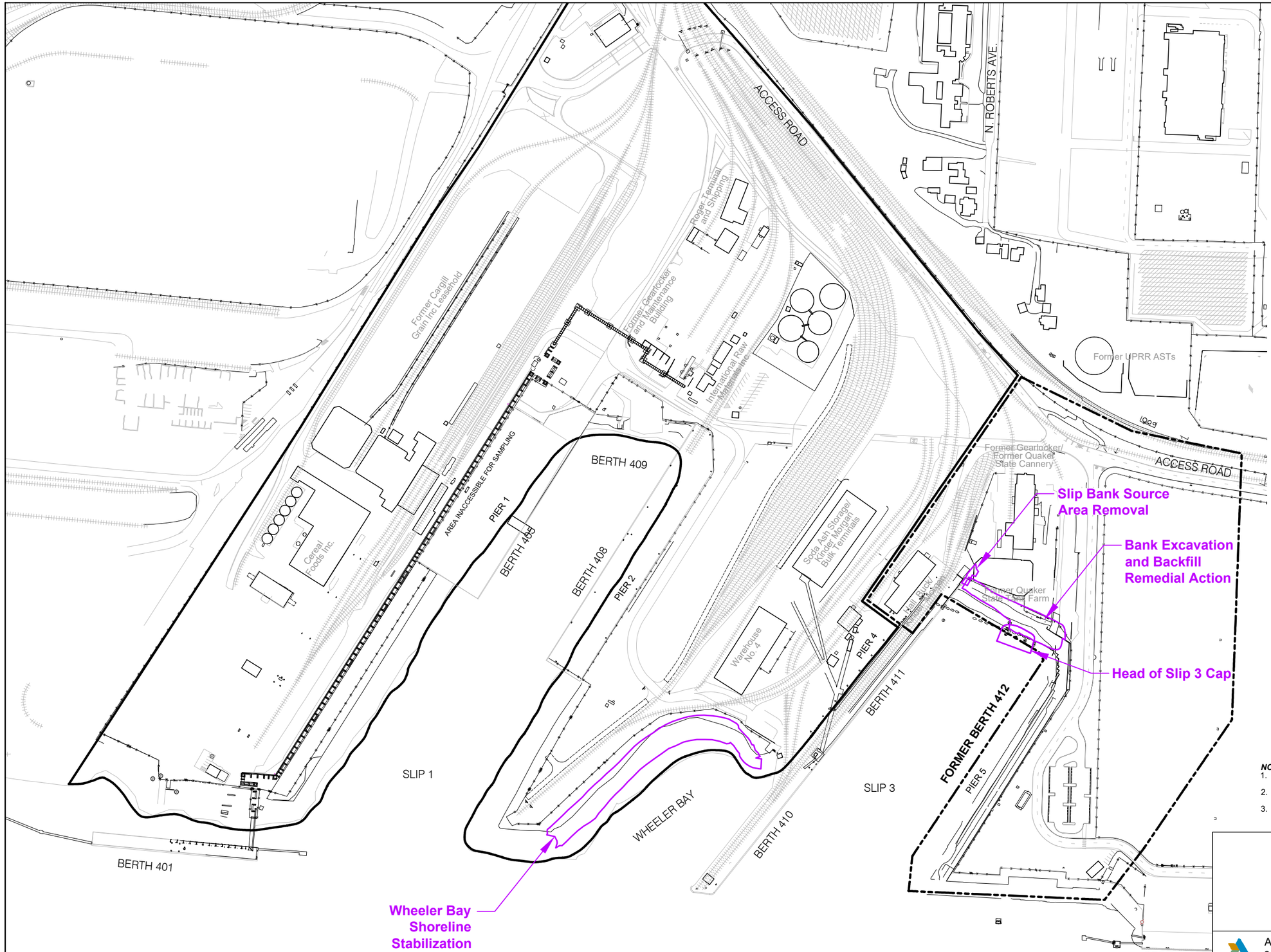
0 2,000 4,000

Approximate Scale in Feet

Facility Location Map

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number: 320002372-08	Drawn: JP	Approved: HFC	Figure 1
	December 2021			



NOTES:

1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Facility Plan

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number: 320002372-08	Drawn: JP	Approved: HFC	Figure 2
	December 2021			



Legend:

Top of Bank

Bottom of Bank

Riverbank Physical Characterizations:

Potentially Erodible - Sandy Soils Appear to be in Equilibrium (Slope Flatter than Approximately 6H:1V), Below Ordinary High Water Line, or Above Intact Retaining Structures - Further Evaluation will be Completed During Remedial Design

Stable - Rip Rap (Vegetation in Rip Rap Areas Not Shown)

Stable - Vegetated

Pier Structure

Completed Source Control Stabilization

Wood Retaining Structure

Concrete, Steel, or Rock Gabion Retaining Structure

Potentially Erodible - Sandy Surface Little or No Vegetation, Oversteepened Slope - Further Evaluation will be Completed During Remedial Design

NOTE: *See Appendix G and L for Bank Erosion Hazard Index information.*

NOTES:

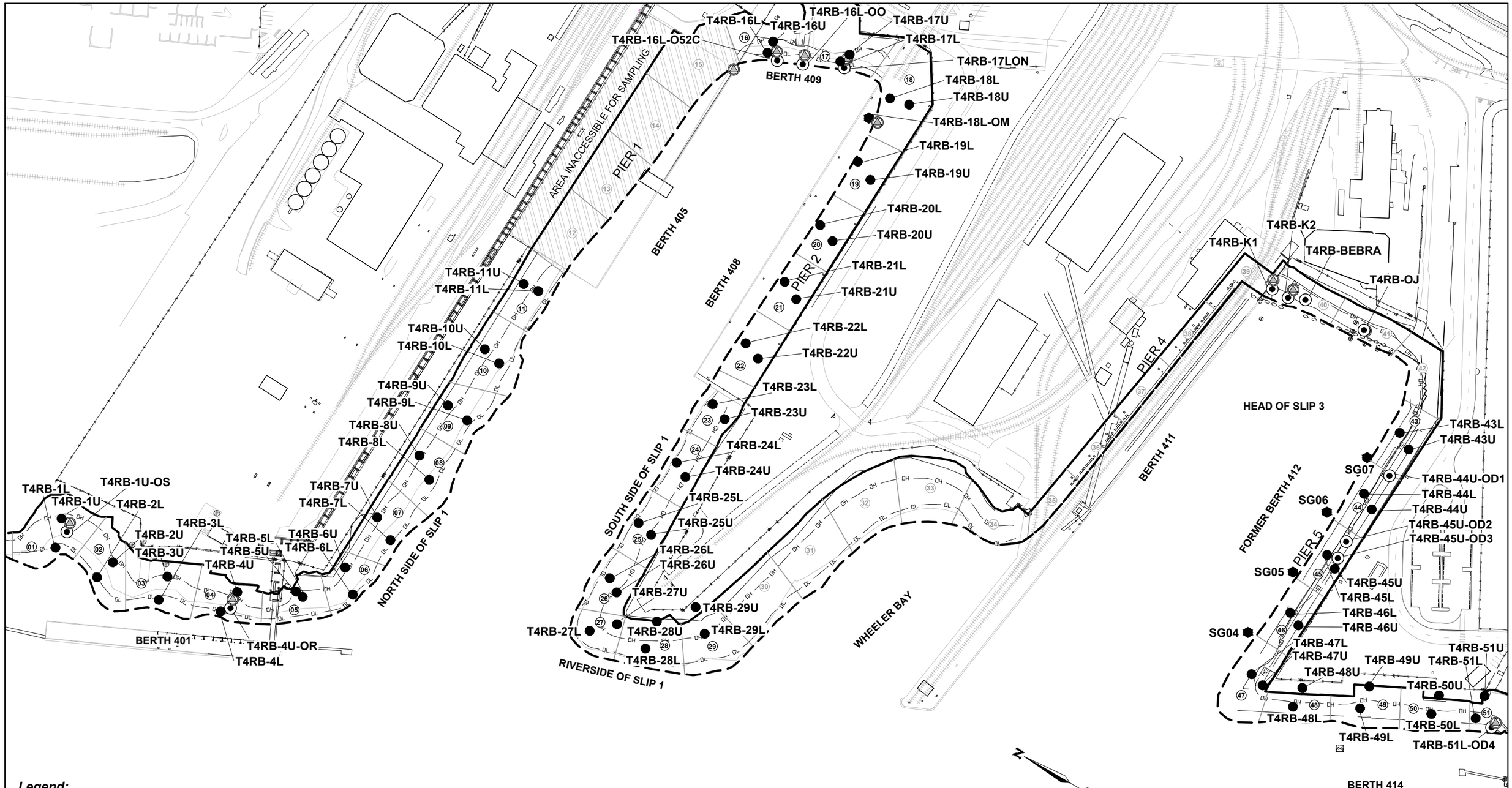
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Physical Characterization Summary

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	3
December 2021			



Legend:

- Outfall Location
- Judgmental Soil Sample Location
- T4RB-2L — Probabilistic Soil Sample Location (Apex)
- SG06 — Sediment Sample Location (Apex)
- Top of Bank
- Bottom of Bank
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- DH — Ordinary High Water
- DL — Ordinary Low Water

N

0 200 400

Scale in Feet

NOTES:

1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Soil and Surface Sediment Sampling Locations

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	4

December 2021

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	91
RAL	Remedial Action Level	NA
PTW	Principal Threat Waste	NA
TPH = Total Petroleum Hydrocarbons		
DL = Detection Limit		
J = Estimated Value		
UJ = Estimated Non-Detect		
NA = Not Available		

T4RB-16L-O52C <13.7
T4RB-16U 15.1J
T4RB-16L-OO <12.7
T4RB-17U <287UJ
T4RB-17L-ON <42.5
BERTH 409
T4RB-18U <11.2
T4RB-19L <10.3
T4RB-19U 93.5J
T4RB-20L <10.4
T4RB-20U 16.9J
T4RB-21L <10.6
T4RB-21U 12.3J
T4RB-22L <10.2
T4RB-22U <9.79
T4RB-23L <10.2
T4RB-23U <10.6
T4RB-24L <11.7
T4RB-24U <10.1
T4RB-25L <12.4
T4RB-25U <9.77
T4RB-26L <11.0
T4RB-26U <10.1
T4RB-27U 49.2J
T4RB-27L <11.9
T4RB-28U <12.2
T4RB-28L <10.7
T4RB-29U <22.0
T4RB-29L <11.1
T4RB-11U <10.4
T4RB-11L <10.0
T4RB-10U <10.4
T4RB-10L <10.4
T4RB-9U <10.7
T4RB-9L <11.3
T4RB-8U <10.1
T4RB-8L <12.5
T4RB-7U <10.2
T4RB-7L <12.3
T4RB-5U <11.0
T4RB-5L <11.0
T4RB-3L <11.6
T4RB-3U <10.7
T4RB-2L <13.1
T4RB-2U <10.3
T4RB-1L <12.2
T4RB-1U-OS 169J
T4RB-4U-OR <10.2
T4RB-4L <12.7
T4RB-6U <10.5
T4RB-K2 <11.9
T4RB-K1 <285UJ
T4RB-BEBRA <10.8
T4RB-OJ 24.3J
HEAD OF SLIP 3
T4RB-43L 149J
T4RB-43U <101
T4RB-44U-OD1 <10.4
T4RB-44L <13.0
T4RB-45U-OD2 <10.5
T4RB-45L <11.0
T4RB-45U-OD3 15.2J
T4RB-46L <10.7
T4RB-46U 90.7J
T4RB-51U <10.2
T4RB-49U <10.8
T4RB-48U <199UJ
T4RB-47L <10.8
T4RB-47U <9.90
T4RB-49L <11.0
T4RB-50U <10.9
T4RB-50L <11.1
T4RB-51L <10.5
T4RB-48L <10.5
T4RB-51L-OD4 <10.8
BERTH 411
BERTH 405
BERTH 408
BERTH 401
PIER 1
PIER 2
PIER 4
PIER 5
AREA INACCESSIBLE FOR SAMPLING
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
FORMER BERTH 412

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - TPH Diesel

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	5
December 2021			

Screening Criteria in Micrograms per Kilogram (µg/kg)		
CUL	Cleanup Level	23,000
RAL	Remedial Action Level	30,000
PAHs = Polycyclic Aromatic Hydrocarbons		
DL = Detection Limit		
J = Estimated Value		

T4RB-16L-O52C 2,400
T4RB-16U 14,600
T4RB-16L-OO 126
T4RB-17U 169,000
T4RB-17L 60,300
T4RB-17L-ON 59,200
T4RB-18U 3,260
T4RB-18L-OM 549
T4RB-19L 760
T4RB-19U 2,350
T4RB-20L 129
T4RB-20U 2,540
T4RB-21L 412
T4RB-21U 6,520
T4RB-22L 204
T4RB-22U 4,140
T4RB-23L 40.1
T4RB-23U 395
T4RB-24L 124
T4RB-24U 25.7
T4RB-25L 75.9
T4RB-25U 62.4
T4RB-26L 568
T4RB-26U 211
T4RB-28U 2,890
T4RB-9L 801
T4RB-7U <11.3
T4RB-5U 593
T4RB-3L 36.8
T4RB-K2 21,700
T4RB-K1 485,000
T4RB-BEBRA 102,000
T4RB-OJ 7,200
T4RB-43L 1,760
T4RB-43U 84,900
SG07 6,120
T4RB-44U-OD1 8,810
T4RB-44L 924
SG06 9,630
T4RB-45U-OD2 4,200
T4RB-45L 2,310
SG05 3,120
T4RB-45U-OD3 4,370
T4RB-46L 2,860
T4RB-46U 101
SG04 3,910
T4RB-49U
T4RB-51U 153
T4RB-48U 83,200J
T4RB-47L 2,040
T4RB-47U 126
T4RB-49L 266
T4RB-48L 359
T4RB-50U 123
T4RB-50L 1,070
T4RB-51L 20.3
T4RB-51L-OD4 1,190

BERTH 409
BERTH 405
BERTH 408
BERTH 411
BERTH 401
BERTH 414
PIER 1
PIER 2
PIER 4
PIER 5
AREA INACCESSIBLE FOR SAMPLING
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
HEAD OF SLIP 3
FORMER BERTH 412
WHEELER BAY
S044

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in µg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Between CUL and RAL
- Detected Below CUL
- Detected Between CUL and RAL
- Detected Above RAL

Sediment Results (Oct 2020)
Concentrations in µg/kg

- Not Detected: DL Below RAL
- Detected Below RAL
- Detected Above RAL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Total PAHs

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	6a
December 2021			

Screening Criteria in Micrograms per Kilogram (µg/kg)		
CUL	Cleanup Level	774
PTW	Principal Threat Waste	774,000
PAHs = Polycyclic Aromatic Hydrocarbons		
DL = Detection Limit		
J = Estimated Value		

T4RB-16L-O52C 415
T4RB-16U 2,630 J
T4RB-16L-OO 21.2
T4RB-17U 30,300
T4RB-17L 10,500
T4RB-17L-ON 10,500
T4RB-18U 511
T4RB-18L-OM 56.3
T4RB-19L 108
T4RB-19U 258
T4RB-20L 23.3
T4RB-20U 131
T4RB-21L 59.0
T4RB-21U 591
T4RB-22L 32.9
T4RB-22U 307
T4RB-23L 6.86
T4RB-23U 69.3
T4RB-24L 22.4
T4RB-24U 5.27
T4RB-25L 12.8
T4RB-25U 11.2
T4RB-26L 89.3
T4RB-26U 37.9
T4RB-28U 515
T4RB-9L 130
T4RB-7U <8.44
T4RB-5U 108
T4RB-3L 4.85
T4RB-K2 3,750
T4RB-K1 85,200
T4RB-BEBRA 18,200
T4RB-OJ 1,260
T4RB-43L 231
T4RB-43U 14,200
SG07 876
T4RB-44U-OD1 1,240
T4RB-44L 109
SG06 1,100
T4RB-45U-OD2 659
T4RB-45L 343
SG05 327
T4RB-45U-OD3 518
T4RB-46L 424
T4RB-46U 16.6
SG04 541
T4RB-49U 2,560
T4RB-48U 13,400J
T4RB-47L 280
T4RB-47U 21.6
T4RB-49L 41.7
T4RB-50U 22.0
T4RB-50L 158
T4RB-51U 28.2
T4RB-51L 3.58
T4RB-48L 63.7
T4RB-51L-OD4 210

BERTH 409
BERTH 405
BERTH 408
BERTH 401
BERTH 411
BERTH 414
PIER 1
PIER 2
PIER 4
PIER 5
AREA INACCESSIBLE FOR SAMPLING
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
HEAD OF SLIP 3
FORMER BERTH 412
N

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020) Concentrations in µg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Between CUL and PTW
- Detected Above PTW

Sediment Results (Oct 2020) Concentrations in µg/kg

- Not Detected: DL Below PTW
- Detected Below PTW
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - cPAHs (Benzo(a)pyrene Equivalents)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	6b
December 2021			

Screening Criteria in Micrograms per Kilogram (µg/kg)		
CUL	Cleanup Level	9
RAL	Remedial Action Level	75
PTW	Principal Threat Waste	200
PCBs = Polychlorinated Biphenyls		
DL = Detection Limit		
J = Estimated Value		

T4RB-16L-O52C 18.3J
T4RB-16U 26.2J
T4RB-16L-OO <5.07
T4RB-17U 182J
T4RB-17L 72.9
T4RB-17LON 223J
T4RB-18U 114J
T4RB-18L-OM 0.0435
T4RB-19L 18.0J
T4RB-19U 80.5J
T4RB-20L <2.12
T4RB-20U 43.2J
T4RB-21L 16.6
T4RB-21U 25.7J
T4RB-22L 14.2J
T4RB-22U 63.6J
T4RB-23L 3.31J
T4RB-23U 5.52J
T4RB-24L <4.58
T4RB-24U <4.36
T4RB-25L <2.45
T4RB-25U <2.02
T4RB-26L <2.19
T4RB-26U <2.13
T4RB-28U <5.52
T4RB-9L <2.38
T4RB-1U 145
T4RB-1L 130
T4RB-1U-OS 379J
T4RB-2L 43.9J
T4RB-2U <2.08
T4RB-3U <2.15
T4RB-3L <2.36
T4RB-5U 27.7J
T4RB-5L 15.9J
T4RB-7U <2.12
T4RB-4U-OR <4.09
T4RB-4L <2.51
T4RB-K2 28.7
T4RB-K1 1,204
T4RB-BEBRA 87.7J
T4RB-OJ-R 17.7J
SG07 1.89
T4RB-44L <5.29
SG06 1.06
SG05 9.38
T4RB-46U <13.4
SG04 0.327
T4RB-51U 8.18
T4RB-49L <4.56
[<34.3]

BERTH 409
BERTH 405
BERTH 408
BERTH 401
BERTH 411
BERTH 412
BERTH 414
PIER 1
PIER 2
PIER 4
PIER 5
AREA INACCESSIBLE FOR SAMPLING
NORTH SIDE OF SLIP 1
HEAD OF SLIP 3
FORMER BERTH 412
WHEELER BAY

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- Ordinary High Water
- Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020) Concentrations in µg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Between CUL and RAL
- Detected Below CUL
- Detected Between CUL and RAL
- Detected Between RAL and PTW
- Detected Above PTW

Sediment Results (Oct 2020) Concentrations in µg/kg

- Not Detected: DL Below RAL
- Detected Below RAL
- Detected Between RAL and PTW
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Total PCBs

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	7

December 2021

Screening Criteria in Micrograms per Kilogram (µg/kg)		
CUL	Cleanup Level	6.1
RAL	Remedial Action Level	160
PTW	Principal Threat Waste	7,050
DDx = The sum of dichlorodiphenyl-trichloroethane (DDT) and its metabolites (DDD and DDE).		
DL = Detection Limit		
J = Estimated Value		
UJ = Estimated Non-Detect		

T4RB-16L-O52C
<1.32

T4RB-17U
<14.4

BERTH 409

T4RB-19L
2.42J

AREA INACCESSIBLE FOR SAMPLING

PIER 1

BERTH 405

BERTH 408

PIER 2

T4RB-21U
15.8

T4RB-K1
109

PIER 4

HEAD OF SLIP 3

T4RB-9L
<1.16UJ

T4RB-23L
<1.04

T4RB-23U
1.94J

T4RB-24L
<1.18UJ

T4RB-24U
<1.08

T4RB-25L
<1.20

T4RB-25U
<1.00

T4RB-26L
<1.11

T4RB-26U
<1.06

T4RB-28U
632

SOUTH SIDE OF SLIP 1

T4RB-7U
<1.04UJ

T4RB-5U
8.42

T4RB-3L
<1.12

NORTH SIDE OF SLIP 1

BERTH 401

RIVERSIDE OF SLIP 1

WHEELER BAY

BERTH 411

FORMER BERTH 412

PIER 5

T4RB-44L
27.1

T4RB-46U
347

T4RB-51U
2.82

T4RB-49L
<1.11

BERTH 411

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in µg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Between CUL and RAL
- Detected Below CUL
- Detected Between CUL and RAL
- Detected Between RAL and PTW
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Organochlorine Pesticides (DDx)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	8a

December 2021

Screening Criteria in Micrograms per Kilogram (µg/kg)		
CUL	Cleanup Level	0.07
RAL	Remedial Action Level	NA
PTW	Principal Threat Waste	NA

DL = Detection Limit

J = Estimated Value

JN = The analyte was tentatively identified and did not meet method criteria for confirmation.

UJ = Estimated Non-Detect

NA = Not Available

T4RB-16L-O52C
<1.32

T4RB-17U
<14.4

BERTH 409

T4RB-19L
<1.03

AREA INACCESSIBLE FOR SAMPLING

PIER 1

BERTH 405

BERTH 408

PIER 2

T4RB-21U
<1.99

T4RB-K1
<27.0

PIER 4

HEAD OF SLIP 3

T4RB-9L
<1.16UJ

T4RB-23L
<1.04

T4RB-23U
0.036JN

T4RB-24L
<1.18UJ

T4RB-24U
<1.08

T4RB-25L
<1.20

T4RB-25U
<0.025

T4RB-26L
<1.11

T4RB-26U
1.65J

T4RB-28U
967

SOUTH SIDE OF SLIP 1

T4RB-7U
<1.04UJ

T4RB-5U
<2.18

T4RB-3L
3.46

NORTH SIDE OF SLIP 1

BERTH 401

RIVERSIDE OF SLIP 1

WHEELER BAY

BERTH 411

FORMER BERTH 412

PIER 5

T4RB-44L
<0.033

T4RB-46U
<9.81

T4RB-51U
0.221

T4RB-49L
<1.11

BERTH 414

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in µg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Organochlorine Pesticides (Dieldrin)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	8b

December 2021

Screening Criteria in Picograms per Gram (pg/g)		
CUL	Cleanup Level	0.2
RAL	Remedial Action Level	0.6
PTW	Principal Threat Waste	10
TCDD = Tetrachlorodibenzo-p-dioxin		
DL = Detection Limit		
J = Estimated Value		
JN = Estimated Maximum Possible Concentration (EMPC)		

T4RB-1U 0.337J
T4RB-1L <0.115
T4RB-1U-OS 3.28
T4RB-2L 0.265J
T4RB-2U <0.111
T4RB-3U <0.113
T4RB-3L <0.105
T4RB-5U 0.529J
T4RB-5L 1.09
T4RB-4U-OR <0.114
T4RB-4L <0.111
T4RB-6U <0.112
T4RB-7U <0.108
T4RB-7L <0.116
T4RB-8U <0.103
T4RB-8L <0.112
T4RB-9U <0.117
T4RB-9L <0.110
T4RB-10U 0.157J
T4RB-10L 0.155JN
T4RB-11U 0.144J
T4RB-11L 9.87
T4RB-16L-O52C <0.114
T4RB-16U <0.148
T4RB-16L-OO <0.137
T4RB-17U 3.73J
T4RB-17L <1.46
T4RB-17L-ON 1.97J
T4RB-18U 0.300J
T4RB-18L-OM <0.114
T4RB-19L <0.119
T4RB-19U 0.123JN
T4RB-20L <0.108
T4RB-20U 0.146JN
T4RB-21L <0.113
T4RB-21U 0.228J
T4RB-22L <0.114
T4RB-22U 0.325JN
T4RB-23L <0.110
T4RB-23U <0.103
T4RB-24L <0.112
T4RB-24U <0.118
T4RB-25L <0.113
T4RB-25U <0.114
T4RB-26L <0.111
T4RB-26U <0.115
T4RB-28U <0.106
T4RB-K1 3.50J
SG07 <0.115
T4RB-44L
T4RB-46U 6.53
SG04 <0.117
T4RB-51U <0.143
T4RB-49L <0.115

AREA INACCESSIBLE FOR SAMPLING
PIER 1
PIER 2
PIER 4
PIER 5
BERTH 401
BERTH 405
BERTH 408
BERTH 409
BERTH 411
BERTH 412
BERTH 414
HEAD OF SLIP 3
FORMER BERTH 412
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020) Concentrations in pg/g

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Between CUL and RAL
- Detected Between RAL and PTW
- Detected Above PTW

Sediment Results (Oct 2020) Concentrations in pg/g

- Not Detected: DL Below RAL
- Detected Below RAL
- Detected Between RAL and PTW
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Dioxins/Furans (2,3,7,8-TCDD)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	9a
December 2021			

Screening Criteria in Picograms per Gram (pg/g)		
CUL	Cleanup Level	0.2
RAL	Remedial Action Level	0.8
PTW	Principal Threat Waste	10
PeCDD = Pentachlorodibenzo-p-dioxin		
DL = Detection Limit		
J = Estimated Value		
JN = Estimated Maximum Possible Concentration (EMPC)		

T4RB-16L-O52C 0.515J
T4RB-16U 0.661JJ
T4RB-16L-OO <0.142
T4RB-17U 33.5J
T4RB-17L 6.47J
T4RB-17L-ON 8.05J
T4RB-18U 2.07J
T4RB-18L-OM <0.115
T4RB-19L 0.291JN
T4RB-19U 0.598J
T4RB-20L <0.109
T4RB-20U 0.484J
T4RB-21L 0.446J
T4RB-21U 0.481J
T4RB-22L 0.315J
T4RB-22U 1.68J
T4RB-23L <0.114
T4RB-23U 0.294J
T4RB-24L <0.108
T4RB-24U <0.110
T4RB-25L <0.120
T4RB-25U <0.120
T4RB-26L <0.116
T4RB-26U <0.105
T4RB-28U 0.430J
T4RB-K1 6.47J
SG07 0.298J
T4RB-44L <0.115
T4RB-46U 60.0
SG04 0.204J
T4RB-49L <0.101
T4RB-51U <0.141
T4RB-11U 0.815J
T4RB-11L 86.3
T4RB-10U 0.816JN
T4RB-10L 1.90J
T4RB-9U 0.285JN
T4RB-9L 0.264J
T4RB-8U 0.223JN
T4RB-8L <0.109
T4RB-7U <0.107
T4RB-7L <0.119
T4RB-5U 2.96J
T4RB-5L 9.68
T4RB-3U 0.670J
T4RB-3L 0.317J
T4RB-2U <0.102
T4RB-2L 0.524J
T4RB-1U 1.33J
T4RB-1L 0.285J
T4RB-1U-OS 2.31J
T4RB-6U <0.108
T4RB-4U-OR 0.279J
T4RB-4L 0.348J

PIER 1
PIER 2
PIER 4
PIER 5
BERTH 405
BERTH 408
BERTH 409
BERTH 411
BERTH 412
BERTH 401
BERTH 414
AREA INACCESSIBLE FOR SAMPLING
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
HEAD OF SLIP 3
FORMER BERTH 412

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020) Concentrations in pg/g

- Not Detected: DL Below CUL
- Not Detected: DL Between CUL and RAL
- Detected Below CUL
- Detected Between CUL and RAL
- Detected Between RAL and PTW
- Detected Above PTW

Sediment Results (Oct 2020) Concentrations in pg/g

- Not Detected: DL Below RAL
- Detected Below RAL
- Detected Between RAL and PTW
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Dioxins/Furans (1,2,3,7,8-PeCDD)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	9b
December 2021			

Screening Criteria in Picograms per Gram (pg/g)		
CUL	Cleanup Level	0.40658
RAL	Remedial Action Level	NA
PTW	Principal Threat Waste	600
TCDF = Tetrachlorodibenzofuran		
DL = Detection Limit		
J = Estimated Value		
NA = Not Available		

T4RB-16L-O52C 0.421J
T4RB-16U 0.745J
T4RB-16L-OO <0.148
T4RB-17U 9.77J
T4RB-17L 4.39J
T4RB-17L-ON 5.83J
T4RB-18U 3.96
T4RB-18L-OM 0.243J
T4RB-19L 1.02
T4RB-19U 2.16
T4RB-20L 0.205J
T4RB-20U 1.75
T4RB-21L 2.81
T4RB-21U 1.02
T4RB-22L 0.636J
T4RB-22U 2.88
T4RB-23L 0.213J
T4RB-23U 0.333J
T4RB-24L 1.10
T4RB-24U <0.107
T4RB-25L 0.151J
T4RB-25U <0.108
T4RB-26L <0.110
T4RB-26U <0.107
T4RB-28U 0.691J
T4RB-K1 49.5
SG07 0.208J
T4RB-44L <0.118
T4RB-46U 8.49
SG04 <0.114
T4RB-49L <0.107
T4RB-51U <0.140
T4RB-11U 0.241J
T4RB-11L 2.85
T4RB-10U 0.716J
T4RB-10L <0.109
T4RB-9U 0.281J
T4RB-9L 0.156J
T4RB-8U 0.301J
T4RB-8L 0.189J
T4RB-7U <0.107
T4RB-7L <0.108
T4RB-5U 1.13
T4RB-5L 0.890J
T4RB-3L <0.117
T4RB-3U <0.113
T4RB-2U <0.107
T4RB-2L 0.471J
T4RB-1U 2.08
T4RB-1L 0.498J
T4RB-1U-OS <11.3
T4RB-6U <0.110
T4RB-4U-OR 0.105J
T4RB-4L 0.230J

BERTH 409
BERTH 405
BERTH 408
BERTH 411
BERTH 401
BERTH 414
PIER 1
PIER 2
PIER 4
PIER 5
AREA INACCESSIBLE FOR SAMPLING
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
HEAD OF SLIP 3
FORMER BERTH 412
N

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in pg/g

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Between CUL and PTW
- Detected Above PTW

Sediment Results (Oct 2020)
Concentrations in pg/g

- Not Detected: DL Below RAL
- Detected Below RAL
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Dioxins/Furans (2,3,7,8-TCDF)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	9c
December 2021			

Screening Criteria in Picograms per Gram (pg/g)		
CUL	Cleanup Level	0.3
RAL	Remedial Action Level	200
PTW	Principal Threat Waste	200
PeCDF = Pentachlorodibenzofuran		
DL = Detection Limit		
J = Estimated Value		
JN = Estimated Maximum Possible Concentration (EMPC)		

T4RB-1U 1.38J
T4RB-1L 0.286J
T4RB-1U-OS 4.53J
T4RB-2L 0.603J
T4RB-2U <0.107
T4RB-3U <0.102
T4RB-3L <0.108
T4RB-4U-OR 0.112JN
T4RB-4L 0.115JN
T4RB-5U 1.07J
T4RB-5L 2.99J
T4RB-6U <0.102
T4RB-7U <0.115
T4RB-7L <0.113
T4RB-8U 0.200J
T4RB-8L <0.108
T4RB-9U 0.233J
T4RB-9L 0.237J
T4RB-10U 0.593JN
T4RB-10L 0.244J
T4RB-11U 0.311J
T4RB-11L 34.1
T4RB-16L-O52C 0.725J
T4RB-16U 0.919J
T4RB-16L-OO 0.189J
T4RB-17U 22.2J
T4RB-17L 13.8J
T4RB-17L-ON 6.33J
T4RB-18U 26.1
T4RB-18L-OM 3.19J
T4RB-19L 15.5
T4RB-19U 15.7
T4RB-20L 2.53J
T4RB-20U 4.86J
T4RB-21L 54.8
T4RB-21U 2.72J
T4RB-22L 12.0
T4RB-22U 7.89
T4RB-23L 4.66J
T4RB-23U 2.45J
T4RB-24L 32.0
T4RB-24U 1.70J
T4RB-25L 3.53J
T4RB-25U 0.397J
T4RB-26L <0.106
T4RB-26U 0.158J
T4RB-28U 2.16J
T4RB-K1 50.0J
SG07 0.349J
T4RB-44L 0.147J
T4RB-46U 35.5
SG04 0.222J
T4RB-49L <0.0975
T4RB-51U <0.142

AREA INACCESSIBLE FOR SAMPLING
PIER 1
PIER 2
PIER 4
PIER 5
BERTH 401
BERTH 405
BERTH 408
BERTH 409
BERTH 411
BERTH 412
BERTH 414
NORTH SIDE OF SLIP 1
SOUTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
HEAD OF SLIP 3
FORMER BERTH 412
WHEELER BAY

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020) Concentrations in pg/g

- Not Detected: DL Below CUL
- Not Detected: DL Between CUL and RAL
- Detected Below CUL
- Detected Between CUL and RAL/PTW
- Detected Above RAL/PTW

Sediment Results (Oct 2020) Concentrations in pg/g

- Not Detected: DL Below RAL/PTW
- Detected Below RAL/PTW
- Detected Above RAL/PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Dioxins/Furans (2,3,4,7,8-PeCDF)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	9d
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Screening Criteria in Picograms per Gram (pg/g)		
CUL	Cleanup Level	0.4
RAL	Remedial Action Level	NA
PTW	Principal Threat Waste	40
HxCDF = Hexachlorodibenzofuran		
DL = Detection Limit		
J = Estimated Value		
JN = Estimated Maximum Possible Concentration (EMPC)		
NA = Not Available		

T4RB-1U 4.45J
T4RB-1L 1.24J
T4RB-1U-OS 16.2JN
T4RB-2L 3.93J
T4RB-2U <0.102
T4RB-3U 1.82J
T4RB-3L 2.98J
T4RB-4U-OR 2.33J
T4RB-4L 1.27J
T4RB-5U 11.4
T4RB-5L 54.5
T4RB-6U 0.627JN
T4RB-7U <0.113
T4RB-7L 1.30J
T4RB-8U 1.41J
T4RB-8L 0.706J
T4RB-9U 1.21J
T4RB-9L 1.25J
T4RB-10U 5.96
T4RB-10L 3.02J
T4RB-11U 2.65J
T4RB-11L 252
T4RB-16L-O52C 4.58J
T4RB-16U 5.39
T4RB-16L-OO 1.08J
T4RB-17U 273JN
T4RB-17L 68.0
T4RB-17L-ON 43.2J
T4RB-18U 265
T4RB-18L-OM 13.3
T4RB-19L 111
T4RB-19U 137
T4RB-20L 11.7
T4RB-20U 29.1
T4RB-21L 271
T4RB-21U 10.2
T4RB-22L 110
T4RB-22U 36.2
T4RB-23L 25.9
T4RB-23U 9.84
T4RB-24L 154
T4RB-24U 9.21
T4RB-25L 20.0
T4RB-25U 1.63J
T4RB-26L 0.235J
T4RB-26U 0.638J
T4RB-28U 10.5
T4RB-K1 138
SG07 2.56J
T4RB-44L 0.668J
T4RB-46U 112JN
SG04 1.19J
T4RB-49L 0.153J
T4RB-51U 0.628J

BERTH 401
BERTH 405
BERTH 408
BERTH 409
BERTH 411
BERTH 412
BERTH 414
PIER 1
PIER 2
PIER 4
PIER 5
AREA INACCESSIBLE FOR SAMPLING
NORTH SIDE OF SLIP 1
SOUTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
HEAD OF SLIP 3
FORMER BERTH 412
WHEELER BAY

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- DH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020) Concentrations in pg/g

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Between CUL and PTW
- Detected Above PTW

Sediment Results (Oct 2020) Concentrations in pg/g

- Not Detected: DL Below PTW
- Detected Below PTW
- Detected Above PTW

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Dioxins/Furans (1,2,3,4,7,8-HxCDF)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	9e

December 2021

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	3
DL = Detection Limit		

T4RB-16L-O52C 5.72
T4RB-17U 8.31
T4RB-18U 4.72
T4RB-19L 4.88
T4RB-19U 12.5
T4RB-20L 2.46
T4RB-20U 4.63
T4RB-21L 5.08
T4RB-21U 8.20
T4RB-22L 2.76
T4RB-22U 7.29
T4RB-23L 2.99
T4RB-23U 3.15
T4RB-24L 4.04
T4RB-24U 2.97
T4RB-25L 7.00
T4RB-25U 2.99
T4RB-26L 3.32
T4RB-26U 3.16
T4RB-28U 2.97
T4RB-9L 3.58
T4RB-7U 3.02
T4RB-5U 2.61
T4RB-3L 2.93
T4RB-K1 65.5
T4RB-43L 2.19
T4RB-43U 23.1
T4RB-44U-OD1 3.91
T4RB-44L 3.92
T4RB-45U-OD2 3.84
T4RB-45L 3.35
T4RB-45U-OD3 3.45
T4RB-46L 3.17
T4RB-46U 5.58
T4RB-47L 3.89
T4RB-47U 1.56
T4RB-49L 3.61
T4RB-51U 3.58

AREA INACCESSIBLE FOR SAMPLING
PIER 1
PIER 2
PIER 4
PIER 5
BERTH 401
BERTH 405
BERTH 408
BERTH 409
BERTH 411
BERTH 414
FORMER BERTH 412
HEAD OF SLIP 3
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Metals (Arsenic)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	**10a**
December 2021			

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	0.51
DL = Detection Limit		
J = Estimated Value		

T4RB-16L-O52C
<0.135
T4RB-17U
1.21
BERTH 409
T4RB-18U
3.80
T4RB-19L
10.0
T4RB-19U
20.0
T4RB-20L
0.149J
T4RB-20U
2.14
T4RB-21L
5.34
T4RB-21U
7.60
T4RB-22L
0.275
T4RB-22U
5.35
T4RB-23L
<0.118
T4RB-23U
0.149J
T4RB-24L
<0.119
T4RB-24U
<0.119
T4RB-25L
0.167J
T4RB-25U
<0.108
T4RB-26L
<0.116
T4RB-26U
<0.120
T4RB-28U
0.267
T4RB-K1
74.5
T4RB-43L
0.922
T4RB-43U
18.0
T4RB-44U-OD1
0.847
T4RB-44L
0.756
T4RB-45U-OD2
1.09
T4RB-45L
0.354
T4RB-45U-OD3
<0.113
T4RB-46L
0.561
T4RB-46U
7.13
T4RB-47L
0.185J
T4RB-47U
0.286
T4RB-49L
0.723
T4RB-51U
0.182
T4RB-9L
<0.132
T4RB-7U
<0.119
T4RB-5U
0.486
T4RB-3L
<0.132
AREA INACCESSIBLE FOR SAMPLING
PIER 1
PIER 2
PIER 4
PIER 5
BERTH 405
BERTH 408
BERTH 411
BERTH 412
BERTH 414
BERTH 401
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
HEAD OF SLIP 3
FORMER BERTH 412
WHEELER BAY
S-39*

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- DH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Metals (Cadmium)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	10b
December 2021			

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	359
DL = Detection Limit		
J = Estimated Value		

T4RB-16L-O52C 17.5
T4RB-17U 61.2
T4RB-18U 26.8
T4RB-19L 28.2
T4RB-19U 58.5
T4RB-20L 12.8
T4RB-20U 24.7
T4RB-21L 40.7
T4RB-21U 40.5
T4RB-22L 15.1
T4RB-22U 36.7
T4RB-23L 13.1
T4RB-23U 16.1
T4RB-24L 16.5
T4RB-24U 16.5
T4RB-25L 21.5
T4RB-25U 15.3
T4RB-26L 14.5
T4RB-26U 15.2
T4RB-28U 25.5
T4RB-9L 16,200J
T4RB-7U 13.0
T4RB-5U 30.2
T4RB-3L 11.8
T4RB-K1 434
T4RB-43L 14.4
T4RB-43U 85.2
T4RB-44U-OD1 16.7
T4RB-44L 20.2
T4RB-45U-OD2 22.2
T4RB-45L 17.3
T4RB-45U-OD3 13.8
T4RB-46L 14.8
T4RB-46U 79.3
T4RB-47L 14.7
T4RB-47U 19.8
T4RB-51U 18.0
T4RB-49L 16.9

AREA INACCESSIBLE FOR SAMPLING
PIER 1
PIER 2
PIER 4
PIER 5
BERTH 401
BERTH 405
BERTH 408
BERTH 409
BERTH 411
BERTH 412
BERTH 414
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
HEAD OF SLIP 3
FORMER BERTH 412
WHEELER BAY

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- Ordinary High Water
- Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Metals (Copper)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	10c
December 2021			

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	196
DL = Detection Limit		
J- = Estimated Value; Biased Low		

T4RB-16L-O52C 23.6
T4RB-17U 199
BERTH 409
T4RB-18U 432
T4RB-19L 173J-
T4RB-19U 1,280
T4RB-20L 4.99
T4RB-20U 266
T4RB-21L 773
T4RB-21U 705
T4RB-22L 47.5
T4RB-22U 725
T4RB-23L 6.78
T4RB-23U 14.7
T4RB-24L 6.19
T4RB-24U 4.76
T4RB-25L 11.9
T4RB-25U 5.19
T4RB-26L 4.73
T4RB-26U 4.48
T4RB-28U 21.4
T4RB-9L 9.25
T4RB-7U 2.52
T4RB-5U 61.1
T4RB-3L 6.86
AREA INACCESSIBLE FOR SAMPLING
PIER 1
PIER 2
PIER 4
PIER 5
BERTH 405
BERTH 408
BERTH 411
BERTH 412
BERTH 401
BERTH 414
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
HEAD OF SLIP 3
FORMER BERTH 412
T4RB-K1 11,100
T4RB-43L 22.8
T4RB-43U 2,410
T4RB-44U-OD1 308
T4RB-44L 58.9
T4RB-45U-OD2 911
T4RB-45L 10.2
T4RB-45U-OD3 6.27
T4RB-46L 14.0
T4RB-46U 662
T4RB-47L 4.23
T4RB-47U 10.7
T4RB-49L 17.7
T4RB-51U 9.66

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Metals (Lead)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	10d
December 2021			

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	0.085
DL = Detection Limit		
J = Estimated Value		

T4RB-16L-O52C <0.108
T4RB-17U <0.123
BERTH 409
T4RB-18U 0.0556J
T4RB-19L <0.0461
T4RB-19U 0.150
T4RB-20L <0.0459
T4RB-20U <0.0416
T4RB-21L 0.0592J
T4RB-21U 0.106
T4RB-22L <0.0431
T4RB-22U 0.0499J
T4RB-23L <0.0472
T4RB-23U <0.0456
T4RB-24L 0.117
T4RB-24U <0.0477
T4RB-25L <0.0541
T4RB-25U 0.0668J
T4RB-26L <0.0462
T4RB-26U <0.0481
T4RB-28U 0.0933J
AREA INACCESSIBLE FOR SAMPLING
PIER 1
BERTH 405
BERTH 408
PIER 2
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
T4RB-9L <0.0529
T4RB-7U <0.0474
T4RB-5U 0.113
T4RB-3L <0.0527
BERTH 401
T4RB-K1 0.851
PIER 4
BERTH 411
HEAD OF SLIP 3
T4RB-43L <0.0526
T4RB-43U 0.205
T4RB-44U-OD1 <0.0438
T4RB-44L 0.0898J
T4RB-45U-OD2 <0.0469
T4RB-45L <0.0500
T4RB-45U-OD3 <0.0453
T4RB-46L <0.0466
T4RB-46U <0.0897
T4RB-47L <0.0499
T4RB-47U <0.0926
T4RB-49L 0.0793J
T4RB-51U <0.0471
FORMER BERTH 412
PIER 5
BERTH 414

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- DH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Metals (Mercury)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	10e
December 2021			

Screening Criteria in Milligrams per Kilogram (mg/kg)		
CUL	Cleanup Level	459
DL = Detection Limit		
J = Estimated Value		
J- = Estimated Value; Biased Low		

T4RB-16L-O52C 67.4
T4RB-17U 311
BERTH 409
T4RB-18U 631
T4RB-19L 1,420J-
T4RB-19U 3,080
T4RB-20L 51.1
T4RB-20U 354
T4RB-21L 953
T4RB-21U 1,010
T4RB-22L 59.9
T4RB-22U 760
T4RB-23L 49.0
T4RB-23U 57.0
T4RB-24L 53.1
T4RB-24U 45.7
T4RB-25L 72.9
T4RB-25U 43.9
T4RB-26L 44.8
T4RB-26U 42.2
T4RB-28U 41.3
AREA INACCESSIBLE FOR SAMPLING
PIER 1
BERTH 405
BERTH 408
PIER 2
SOUTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
T4RB-9L 50.6
T4RB-7U 38.5
T4RB-5U 162
T4RB-3L 46.9
NORTH SIDE OF SLIP 1
BERTH 401
T4RB-K1 12,600
PIER 4
HEAD OF SLIP 3
BERTH 411
T4RB-43L 597
T4RB-43U 4,890
T4RB-44U-OD1 181
T4RB-44L 89.7
T4RB-45U-OD2 219
T4RB-45L 80.1
T4RB-45U-OD3 35.2
T4RB-46L 106
T4RB-46U 1,130
FORMER BERTH 412
PIER 5
T4RB-47L 52.4
T4RB-47U 54.0
T4RB-49L 147
T4RB-51U 58.3
BERTH 414

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- OL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in mg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Metals (Zinc)

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	10f
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Screening Criteria in Micrograms per Kilogram (µg/kg)		
CUL	Cleanup Level	135
DL = Detection Limit		

T4RB-16L-O52C
<1,100

T4RB-17U
<2,870

T4RB-17L
<2,930

BERTH 409

T4RB-19L
<203

AREA INACCESSIBLE FOR SAMPLING

PIER 1

BERTH 405

BERTH 408

PIER 2

T4RB-21U
<197

T4RB-K1
<7,140

T4RB-9L
561

T4RB-23L
<21.4

SOUTH SIDE OF SLIP 1

T4RB-25L
<20.2

T4RB-7U
235

T4RB-5U
<441

T4RB-3L
<23.4

NORTH SIDE OF SLIP 1

BERTH 401

T4RB-28U
<999

RIVERSIDE OF SLIP 1

WHEELER BAY

BERTH 411

PIER 4

HEAD OF SLIP 3

FORMER BERTH 412

PIER 5

T4RB-44L
<107

T4RB-46U
<21.3

T4RB-51U
<87.1

T4RB-49L
<91.6

BERTH 414

Legend:

- Top of Bank
- Bottom of Bank
- Outfall Location
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- DL — Ordinary Low Water

Riverbank Soil Results (Sep/Oct 2020)
Concentrations in µg/kg

- Not Detected: DL Below CUL
- Not Detected: DL Above CUL
- Detected Below CUL
- Detected Above CUL

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil Results Summary - Bis(2-ethylhexyl)phthalate

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	11

December 2021

Abbreviations	
As	Arsenic
Cd	Cadmium
Hg	Mercury
Pb	Lead
Zn	Zinc
BEHP	bis(2-ethylhexyl)phthalate
tPCBs	Total Polychlorinated Biphenyls
tPAHs	Total Polycyclic Aromatic Hydrocarbons
cPAHs	Carcinogenic Total Polycyclic Aromatic Hydrocarbons
TPHd	Total Petroleum Hydrocarbons as Diesel
D/F	Dioxins/Furans
DDE	Only dieldrin, total dichlorodiphenyldichloroethylene (DDE), total dichlorodiphenyltrichloroethane (DDT), and total DDx (sum of DDE, DDT, and total dichlorodiphenyldichloroethane [DDD]) were detected at least once above CULs.
DDT	dichlorodiphenyl-trichloroethane
DDx	The sum of dichlorodiphenyl-trichloroethane (DDT) and its metabolites (DDD and DDE).

T4RB-16U (cPAHs, tPCBs, D/F)
T4RB-16L-OO (D/F)
T4RB-17U (tPAHs, cPAHs, tPCBs, D/F, As, Cd, Pb)
T4RB-17L (tPAHs, cPAHs, tPCBs, D/F)
T4RB-16L
T4RB-17LON (tPAHs, cPAHs, tPCBs, D/F)
T4RB-18L
T4RB-16L-O52C (tPCBs, D/F, As)
BERTH 409
T4RB-18U (tPCBs, D/F, As, Cd, Pb, Zn)
T4RB-18L-OM (D/F)
AREA INACCESSIBLE FOR SAMPLING
PIER 1
T4RB-19L (tPCBs, D/F, As, Cd, Zn)
T4RB-19U (TPHd tPCBs, D/F, As, Cd, Pb, Hg, Zn)
BERTH 405
T4RB-20L (D/F)
T4RB-21L (tPCBs, D/F, As, Cd, Pb, Zn)
T4RB-20U (tPCBs, D/F, As, Cd, Pb)
BERTH 408
PIER 2
T4RB-21U (tPCBs, D/F, DDX, As, Cd, Pb, Hg, Zn)
T4RB-11U (D/F)
T4RB-11L (D/F)
T4RB-22L (tPCBs, D/F)
T4RB-10U (D/F)
T4RB-10L (D/F)
T4RB-22U (tPCBs, D/F, As, Cd, Pb, Zn)
T4RB-9U (D/F)
T4RB-23L (D/F)
T4RB-9L (D/F, As, Cu, BEHP)
T4RB-23U (D/F, As)
T4RB-8U (D/F)
T4RB-24L (D/F, As, Hg)
T4RB-8L (D/F)
T4RB-7U (As, BEHP)
T4RB-24U (D/F)
T4RB-1U (tPCBs, D/F)
T4RB-7L (D/F)
T4RB-25L (D/F, As)
T4RB-1L (tPCBs, D/F)
T4RB-1U-OS (TPHd, tPCBs, D/F)
T4RB-6U (D/F)
T4RB-25U (D/F)
T4RB-2L (tPCBs, D/F)
T4RB-5U (tPCBs, DDx, D/F, Hg)
T4RB-2U
T4RB-3U (D/F)
T4RB-4U
T4RB-26L (As)
T4RB-26U (Dieldrin, D/F, As)
T4RB-27U
T4RB-29U
T4RB-29L
T4RB-3L (Dieldrin, D/F)
BERTH 401
T4RB-4U-OR (D/F)
T4RB-27L
T4RB-28L
T4RB-4L (D/F)
T4RB-6L
T4RB-5L (tPCBs, D/F)
T4RB-28U (DDx, Dieldrin, Aldrin, DDE, DDT, D/F, Hg)
SOUTH SIDE OF SLIP 1
NORTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
PIER 4
BERTH 411
T4RB-K2 (cPAHs, tPCBs)
T4RB-K1 (tPAHs, cPAHs, tPCBs, DDx, D/F, As, Cd, Cu, Pb, Hg, Zn)
T4RB-BEBRA (tPAHs, cPAHs, tPCBs)
T4RB-OJ (cPAHs, tPCBs)
HEAD OF SLIP 3
T4RB-43U (tPAHs, cPAHs, As, Cd, Pb, Hg, Zn)
T4RB-43L (TPHd, Cd, Zn)
T4RB-44L (DDx, D/F, As, Cd, Hg)
SG07
T4RB-44U-OD1 (cPAHs, As, Cd, Pb)
T4RB-44U
FORMER BERTH 412
SG06
T4RB-45U-OD2 (As, Cd, Pb)
PIER 5
T4RB-45U-OD3 (As)
T4RB-45U
T4RB-46L (As, Cd)
SG05
T4RB-45L (As)
T4RB-46U (DDx, D/F, As, DDT, Cd, Pb, Zn)
T4RB-51U (Dieldrin, D/F, As)
SG04
T4RB-47L (As)
T4RB-47U
T4RB-49U (cPAHs)
T4RB-51L
T4RB-50U
T4RB-48U (tPAHs, cPAHs)
T4RB-49L (As, Cd)
T4RB-50L
T4RB-48L
T4RB-51L-OD4
BERTH 414

Legend:

- Outfall Location
- Judgmental Soil Sample Location
- T4RB-2L — Probabilistic Soil Sample Location (Apex)
- SG06 — Sediment Sample Location (Apex)
- Top of Bank
- Bottom of Bank
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- DH — Ordinary High Water
- DL — Ordinary Low Water
- CUL Exceedance
- Potentially Unstable - Sandy Surface Little or No Vegetation, Oversteepened Slope

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil CUL Exceedances

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	12

December 2021

Abbreviations	
RAL	Remedial Action Level
PTW	Principal Threat Waste
PCBs	Polychlorinated Biphenyls
PAHs	Polycyclic Aromatic Hydrocarbons
D/F	Dioxins/Furans
DDx	The sum of dichlorodiphenyl-trichloroethane (DDT) and its metabolites (DDD and DDE).

T4RB-1U (PCBs, D/F)
T4RB-1L (PCBs)
T4RB-1U-OS (PCBs, D/F)
(PCBs)
T4RB-2L
T4RB-2U
T4RB-3L
T4RB-3U
T4RB-4U
T4RB-5L (D/F)
T4RB-5U (D/F)
T4RB-6U
T4RB-7L
T4RB-7U
T4RB-8L
T4RB-8U
T4RB-9L
T4RB-9U
T4RB-10L (D/F)
T4RB-10U (D/F)
T4RB-11L (D/F)
T4RB-11U (D/F)
(D/F)
(D/F)
T4RB-6L
T4RB-4L
T4RB-4U-OR
BERTH 401
NORTH SIDE OF SLIP 1
AREA INACCESSIBLE FOR SAMPLING
PIER 1
BERTH 405
BERTH 408
PIER 2
BERTH 409
T4RB-16L
T4RB-16U
T4RB-16L-OO
T4RB-17U (PAHs, PCBs, D/F)
(D/F)
T4RB-17L (PAHs, D/F)
T4RB-17LON (PAHs, PCBs, D/F)
(D/F)
(PCBs,D/F)
T4RB-18L
T4RB-18U (PCBs, D/F)
(D/F)
T4RB-18L-OM
(D/F)
T4RB-19L
T4RB-19U (PCBs)
(D/F)
T4RB-20L
T4RB-20U
T4RB-21L
T4RB-21U
(D/F)
T4RB-22L
T4RB-22U (D/F)
T4RB-23L
T4RB-23U
T4RB-24L
T4RB-24U
(D/F)
T4RB-25L
T4RB-25U
T4RB-26L
T4RB-26U
T4RB-27L
T4RB-27U
T4RB-28L
T4RB-28U (DDx)
T4RB-29L
T4RB-29U
SOUTH SIDE OF SLIP 1
RIVERSIDE OF SLIP 1
WHEELER BAY
BERTH 411
PIER 4
T4RB-K2
T4RB-K1 (PAHs, PCBs, D/F)
T4RB-BEBRA (PAHs, PCBs)
T4RB-OJ
(PCBs,D/F)
HEAD OF SLIP 3
T4RB-43L
T4RB-43U (PAHs)
SG07
T4RB-44U-OD1
T4RB-44L
T4RB-44U
T4RB-45U-OD2
T4RB-45U-OD3
SG06
FORMER BERTH 412
PIER 5
T4RB-45U
T4RB-45L
SG05
T4RB-46L
T4RB-46U (DDx, D/F)
(D/F)
SG04
T4RB-47L
T4RB-47U
T4RB-49U
T4RB-51U
T4RB-51L
T4RB-50U
T4RB-48U (PAHs)
T4RB-49L
T4RB-50L
T4RB-48L
T4RB-51L-OD4
BERTH 414

Legend:

- Outfall Location
- Judgmental Soil Sample Location
- T4RB-2L — Probabilistic Soil Sample Location (Apex)
- SG06 — Sediment Sample Location (Apex)
- Top of Bank
- Bottom of Bank
- Probabilistic Sample Cell and Number (Sample Cell Boundary Located Every 150 Feet)
- Completed Riverbank Remedial Actions/Source Control Actions
- OH — Ordinary High Water
- OL — Ordinary Low Water
- RAL Exceedance
- PTW Exceedance 2020
- Potentially Unstable - Sandy Surface Little or No Vegetation, Oversteepened Slope

0 200 400
Scale in Feet

NOTES:
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Surface Soil RAL and PTW Threshold Exceedances

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	13

December 2021

Appendix A

Photograph Log of Soil Sampling

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 1 **Photo Date:** 09/28/2020 **Orientation:** -- **Description:** Sample T4RB-23L. Placing homogenized sample into jar.	
Photo No: 2 **Photo Date:** 09/28/2020 **Orientation:** -- **Description:** Sample location T4RB-24L.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

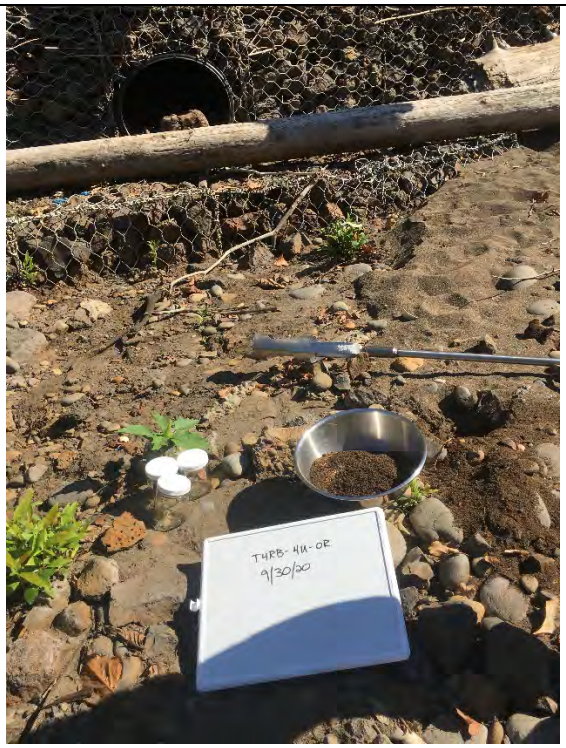
Client: Port of Portland
Location: Portland, Oregon

Photo No: 3 **Photo Date:** 09/28/2020 **Orientation:** East **Description:** Sample location T4RB-27L.	
Photo No: 4 **Photo Date:** 09/29/2020 **Orientation:** -- **Description:** Sample location T4RB – 1U-OS.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

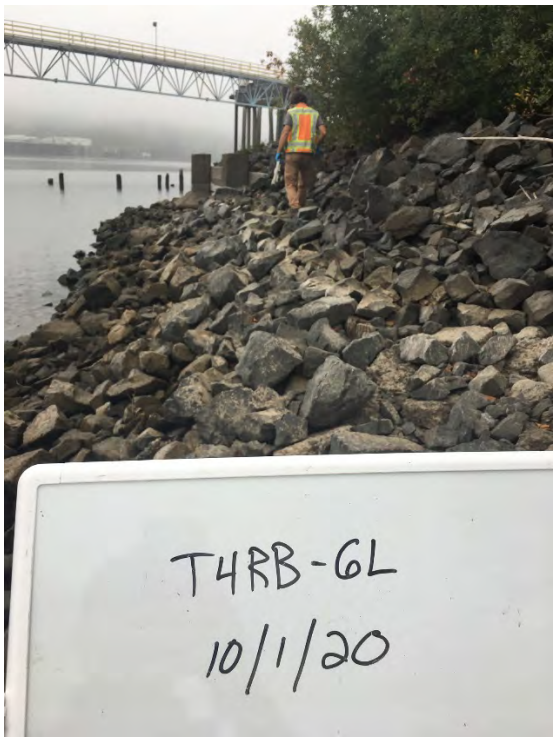
Photo No: 5 **Photo Date:** 09/29/2020 **Orientation:** East **Description:** Collection of sample T4RB-1U.	
Photo No: 6 **Photo Date:** 09/30/2020 **Orientation:** North-Northeast **Description:** Location of T4RB-4U-OR. Note outfall in background.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

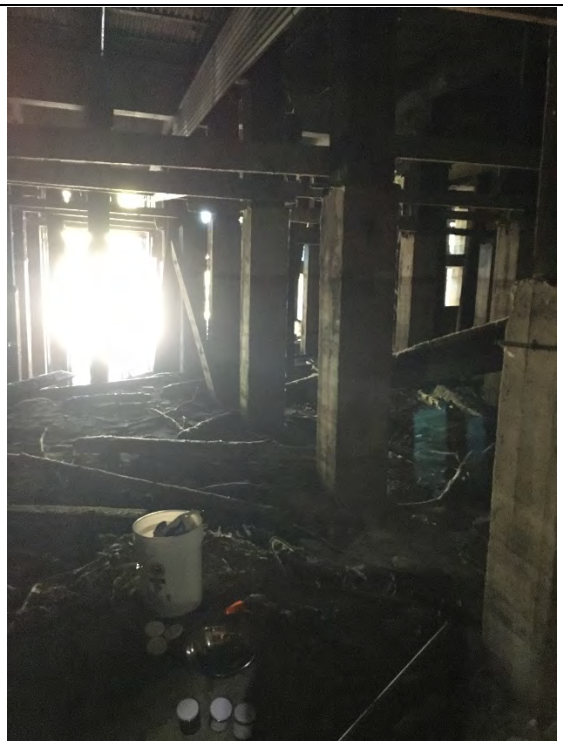
Photo No: 7 **Photo Date:** 09/30/2020 **Orientation:** North **Description:** Concrete pier supports in cell 3 near Berth 401. Note soil erosion beneath pier pads.	

Photo No: 8 **Photo Date:** 10/01/2020 **Orientation:** West **Description:** Proposed location of T4RB-6L. Heavy rip-rap prevented sample collection in T4RB-6L.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 9 **Photo Date:** 10/02/2020 **Orientation:** North **Description:** Collection of sample T4RB-10U. Note concrete and wood pier structure remnants.	
Photo No: 10 **Photo Date:** 10/03/2020 **Orientation:** West **Description:** Sample location T4RB-18U beneath Pier 2 at Berth 408.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 11 **Photo Date:** 10/06/2020 **Orientation:** East **Description:** Typical view of area beneath Pier 2.	

Photo No: 12 **Photo Date:** 10/07/2020 **Orientation:** Northwest **Description:** Typical riverbank section, riverside of Slip 3.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 13 **Photo Date:** 10/07/2020 **Orientation:** North **Description:** Typical riverbank section, Former Pier 5 area. Note shifted concrete and wood pier supports and piles in river.	

Photo No: 14 **Photo Date:** 10/07/2020 **Orientation:** -- **Description:** Sample location T4RB-16L. Note bank armoring was moved to collect sample.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

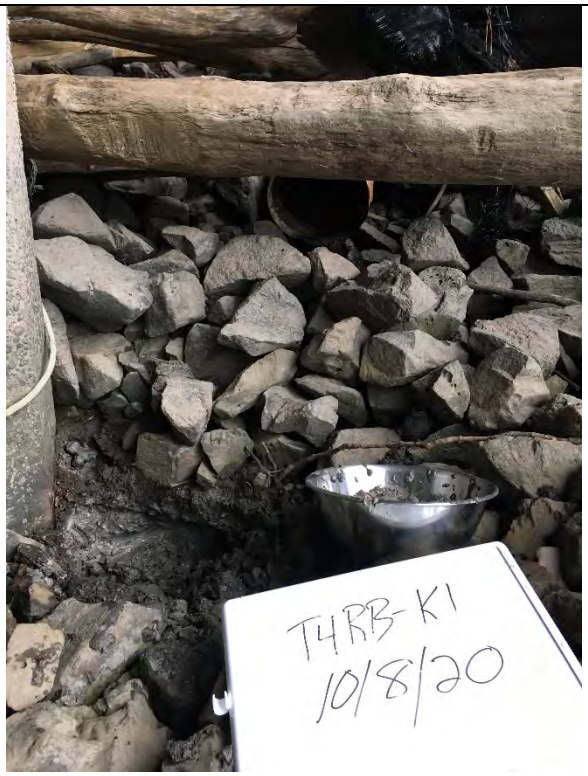
Photo No: 15 **Photo Date:** 10/07/2020 **Orientation:** Southeast **Description:** Sample location T4RB-16L-00. Note outfall sample location.	

Photo No: 16 **Photo Date:** 10/08/2020 **Orientation:** Southwest **Description:** Head of Slip 1 view to southwest. Pier 2 is in background.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 17 **Photo Date:** 10/08/2020 **Orientation:** -- **Description:** Sample location T4RB-K1. Note armoring was moved to collect sample. Note outfall in background.	
Photo No: 18 **Photo Date:** 10/09/2020 **Orientation:** North **Description:** Collection of sample T4RB-46U.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 19 **Photo Date:** 10/12/2020 **Orientation:** South **Description:** Sample location T4RB-44L in Former Pier 5 area. Note erosion beneath pier support pads.	

Photo No: 20 **Photo Date:** 10/12/2020 **Orientation:** East **Description:** Typical of riverbank in Former Pier 5 area. Note erosion beneath pier support pads and wood retaining structures.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 21 **Photo Date:** 10/13/2020 **Orientation:** North **Description:** Sample location T4RB-45U-OD2. Note outfall above sample location.	

Photo No: 22 **Photo Date:** 10/14/2020 **Orientation:** West **Description:** Sample location T4RB-50L.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

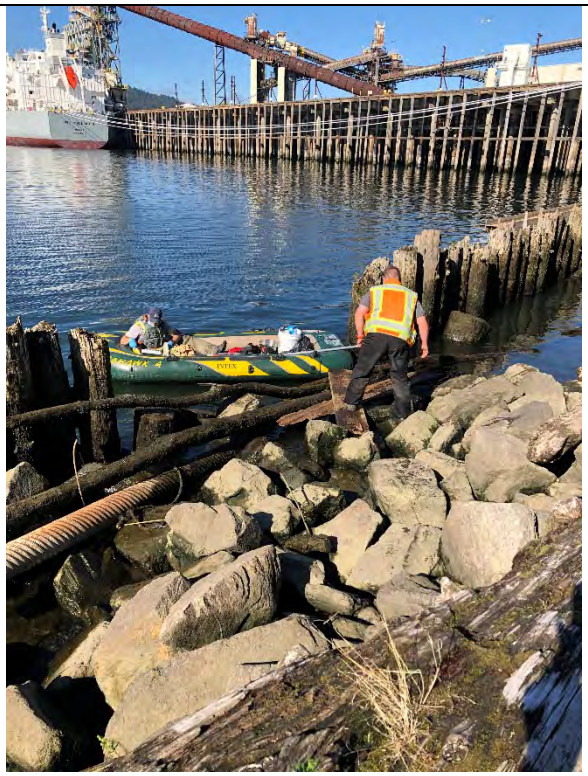
Photo No: 23 **Photo Date:** 10/15/2020 **Orientation:** Northwest **Description:** Preparing to collect sediment samples in Berth 412 area.	

Photo No: 24 **Photo Date:** 10/15/2020 **Orientation:** Northwest **Description:** Collection of sediment sample.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

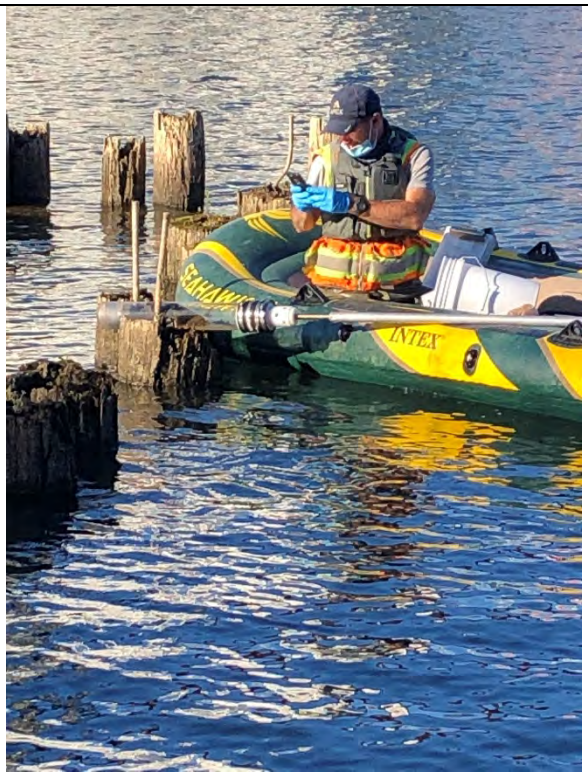
Photo No: 25 **Photo Date:** 10/15/2020 **Orientation:** North **Description:** Sediment sampling device.	

Photo No: 26 **Photo Date:** 10/16/2020 **Orientation:** -- **Description:** Sediment sampling device with sediment.	

APPENDIX A
PHOTOGRAPH LOG

Project Name: T4 Riverbank Characterization
Project Number: 2372-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 27	
Photo Date: 10/16/2020	
Orientation: --	
Description: Homogenized sediment sample.	

Appendix B

Sampling Notes

Attachment A

2020 Field Notes

9/28/20 KK 2372.08

T4 - T4 Riverbank Port of Portland

1000 - on site Kyle, Matt, Steve, Megan, Andrew (CDM)
Review HASP, sunny 63°F High of 82°F

1050 - Arrive at southside of Slip 1, wait for gate to be opened. Prep for sampling.

1100 - Cal PID 101 ppm 100 ppm Isobutylene

1130 - Security opens gates, they were busy.
carry sampling equipment to T4RB-23.

1150 - sample T4RB-23U, 30 cm, 0.0 PID, no odor or sheen
3 8oz Jars

1215 - Sample T4RB-23L, 30 cm, 0.0 ppm PID, no odor or sheen.

1235 - Sample T4RB-24U, 30 cm, 0.0 ppm, no odor or sheen.

→ South side of Slip 1 - Predominant sand, scarps and evidence of erosion on south side bank, concrete debris, vegetation along scarps.

1250 - Sample T4RB-24L, 30 cm, 0.0 ppm, no odor or sheen.
~~- Sample T4RB-25U, Point located on steep slope~~ KK

1330 - Sample T4RB-25U, 30 cm, 0.0 ppm, no odor or sheen, on steep slope, use shovel.

1340 - Sample T4RB-25L, 30 cm, 0.0 ppm, no odor or sheen
* Collect DUP-1 in addition. 3-8oz Jars

1345 - Steve Minter off site.

1410 - Andrew (CDM) off site

1430 - sample T4RB-26L, 30 cm, 0.0 ppm, no odor or sheen

Scale: 1 square = _____

=2372.08

Andrew (CDM)
32°F
t for-
15.
e
.
3.
or or sheen
odor or
r or sheen.
scarps
ank,
or sheen.
pe KK
or sheen,
sheen
r sheen

1440 - Sample T4RB-26U, 30 cm, 0.0 ppm, no odor or sheen.

1520 - Sample T4RB-27L, 21 cm, 0.0 ppm, no odor or sheen, refusal at 21 cm.

1535 - Sample T4RB-27U, 13 cm, 0.0 ppm, no odor or sheen. In area of riprap, could not get recovery. Per work plan moved point until we could get recovery, point was 8 feet up bank. Took new GPS point labelled T4RB-27U-R.

1540 - Finish sampling for the day, collected 10 samples at 5 unit cells.

Pack up Truck

1555 - OFF site

Scale: 1 square = ____

Rite in the Rain

9/29/20 2372-08

T4 Riverbank Characterization Port of Portland

0840 - on site Kyle, Matt
Review HASP Sun, 61°F High 87°F
Speak w/ Kels: on phone

0925 - Get security to open gates for the day
Prep for samplins, Decon equipment
Cal PID 100.5 ppm, carry equip. down to cell 28
Riverside of Slip 1 is heavily covered with Riprap in cells 27 + 28, Cell 29 has less riprap in lower section with gravel and small cobble with vegitation growing, Large concrete slab at top of lower section.
- Difficult to find a sample location at T4RB-28L Had to move location 13.5' to left looking up bank.

1025 - Sample T4RB-28L, 15 cm, 0.0 ppm, no odor or sheen, Refusal at 15 cm.

1055 - Sample T4RB-28U, 30cm, 0.0 ppm, No odor or sheen
Decon Equipment Set's

1130 - sample T4RB-29U, 30cm, 0.3 ppm, no odor or sheen.

1150 - Sample T4RB-29L, 30 cm, 0.0 ppm, no odor or sheen.
Finish Riverside of Slip 1
Decon Equipment, load truck, Drive to Berth 401

1300 - Sample T4RB-1U-05, 30 cm, 0.0 ppm, no odor or sheen

1320 - sample T4RB-1U, Archive sample, 30 cm 0.0 ppm, no odor or sheen.
Decon Equipment

Scale: 1 square = _____

2372-08

Port of Portland

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1345 - Sample T4RB-1L, 30 cm, 0.0 ppm, no odor or sheen, Actual point was 28 feet west in the river, moved Point 33 feet east took new GPS Point T4RB-1L-R.

1403 - Finish sampling, clean up, pack Truck Go to meet Steve to scout Berth 408.

1510 - Get warehouse Key and Drop off IDW Drum and empty Decon buckets

1530 - OFF Site

Scale: 1 square = _____

Rite in the Rain

9/30/20 2372-08

T4 Riverbank characterization

833 - on site Kyle, Matt, Andrew (CDM)
Review HASP sun, 54°F High 84°F

905 - Security opens gates, scout access at north side of slip 1,
Prep for sampling, cal PID 100.6 ppm, Decon carry equipment to T4RB-2

945 - Sample T4RB-2L, 30 cm, 0.0 ppm, no odor or sheen

915 - Sam Jackson on site for Field Audit

1015 - sample T4RB-2U, 30 cm, 0.0 ppm, no odor or sheen. Very large riprap at location, had to move the point 21 feet to the right looking upbank, Collected a new GPS point T4RB-2U-R.

1045 - sample T4RB-3L, 30 cm, 0.0 ppm, no odor or sheen.

1120 - Sample T4RB-3U, 30 cm, 0.0 ppm, no odor or Sheen. * collect DUP-2 3-8 oz jars, Decon
Figure out how to access cell 4.

1220 - sample T4RB-4L, 30 cm, 0.0 ppm, no odor or sheen.

1250 - Sample T4RB-4U-OR, 30 cm, 0.0 ppm, no odor or sheen. Decon

Berth 401 - North End has scarps and signs of erosion, sand beach w/ no riprap, a lot of logs. South end of cell 2 you see riprap, cell 3 has sand beach and visible signs of erosion concrete footers that are off ground, concrete columns with wood planks protecting upper bank erosion in cell 4 in SE corner.

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2372-08

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nd, concrete
upper bank

1345 - Sample T4RB-44, 30cm, 0.0ppm, no odor or sheen. Decon

1415 - Figure out how to get to cells 5-11. Finally find a narrow steep path. Walk down to cell 10 to make sure there is access. Call Steve to discuss options for getting sampling equipment to cells. Too long of distance to have to walk over riprap and broken concrete back and forth all day long. Pack up truck.

1515 - Drop off Decon water at waste Drum.

1530 - OFF site

Scale: 1 square = _____

Rite in the Rain

10/1/20 2372-08

T4 Riverbank

850 - on site Kyle, matt
Review HASP Fog 57° High 82°

900 - Security opens gates, place ladder to get down to locations, come up with Plan to safely sample locations
Prep for sampling call PID 99.9 ppm. Decon.

950 - Sample T4RB-5L, 10 cm, 0.0 ppm, no odor or Sheen. Powed concrete, concrete chunks and Riprap. using diamond movement we had to move 30 Feet east to find a location to get any sample. Collect new GPS point T4RB-5L-R.

1025 - Sample T4RB-5U, 30 cm, 0.0 ppm, no odor or sheen. Decon

1120 - Sample T4RB-6U, 30 cm, 1.6 ppm, no odor or sheen.

1140 - Cannot sample T4RB-6L, there is too much riprap that covers the entire cell. Called Steve, he Filled out a change Form and sent it to Kelly (Port).

1215 - Sample T4RB-7L, 30 cm, 0.0 ppm, no odor or Sheen. Decon, get more sample containers.

1305 - sample T4RB-7U, 30 cm, 0.0 ppm, no odor or Sheen. Take samples up to cooler, Decon

1405 - sample T4RB-8L, 30 cm, 0.0 ppm, no odor or sheen

1435 - Sample T4RB-8U, 30cm, 0.0 ppm, no odor or Sheen.

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1445 - Begin to pack up equipment from down Below. Clean up, pack truck

KE #1515 - Drop off Decon water at waste Drum

Security asked us to lock gates when we are done, call security to tell them.

1520 - OFF site

Scale: 1 square = _____

Rite in the Rain

10/2/20 2372-08

T4 Riverbank

845 - on site Matt, Kyle
Review HASP Fog 57°F High 78°

900 - security opens gate, setup ladder
Setup for sampling, cal PID 100.4 ppm
Decon equipment and transport down bank

950 - Sample T4RB-9L, 30 cm, 0.0 ppm, no odor or sheen. Collect DUP-3 also.

1025 - Sample T4RB-9U, 30 cm, 0.0 ppm, no odor or sheen. Decon equipment.

1105 - Sample T4RB-10L, 30 cm, 0.0 ppm, NO odor or sheen

1125 - Sample T4RB-10U, 30 cm, 0.0 ppm, NO odor or sheen, Decon Equipment.

1200 - Sample T4RB-11L, 30 cm, 0.0 ppm NO sheen or odor. In Riprap, had to move point 13 feet east and 5 feet north, New GPS point T4RB-11L-R

1225 - Sample T4RB-11U, 30 cm, 0.0 ppm, NO odor or sheen.
Finish sampling northside of Slip 1.
Pack out equipment, load truck.

- North side of Slip 1 is majority riprap in lower section, Cell 7 and 10 have bare spots with sand beach. Cell 10 has broken wood fencing at first step up w/ some erosion

1300 - Drop off Decon water at waste Drum
1305 - OFF site, call security

Scale: 1 square = _____

10/5/20 T4 Riverbank Characterization 2372-08

0845 - On site Kyle, matt, steve
Review HASP, light fog 57° High 73°

0940 - Security opens gate for Pier 2
mark sample location below with person using GPS on top.

1120 - Finish marking points, prep for sampling. Cal PID 100.0 ppm, Decon and carry equipment below Pier 2.

1225 - Sample T4RB-18U, 30 cm, 0.0 ppm, no odor or sheen

1300 - Sample T4RB-18L, 30 cm, 0.0 ppm, no odor or sheen, Archive sample, Decon equipment

1410 - Sample T4RB-19U, 30 cm, 0.0 ppm, no odor or sheen

1445 - Sample T4RB-19L, 30 cm, 0.1 ppm, no odor or sheen, Decon.

Carry equipment out from under Pier.
Pack up Truck, Drop off Decon water at IDW waste Drum

1525 - Call Security, OFF site

Scale: 1 square = _____

Scale: 1

10/6/20 T4 Riverbank Characterization 2372-08
825 - on site - Kyle, Matt, Andrew (CDM)
Review HASP Sun, 57° High 78°
900 - Security opens gate for Pier 2.
Prep for sampling, Decon equipment
Cal PID 100.8, move equipment down.
930 - Sample T4RB-20L, 30 cm, 0.0 ppm, NO odor or sheen
955 - Sample T4RB-20U, 30 cm, 0.1 ppm, NO odor or sheen, Decon equipment.
1035 - sample T4RB-21U, 30 cm, 0.0 ppm, NO odor or sheen.
1105 - sample T4RB-21L, 30 cm, 0.0 ppm, NO odor or sheen. Collect DUP-4 also.
Decon equipment, find Flag.
1220 - Sample T4RB-22U, 20 cm, 0.1 ppm, NO odor or sheen.
1245 - sample T4RB-22L, 30 cm, 0.1 ppm, NO odor or sheen. Decon, load truck and move to Berth 409.
Scout sampling locations at Berth 409, cells 16 and 17. 16U had to bush whack a path to get to it. 16L and the two outfalls in cell 16 are accessible. The locations in cell 17 are in very thick riprap and in my opinion there is no way to get below the riprap to collect a sample.

Berth 408/Pier 2 has a multi step bank with wood slats. There are some areas on the upbank side of the slats that

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are eroding and the sand is falling through the bottom or being washed away. All the steps seemed to be in good shape. A lot of logs and branches that are washed up on the steps.

Drop off Decon water at IDW Drum

1510 - call security / OFF site

Scale: 1 square = _____

Rite in the Rain

10/7/20 T4 Riverbank Characterization 2372-08

Buy Ice, Pack sample for lab pickup.

0900 - onsite Kyle, Matt
Review HASP Fog 57° High 75°

0930 Security opens gates
Prep for sampling, Decon equipment
Cal PID 100.3 ppm, move equipment
down to sample locations.

1010 - Sample T4RB-16U, 20 cm, 0.1 ppm,
no odor or sheen.
The lower samples are in water, high tide.
move to Riverside of slip 3, come back
to Berth 409 at lower water.
Not finding safe access to slip 3 sampling
points. Walk up and down bank. call
Steve to inform of situation. Steve is
going to come out in afternoon.

1210 - move back to Berth 409, tide has
gone out, Prep to sample lower locations

1230 - sample T4RB-16L, Archive, 20cm, 0.0 ppm
No odor or sheen.

1305 - Sample T4RB-16L-052C, 30 cm, 0.0 ppm,
NO Odor or sheen

1335 - Sample T4RB-16L-00, 30 cm, 0.0 ppm
no odor or sheen. Steve Misner on site
look at cell 17 for sample locations

1410 - move TO slip 3 w/ Steve to Find
access to riverbank. Find a way down
and location to hand equipment down,
Clear some vegetation.

1625 call security / OFF site

Scale: 1 square = _____

10/8/20 T4 Riverbank Characterization 2372-08

910 - Onsite Kyle, Matt
Review HASP Overcast 57° High 66°
940 Security opens gates, Prep for Sampling, Decon, Cal PID 100.1, move equipment to bank.
1025 - Sample T4RB-17L (Archive), 20 cm, 0.0 ppm NO odor or sheen, had to dig through riprap.
1115 - Sample T4RB-17L-ON, 30 cm, 0.0 ppm, NO odor or sheen, dig through riprap
1150 - Sample T4RB-17U, 22 cm, 0.0 ppm, NO odor or sheen. Could not get sample at original location due to large riprap so had to move location to the south, collected new GPS coordinate T4RB-17U-2

Cell 17 has riprap from water to the upbank wall, no signs of erosion.
Cell 16 has sand beach w/ partial riprap. Further up the bank in upper cell there are areas of erosion and exposed tree roots and scarps.

1225 - Pack up truck and move to Head of Slip 3, finally locate locations, call Steve for clarification
1335 - Sample T4RB-K1, 20 cm, 0.0 ppm, NO odor or sheen, dig through riprap.

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1410 - Sample T4RB-K2, 20 cm, 0.1 ppm, no odor or sheen.

1450 - Sample T4RB-BEBRA, 20 cm 0.0 ppm, no odor or sheen.

Pack up truck and drop off Decon water at IDW waste drum.

1520 - call security/OFF site

Scale: 1 square = _____

Rite in the Rain

10/9/20 T4 Riverbank characterization 2372-08

850 - onsite Kyle, matt
Review HASP overcast 57° High 71°
920 - Security opens gates
Prep for sampling, Decon equipment
Cal PID 100.0, move equipment down bank
1015 - Sample T4RB-0J, 20 cm, 0.0 ppm, NO odor or sheen, dig through riprap, original point was in water, moved point on bank, new GPS point collected T4RB-0J-R

Pack truck and move to south side of Slip 3

1055 - sample T4RB-47U, 30 cm, 0.2 ppm, NO odor or sheen.
1130 - sample T4RB-46U, 30 cm, 1.2 ppm, NO odor or sheen

Decon, pack up truck
Document Head of Slip 3 for erosion. The only real issue spot would be at the north end of Slip 3 Head just south of the yellow ship access ramp. The rest of the bank has riprap that extends up to top of bank.

Drop off Decon water at IDW Drum.

1220 - call security / off site

Scale: 1 square = _____

10/12/20 T4 Riverbank 2372-08

0920 - onsite Kyle, Matt
Review HASP Overcast 55° High 64°
30% chance rain

0945 - Security opens gate
Prep for Sampling, Decon Equipment
Cal PID 99.9 ppm, carry equipment down to lower part of bank, down slippery access.

1100 - Sample T4RB-43L, 30 cm, 0.4 ppm, NO odor or sheen.

1135 - Sample T4RB-44L, 30 cm, 0.5 ppm, NO odor or sheen. Go decon equipment.

1210 - Sample T4RB-45L, 30 cm, 0.4 ppm, NO odor or sheen.

1240 - Sample T4RB-46L, 30 cm, 0.4 ppm, NO odor or sheen.

1310 - Sample T4RB-47L, 30 cm, 0.4 ppm, NO odor or sheen.
Finish sampling lower samples at south side of slip 3. Haul equipment up bank, Decon equipment to Sample upper locations

1415 - Sample T4RB-43U, 30 cm, 0.2 ppm, NO odor or Sheen.

1445 - Sample T4RB-44U-001, 30 cm, 0.4 ppm, NO odor or sheen. Also collect DUP-5
Pack equipment to truck, Decon, load truck.

1510 - Drop off Decon at IDW Drum

1520 call security / OFF site

Scale: 1 square = _____

10/13/20 T4 Riverbank 2372-08

1050 - On site Kyle, Matt
Review HASP Overcast 59° High 62°

1120 - Security opens gate
Prep for sampling, Decon equipment
Cal PID 99.9 ppm, carry equipment down to upper bank.

1205 - Sample T4RB-44U, 30 cm, 0.3 ppm, no odor or sheen.

1245 - Sample T4RB-45U-DD2, 30 cm, 0.3 ppm no odor or sheen.

1315 - Sample T4RB-45U-DD3, 30 cm, 0.2 ppm no odor or sheen.

1345 - Sample T4RB-45U, 30 cm, 0.8 ppm, no odor or sheen.

1415 - Sample T4RB-49L, 30 cm, 0.2 ppm, no odor or sheen.

1445 - Sample T4RB-49U, 30 cm, 0.2 ppm, no odor or sheen.

Pack up equipment in truck

Drop off Decon water

1520 - call security/OFF site

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The southside of slip 3 has a shore wall. In the lower section there are areas of riprap, but also a lot of bare sand areas. The upper section of the southside of slip 3 ~~that~~ has a steep bank which is severly eroding. Most of the wood fencing is falling apart and quite a few of the concrete pillars are falling over due to erosion and no support at the foot of the columns.

Scale: 1 square = _____

Rite in the Rain

10/14/20 T4 Riverbank 2372-08

0900 - on site Kyle matt, Andrew late morning
Review HASP Overcast 48° High 62°
80% chance rain at 10 am then dry

0935 - security opens gate
Prep for sampling, Decon equipment
Cal PID 100.3 ppm, carry equipment
down bank

1025 - Sample T4RB-48L, 30 cm, 0.2 ppm
No oder or sheen

1055 - Sample T4RB-48U, 30 cm, 0.2 ppm
No odor or sheen.

1125 - Sample T4RB-50U, 20 cm, 1.9 ppm,
No odor or sheen.

1210 - Sample T4RB-50L, 30 cm, 0.4 ppm,
No odor or sheen.

1220 - Andrew off site
Had to clear branches and blackberry
to get to cell 51 lower locations.

1345 - Sample T4RB-51L, 30 cm, 0.2 ppm,
No odor or sheen, had to move
location ~10 west due to large riprap.
New GPS point T4RB-51L-R.

1425 - Sample T4RB-51L-OD4, 15 cm, 0.2 ppm
No sheen or odor. Had to move location
~8 feet east, it was in water. New GPS
point T4RB-51L-OD4-R.

1450 - sample T4RB-51U, 30 cm, 5.4 ppm,
No odor or sheen.
Pack up Truck
Drop off Decon water

1525 - call security/OFF site

Scale: 1 square = _____

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10/15/20 T4 Riverbank 2372-08

0955 - on site Jake, Kyle, Steve
Review HASP overcast 46° High 64°
Wait for security to open gate
Stage sampling equipment to take down the bank.

1045 - Steve Misner on site

1050 - Security opens gates.
Haul equipment down bank, Decon.
load raft.

1255 - Sample SG04A, 20cm, 19' depth

1325 - Sample SG04B, 15 cm, 19' depth

1340 - Sample SG04C, 20 cm, 15' depth

1400 - Sample SG04 composite

1515 - Sample SG05A, 10 cm, 17' depth

1610 - Sample SG05B, 30 cm, 17' depth

1630 - Sample SG05C, 30cm 17' depth

1655 - sample SG05 composite
At SG05, raft hit a nail on a wooden Pile, had to patch hole.
Andrew on site at 1600.

1700 - Finish sampling for day, haul equipment up bank, pack truck

1730 Andrew off site

1800 call security/OFF Site

Scale: 1 square =_____

10/16/20 T4 Riverbank 2372-08

850 - on site Kyle, Jake, Andrew & wait for Jake to pick up rental raft, old raft has hole.

900 - Security opens gate, start hauling equipment down the bank.

930 - Andrew on site

950 - Jake on site, Review HASP
Part sun 46° High 64°
Inflate raft, load raft, head to SG06

1105 - Sample SG06A, 20 cm, 18' depth

1135 - Sample SG06B, 30 cm, 20' depth.

1200 - Sample SG06C, 12 cm, 10' depth

1230 - Sample SG06 composite
Decon equipment.

1305 - Sample SG07A, 20 cm, 12' depth

1335 - Sample SG07B, 27 cm, 17' depth

1410 - Sample SG07C, 15 cm, 12' depth, sheen on surface of bowl.

1445 - Sample SG07 composite, DUP-06
Decon equipment, paddle to cell 18.

1550 - Sample T4RB-18L-0M, 30 cm, 13' depth
Paddle back to slip 3. Haul boat and equipment back up hill.

1710 - Collect EB sediment sample
Pack up truck
Drop off Decon water at IDW Drum
1 1/2 55 gallon Drums of Decon

1735 - call security / OFF Site

Scale: 1 square = _____

Attachment B

September 30, 2020 Field Audit

APEX
3015 SW First Avenue
Portland, Oregon 97201-4707
(503) 924-4704 Phone
(503) 943-6357 Fax

Field Auditor Name: Sam Jackson

Field Audit Checklist

Project Number: 2372-07
Project Name: T4 Riverbank Characterization
Project Location: T4
Client: Port of Portland
Project Manager: Steve Misner
Field Audit Number: 1
Page 1 of 2
Date: 9/30/2020

Item to be Evaluated	Yes	No	N/A	Comments
Part 1: Record Keeping				
Are there SOPs for field activities and are they accessible to everyone on the sampling team?	✓			
Are COC forms filled out completely and legibly using black, waterproof ink?	✓			
Are all errors in documentation correctedand initiated without obliteration?	✓			
Part 2: Safety				
Is the Heatlh and Safety Plan on site?	✓			Face masks utilized for COVID
Are tailgate safety meetings being conducted at the beginning of each work day and when site conditions change?	✓			
Is there documentation that everyone on the sampling team has read and understands the HASP?	✓			
Does the HASP include emergency contact information and the route to hospital?	✓			
Are proper lifting techniques being used?	✓			
Is the correct PPE being worn?	✓			
Are gloves being worn when collecting and/or handling samples?	✓			
Are new gloves being used for each sample collected?	✓			
Are proper procedures being followed when operating equipment with moving or rotating parts?	✓			
Are the proper tools being used for sampling?	✓			
Are proper procedures being followed when working in confined spaces?			✓	
Are all injuries or accidents being reported immediately to the appropriate supervisor?			✓	
Are all traffic laws and posted signs being obeyed?	✓			

APEX
[illegible] SW Fast Avenue
Portland, Oregon 97201-4707
(503) 924-4704 Phone
(503) 943-6357 Fax

Field Audit Checklist Continued

Project Number: 2372-07
Project Name: T4 Riverbank Characterization
Page 2 of 2
Date: 9/30/2020

Item to be Evaluated	Yes	No	N/A	Comments
Part 3: Sampling Equipment				
Is the correct sampling equipment being used for the project?	✓			Hand auger with acceptable recovery.
Is the sampling equipment inspected before use and repaired/replaced when needed?	✓			
Is the sampling equipment properly cleaned before each use following decontamination procedures in the SAP?	✓			
Is the sampling equipment properly stored when not in use?	✓			
Is an equipment blank being performed?		✓		Equipment blank will be collected for each collection method; however, none performed during this audit.
Part 4: Sampling				
Are sample containers the correct material, correct size, in good condition and contain the correct preservation?	✓			See photo
Are samples collected for all required analyses?	✓			
Are samples being collected using the appropriate sampling method?	✓			see photo
Is care taken to avoid sample contamination?	✓			
Part 5: Sample Handling				
Are samples uniquely identified to ensure no confusion regarding identity of such samples at any time?	✓			
Are samples placed on ice immediately after collection?	✓			
Are samples recorded on the chain-of-custody form immediately following collection?	✓			
Are samples stored and transported on ice?	✓			
Are samples protected from breakage and cross-contamination during transport?	✓			
Are samples shipped in a timely manner?	✓			Samples to Apex Labs.

Additional Notes:
Observed sample collection for: T4RB-2L; T4RB-2U; and T4RB-3L. Apex staff (Kyle Kline and Matt Enos) performed sampling activities.

Appendix C

Soil Sample Logs

Apex Companies, LLC 3015 SW First Avenue APEX Portland, Oregon 97201	Riverbank Characterization Report Terminal 4 Action Area Portland, Oregon	Soil Locations: **Various** Project Number: **2372-08** Logged By: K. Kline Date: September 28 to October 14, 2020 Site Conditions: -- Drilling Contractor: Apex Drilling Equipment: -- Sampler Type: Hand Auger/Shovel Depth to Water (ATD): -- Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-1U	<5	--	Silty SAND (SM); medium brown, slightly moist, poorly graded, loose, some sub-rounded gravel. Bottom of Boring T4RB-1U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-1U-OS	<5	--	Silty SAND (SM); medium brown, moist, poorly graded, loose, some sub-rounded gravel. Bottom of Boring T4RB-1U-OS at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-1L	<5	--	SAND (SP); medium brown, wet, poorly graded, loose. Bottom of Boring T4RB-1L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-2U	<5	--	SAND (SP); medium brown, moist, loose, trace sub-rounded gravel. Bottom of Boring T4RB-2U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-2L	<5	--	SAND with gravel (SW); medium brown, wet, well graded, loose, fine and coarse sub-rounded gravel. Bottom of Boring T4RB-2L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-3U	<5	--	SAND (SP); medium brown, moist, poorly graded, loose. Bottom of Boring T4RB-3U at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-3L	<5	--	SAND (SW); medium brown, wet, well graded, loose. Bottom of Boring T4RB-3L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-4U	<5	--	Silty SAND (SM); dark brown, dry to slightly moist, well graded, loose, trace sub-angular gravel. Bottom of Boring T4RB-4U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-4U-OR	<5	--	SAND (SW); medium brown, slightly moist, well graded, loose, sub-rounded gravel. Bottom of Boring T4RB-4U-OR at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-4L	<5	--	SAND (SW); medium brown, wet, well graded, loose, sub-rounded gravel. Bottom of Boring T4RB-4L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-5U	<5	--	Silty SAND with gravel (SM-GW); dark brown, slightly moist, well graded, loose, rounded gravel, trace roots and woody debris. Bottom of Boring T4RB-5U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-5L	<5	--	SAND with gravel (SW); medium brown, slightly moist, well graded, loose. Boring T4RB-5L Refusal at 10 Centimeters BGS.	10 20 30

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-6U	<5	--	Silty SAND with gravel (SM-GW); medium brown, slightly moist, well graded, loose, sub-rounded gravel. Bottom of Boring T4RB-6U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-7L	<5	--	Silty SAND with gravel (SM-GW); medium brown, wet, well graded, loose, sub-angular to sub-rounded gravel. Bottom of Boring T4RB-7L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-7U	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose, trace sub-rounded gravel. Bottom of Boring T4RB-7U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-8L	<5	--	SAND (SP); medium brown, slightly moist, loose, trace roots. SILT with fine sand (ML); grayish brown with orange mottling, moist, low plastic, medium stiff, trace clay. Bottom of Boring T4RB-8L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-8U	<5	--	Fine SAND with some silt (SM); medium brown, slightly moist, poorly graded, loose, trace roots. Bottom of Boring T4RB-8U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-9U	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose, trace gravel and roots. Bottom of Boring T4RB-9U at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-9L	<5	--	SAND with silt and gravel (SW); medium brown, moist, well graded, loose, sub-angular gravel, trace roots. Bottom of Boring T4RB-9L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-10U	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose, trace roots. Bottom of Boring T4RB-10U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-10L	<5	--	SAND (SP); medium brown, dry to slightly moist, poorly graded, loose. Bottom of Boring T4RB-10L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-11U	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose, trace roots. Bottom of Boring T4RB-11U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-11L	<5	--	SAND with some gravel (SW); medium brown, slightly moist, well graded, loose, sub-rounded gravel, trace roots. Bottom of Boring T4RB-11L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-16U	<5	--	Silty SAND (SM); medium brown, slightly moist, poorly graded, loose, trace gravel and roots/woody Boring T4RB-16U Refusal at 20 Centimeters BGS.	10 20 30

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Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-16L	<5	--	SAND (SP); medium brown, wet, poorly graded, loose, trace gravel. Boring T4RB-16L Refusal at 20 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-16L-O52C	<5	--	SAND (SP); medium brown, wet, poorly graded, loose, trace gravel. Bottom of Boring T4RB-16L-O52C at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-16L-OO	<5	--	SAND (SP); medium brown, wet, poorly graded, loose, trace gravel. Bottom of Boring T4RB-16L-OO at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-17U	<5	--	Silty SAND (SM); dark brown, slightly moist, loose, trace organics. Boring T4RB-17U Refusal at 22 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-17L	<5	--	Silty SAND with gravel (SM); dark brown, moist to wet, well graded, medium dense. Boring T4RB-17L Refusal at 20 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-17L-ON	<5	--	Silty SAND with gravel (SM); dark brown, wet, medium dense. Bottom of Boring T4RB-17L-ON at 30 Centimeters BGS.	10 20 30

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Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-18U	<5	--	SAND with silt (SM); medium brown, slightly moist, poorly graded, loose. Bottom of Boring T4RB-18U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-18L	<5	--	SAND with silt (SM); medium brown, slightly moist, poorly graded, loose. Bottom of Boring T4RB-18L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-19U	<5	--	SAND with gravel (SW); light tan brown, dry, well graded, loose. Bottom of Boring T4RB-19U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-19L	<5	--	SAND (SP); medium brown, dry, poorly graded, loose. Bottom of Boring T4RB-19L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-20U	<5	--	SAND with silt (SM); light brown, dry, poorly graded, loose, trace gravel and concrete. Bottom of Boring T4RB-20U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-20L	<5	--	SAND (SP); medium brown, slightly moist to moist, poorly graded, loose. Bottom of Boring T4RB-20L at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-21U	<5	--	SAND with silt (SM); light brown, dry to slightly moist, poorly graded, loose, trace gravel. Bottom of Boring T4RB-21U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-21L	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose. Bottom of Boring T4RB-21L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-22U	<5	--	SAND with silt (SP); light brown, dry, poorly graded, loose, trace woody debris. Boring T4RB-22U Refusal at 20 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-22L	<5	--	Gravelly SAND (SW); medium brown, slightly moist, well graded, loose. Bottom of Boring T4RB-22L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-23U	<5	--	Slightly silty medium SAND (SM); medium brown, slightly moist, loose, fine and coarse rounded gravel. Bottom of Boring T4RB-23U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-23L	<5	--	Medium SAND (SP); medium brown, slightly moist to moist, poorly graded, loose, trace rounded gravel. Bottom of Boring T4RB-23L at 30 Centimeters BGS.	10 20 30

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Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Shovel	T4RB-24U	<5	--	Medium SAND (SP); medium brown, slightly moist, poorly graded, loose. Bottom of Boring T4RB-24U at 30 Centimeters BGS.	10 20 30
10 20 30	Shovel	T4RB-24L	<5	--	Gravel surface, medium SAND (SP) with some gravel; medium brown, moist to wet, poorly graded, loose. Bottom of Boring T4RB-24L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-25U	<5	--	Medium SAND (SP); medium brown, dry, poorly graded, loose. Bottom of Boring T4RB-25U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-25L	<5	--	SILT with fine sand (ML); grayish brown, moist, non-plastic, soft, trace clay. Bottom of Boring T4RB-25L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-26U	<5	--	Medium SAND (SP); medium brown, slightly moist, poorly graded, loose. Bottom of Boring T4RB-26U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-26L	<5	--	Medium SAND (SP); medium brown, slightly moist, poorly graded, loose, trace sub-rounded gravel. Bottom of Boring T4RB-26L at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Riverbank Characterization Report Terminal 4 Action Area Portland, Oregon	Soil Locations: **Various** Project Number: **2372-08** Logged By: K. Kline Date: September 28 to October 14, 2020 Site Conditions: -- Drilling Contractor: Apex Drilling Equipment: -- Sampler Type: Hand Auger/Shovel Depth to Water (ATD): -- Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Shovel	T4RB-27U	<5	--	SILT with fine sand (ML); dark brown, slightly moist, non-plastic, soft, grass roots. Boring T4RB-27U Refusal at 13 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-27L	<5	--	SAND with some silt (SP); medium brown, slightly moist, poorly graded, loose, trace sub-rounded gravel. Boring T4RB-27L Refusal at 21 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-28U	<5	--	Sandy SILT with gravel (ML); dark brown, slightly moist, soft. Bottom of Boring T4RB-28U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-28L	<5	--	Sandy GRAVEL with silt (GM); grayish brown, slightly moist, well graded, medium dense. Boring T4RB-28L Refusal at 15 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-29U	<5	--	SAND with silt and gravel (SW); dark brown, slightly moist, well graded, loose. Bottom of Boring T4RB-29U at 30 Centimeters BGS.	10 20 30
10 20 30	Shovel	T4RB-29L	<5	--	Silty SAND (SM); medium brown, slightly moist, poorly graded, loose. Bottom of Boring T4RB-29L at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-43U	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose, trace gravel. Bottom of Boring T4RB-43U at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-43L	<5	--	SAND with some silt and gravel (SW); medium brown, wet, well graded, loose. Bottom of Boring T4RB-43L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-44U	<5	--	SAND with silt (SM); medium brown, moist, loose, trace gravel. Bottom of Boring T4RB-44U at 30 Centimeters BGS.	10 20 30
10 20 30	Shovel	T4RB-44U-OD1	<5	--	SAND (SP); medium brown, slightly moist, poorly graded, loose, trace gravel. Bottom of Boring T4RB-44U-OD1 at 30 Centimeters BGS.	10 20 30
10 20 30	Shovel	T4RB-44L	<5	--	SAND (SP); medium brown, wet, poorly graded, loose. Sandy SILT (ML); gray to brown, wet, medium stiff. Bottom of Boring T4RB-44L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-45U	<5	--	SAND with silt (SM); medium brown, moist, loose, trace roots and gravel. Bottom of Boring T4RB-45U at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC 3015 SW First Avenue APEX Portland, Oregon 97201	Riverbank Characterization Report Terminal 4 Action Area Portland, Oregon	Soil Locations: **Various** Project Number: **2372-08** Logged By: K. Kline Date: September 28 to October 14, 2020 Site Conditions: -- Drilling Contractor: Apex Drilling Equipment: -- Sampler Type: Hand Auger/Shovel Depth to Water (ATD): -- Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-45U-OD2	<5	--	SAND with silt (SM); medium brown, moist, loose, trace gravel and roots. Bottom of Boring T4RB-45U-OD2 at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-45U-OD3	<5	--	SAND with silt (SM); medium brown, slightly moist to moist, loose, trace roots and gravel. Bottom of Boring T4RB-45U-OD3 at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-45L	<5	--	SAND (SP); medium brown, moist to wet, poorly graded, loose. Bottom of Boring T4RB-45L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-46U	<5	--	SAND with silt (SM); medium brown, slightly moist, loose, trace gravel. Bottom of Boring T4RB-46U 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-46L	<5	--	SAND (SP); medium brown, moist to wet, well graded, loose, trace rounded gravel. Bottom of Boring T4RB-46L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-47U	<5	--	SAND with gravel (SW); medium brown, slightly moist, well graded, loose, sub-rounded gravel. Bottom of Boring T4RB-47U at 30 Centimeters BGS.	10 20 30

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Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-47L	<5	--	SAND (SP); medium brown, moist to wet, poorly graded, loose, trace roots. Bottom of Boring T4RB-47L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-48U	<5	--	Sandy GRAVEL (GW); medium brown, moist to wet, well graded, loose, sub-angular gravel. Boring T4RB-48U Refusal at 20 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-48L	<5	--	SAND with silt and gravel (SW); medium brown, wet, well graded, loose. Bottom of Boring T4RB-48L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-49U	<5	--	SAND with silt (SM); medium brown, moist, loose, trace gravel. Bottom of Boring T4RB-49U 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-49L	<5	--	SAND with silt (SM); medium brown, moist to wet, loose, trace gravel and roots. Bottom of Boring T4RB-49L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-50U	<5	--	SILT with fine sand and gravel (ML); light brown, slightly moist, medium stiff. Boring T4RB-50U Refusal at 20 Centimeters BGS.	10 20 30

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Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Soil Locations: **Various**
Project Number: **2372-08**
Logged By: K. Kline
Date: September 28 to October 14, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Hand Auger/Shovel
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-50L	<5	--	SAND with silt (SP); medium brown, moist to wet, poorly graded, loose. Bottom of Boring T4RB-50L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-51U	5	--	SILT with fine sand and gravel (ML); medium brown, slightly moist, medium stiff, well graded gravel. Boring T4RB-51U Refusal at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-51L	<5	--	SAND (SP); medium brown, wet, poorly graded, loose, trace gravel. Bottom of Boring T4RB-51L at 30 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-51L-OD4	<5	--	Sandy GRAVEL with silt (GW); medium brown, wet, well graded, loose. Bottom of Boring T4RB-51L-OD4 15 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-K1	<5	--	Silty SAND with gravel (SM); grayish brown, wet, loose. Boring T4RB-K1 Refusal at 20 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-K2	<5	--	Sandy GRAVEL (GW); dark brown, moist, well graded, loose. Boring T4RB-K2 Refusal at 20 Centimeters BGS.	10 20 30

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Riverbank Characterization Report Terminal 4 Action Area Portland, Oregon	Soil Locations: **Various** Project Number: **2372-08** Logged By: K. Kline Date: September 28 to October 14, 2020 Site Conditions: -- Drilling Contractor: Apex Drilling Equipment: -- Sampler Type: Hand Auger/Shovel Depth to Water (ATD): -- Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Soil Details and Notes:
10 20 30	Hand Auger	T4RB-BEBRA	<5	--	Silty SAND with gravel (SM); dark brown, slightly moist, well graded, loose. Boring T4RB-BEBRA Refusal at 20 Centimeters BGS.	10 20 30
10 20 30	Hand Auger	T4RB-OJ	<5	--	Silty SAND with gravel (SM); grayish brown, slightly moist, well graded, loose to medium dense. Boring T4RB-OJ Refusal at 20 Centimeters BGS.	10 20 30

Appendix D

Sediment Sample Logs

Apex Companies, LLC
3015 SW First Avenue
APEX Portland, Oregon 97201

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Sediment Numbers: **Various**

Project Number: **2372-08**
Logged By: K. Kline
Date: October 15-16, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Corer
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Sediment Details and Notes:
10 20 30	Corer	SG04A	<5	--	Fine SAND (SP); medium brown, wet, poorly graded, medium dense. Bottom of Boring SG04A at 20 Centimeters BGS.	10 20 30
10 20 30	Corer	SG04B	<5	--	Fine SAND (SP); medium brown, wet, poorly graded, medium dense. Bottom of Boring SG04B at 15 Centimeters BGS.	10 20 30
10 20 30	Corer	SG04C	<5	--	Fine SAND (SP); medium brown, wet, poorly graded, medium dense. Bottom of Boring SG04C at 20 Centimeters BGS.	10 20 30
10 20 30	Corer	SG05A	<5	--	Fine sandy SILT (ML); dark brown, wet, soft, trace gravel and woody debris. Bottom of Boring SG05A at 10 Centimeters BGS.	10 20 30
10 20 30	Corer	SG05B	<5	--	Fine SAND (SP); medium brown, wet, poorly graded, medium dense, trace silt. Bottom of Boring SG05B at 30 Centimeters BGS.	10 20 30
10 20 30	Corer	SG05C	<5	--	Fine SAND (SP); medium brown, wet, poorly graded, medium dense. Bottom of Boring SG05C at 30 Centimeters BGS.	10 20 30

Apex Companies, LLC
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Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Sediment Numbers: **Various**

Project Number: **2372-08**
Logged By: K. Kline
Date: October 15-16, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Corer
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Sediment Details and Notes:
10 20 30	Corer	SG06A	<5	--	Sandy SILT (ML); grayish brown, wet, non-plastic, soft, trace gravel. Bottom of Boring SG06A at 20 Centimeters BGS.	10 20 30
10 20 30	Corer	SG06B	<5	--	Sandy SILT (ML); medium gray, wet, non-plastic, soft, trace gravel. Bottom of Boring SG06B at 30 Centimeters BGS.	10 20 30
10 20 30	Corer	SG06C	<5	--	Silty SAND with gravel (SM); brownish gray, wet, well graded, medium dense. Bottom of Boring SG06C at 12 Centimeters BGS.	10 20 30
10 20 30	Corer	SG07A	<5	--	Fine SAND (SP); brownish gray, wet, poorly graded, medium dense, trace silt. Bottom of Boring SG07A at 20 Centimeters BGS.	10 20 30
10 20 30	Corer	SG07B	<5	--	Fine sandy SILT (ML); grayish brown, wet, non-plastic, soft, trace woody debris. Bottom of Boring SG07B at 22 Centimeters BGS.	10 20 30
10 20 30	Corer	SG07C	<5	--	Silty SAND (SM); grayish brown, wet, medium dense, trace woody debris, sheen. Bottom of Boring SG07C at 15 Centimeters BGS.	10 20 30

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Sediment Numbers: **Various**

Project Number: **2372-08**
Logged By: K. Kline
Date: October 15-16, 2020
Site Conditions: --
Drilling Contractor: Apex
Drilling Equipment: --
Sampler Type: Corer
Depth to Water (ATD): --
Surface Elevation: --

Depth, Centimeters	Core Interval/Recovery	Laboratory Sample ID	PID	Sheen	Material Description	Sediment Details and Notes:
10 20 30	Corer	T4RB-18L-OM	<5	--	Sandy SILT (ML); brownish gray, wet, non-plastic, soft, trace woody debris. Bottom of Boring T4RB-18L-OM at 30 Centimeters BGS.	10 20 30

Appendix E

Field Change Requests and EPA Approvals

APEX
3015 SW First Avenue
Portland, Oregon 97201-4707
(503) 924-4704 Phone
(503) 943-6357 Fax

FIELD CHANGE REQUEST FORM

PROJECT NUMBER 2372-08
FIELD REPORT NUMBER 1
PAGE 1 OF 1
DATE 10/1/2020

PROJECT Port of Portland Terminal 4 Riverbank Sampling
APEX PROJECT MANAGER Steve Misner
LOCATION *North side of Slip1*
CLIENT Port of Portland

Description of modification:

No sample was collected from proposed riverbank soil sampling location T4RB-6L.

Reason for modification:

Unable to collect sample due to the presence of heavy rip-rap throughout the lower cell (see attached photograph).

Reference to Work Plan/SAP/QAPP (pg # and section):

Terminal 4 Action Area Riverbank Characterization Work Plan Section 4.2, Table 2 and Figure 4.

REVIEW AND APPROVAL

Review comments:

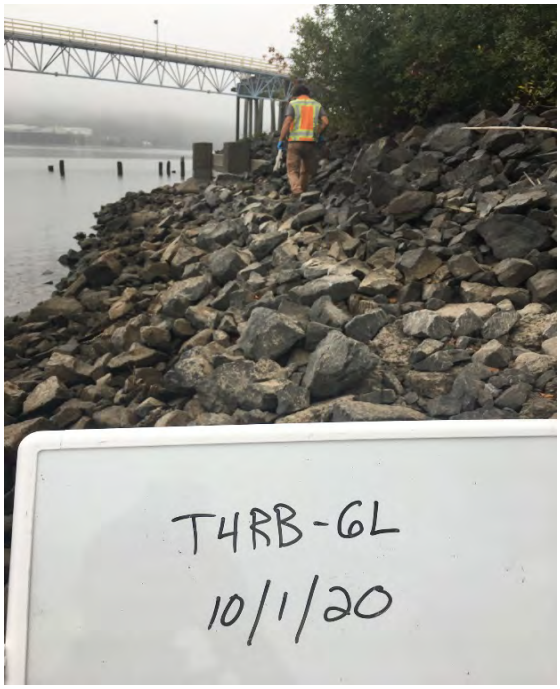
Approval documentation:

_____ Port (email or phone) Date: _____ Port Personnel: _____

_____ EPA (email) Date: _____ EPA Personnel: _____

Approval comments/notes:

EPA APPROVAL MUST BE RECEIVED IN WRITING (EMAIL) PRIOR TO IMPLEMENTING CHANGES TO THE SOW



Photograph 1: Proposed Sample Location T4RB-6L, view to northwest.

From: Clark, Josie
To: kelly.madalinski@portofportland.com
Cc: Peterson, Lance; Schamber, Andrew R.; Steve Misner; Herb Clough
Subject: [EXT] RE: T4 Riverbank Sampling - Field Change Request #1
Date: Friday, October 2, 2020 11:49:24 AM
Attachments: image001.gif

CAUTION

Hello Kelly,

EPA has reviewed the Port's field change request form dated 10/1/20 which proposes to deleted sample T4RB-6L due to the presence of heavy rip rap. The field change request is approved with the caveat that this portion of the river bank may remain a data gap for 100% remedial design.

Thanks,

Josie Clark
Remedial Project Manager, EPA R10
206-390-9263 (cell)
clark.josie@epa.gov

From: Madalinski, Kelly <Kelly.Madalinski@portofportland.com>
Sent: Friday, October 02, 2020 9:37 AM
To: Clark, Josie <Clark.Josie@epa.gov>
Cc: Peterson, Lance <petersonle@cdmsmith.com>; Schamber, Andrew R. <schamberar@cdmsmith.com>; Steve Misner <Steve.Misner@apexcos.com>; Herb Clough <Herb.Clough@ApexCos.com>
Subject: T4 Riverbank Sampling - Field Change Request #1

Hi Josie,

Well, I spoke too soon about the T4 riverbank sampling effort. The field team ran into heavy rip rap yesterday and was unable to take a sample in one of the sampling cells.

Per the approved Work Plan, please see attached the field change request form on the proposed change for being unable to collect sample, T4RB-6L due to heavy rip rap. There is an excellent picture of what they are facing in some of the locations out there. The Work Plan requires EPA approval of this change via email response.

Please let us know if you have any questions.

Thanks!
Kelly

Kelly Madalinski
Harbor Environmental Mgr
LW Project Mgmt & Other
T: 503.415.6676
F: 503.548.5880
C: 503.349.7526
Kelly.Madalinski@portofportland.com



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3015 SW First Avenue
Portland, Oregon 97201-4707
(503) 924-4704 Phone
(503) 943-6357 Fax

FIELD CHANGE REQUEST FORM

PROJECT NUMBER 2372-08
FIELD REPORT NUMBER 2
PAGE 1 OF 1
DATE 10/13/2020

PROJECT **Port of Portland Terminal 4 Riverbank Sampling** APEX PROJECT MANAGER Steve Misner
LOCATION *Berth 408* CLIENT Port of Portland

Description of modification:

The end of the outfall in cell 18 (east end of Berth 408) ends at a location that is over water. Since this location is in-water, this sample (T4RB-18L-OM) is a surface sediment sample and not a riverbank soil sample.

Reason for modification:

Change in sample matrix due to location.

Reference to Work Plan/SAP/QAPP (pg # and section):

Terminal 4 Action Area Riverbank Characterization Work Plan Sections 4.1 and 4.2, Table 2 and Figure 4.

REVIEW AND APPROVAL

Review comments:

Approval documentation:

_____ Port (email or phone) Date: _____ Port Personnel: _____

_____ EPA (email) Date: _____ EPA Personnel: _____

Approval comments/notes:

*****EPA APPROVAL MUST BE RECEIVE IN WRITING (EMAIL) PRIOR TO IMPLEMENTING CHANGES TO THE SOW*****

From: Clark, Josie
To: kelly.madalinski@portofportland.com
Cc: Peterson, Lance; Schamber, Andrew R.; Steve Misner; Herb Clough
Subject: [EXT] RE: T4 Riverbank Sampling - Berth 405 access and Field Change #2
Date: Wednesday, October 14, 2020 10:14:53 PM
Attachments: image001.gif

CAUTION

Hi Kelly,

Thanks for the phone call on this. Sorry I didn't have time to talk when you called.

EPA has reviewed the Port's field change request form dated 10/13/20 which proposes to change a sample type from a riverbank soil sample to a surface sediment sample due to the overwater position of the outfall at sampling cell 18. The field change request is approved.

In addition, EPA acknowledges the Port's intention to defer riverbank sampling in sampling cells 12, 13, 14, and 15 due to the structural condition of the dock at Berth 405 (former Pier 1). The Port intends to capture in the data summary report how this change in sampling may affect the preliminary remedial design effort at Terminal 4. EPA reminds the Port that Section 3.3 of the ROD states: "Non-functional or movable structures are expected to be removed or moved to allow access to contaminated material and implementation of the Technology Application Decision Tree as if no structure was present." Consistent with the Technology Application Decision Tree (ROD Figure 28), non-functional structures will be removed. Based on the Selected Remedy, the dock will be removed and remediated via dredging and capping so it should be expected that remedial design data are needed to design the remedy in this area. Let me know if you'd like to discuss this topic and we can set up a call.

Thanks,

Josie Clark
Remedial Project Manager, EPA R10
206-390-9263 (cell)
clark.josie@epa.gov

From: Madalinski, Kelly <Kelly.Madalinski@portofportland.com>
Sent: Tuesday, October 13, 2020 2:18 PM
To: Clark, Josie <Clark.Josie@epa.gov>
Cc: Peterson, Lance <petersonle@cdmsmith.com>; Schamber, Andrew R. <schamberar@cdmsmith.com>; Steve Misner <Steve.Misner@apexcos.com>; Herb Clough <Herb.Clough@ApexCos.com>
Subject: T4 Riverbank Sampling - Berth 405 access and Field Change #2

Hi Josie,

This is a follow-up to my v-mail message this morning. As I mentioned, the riverbank sampling effort at Terminal 4 continues and overall is going well. The field work will likely conclude this week. In assessing the area of Berth 405 (former Pier 1), the Port does not consider the current structural integrity of the pier to be sound; and therefore safe for the field crew to access the underneath portion of the structure to collect riverbank soil samples. Due to these health and safety considerations, the Port is not planning at this time to collect riverbank samples as originally identified in the Riverbank Characterization Work Plan (Work Plan) for the Berth 405 area.

As outlined in the Work Plan, the former Pier 1 dock (Berth 405) is a pile-supported pier located in Slip 1, from the head to approximately the midpoint of the slip, on the north side (see Figure 2 of the Work Plan). Approximately 9 locations were identified for collecting samples (8 to be analyzed and 1 to be archived) under Berth 405 in sampling cells 12, 13, 14, and 15 (see Table 2 of the Work Plan). The former Pier 1 dock is in dilapidated condition and has not been pursued for marine use since the dismantling of the warehouses in the late 1990s. As a result of its condition, the Port considers it not safe, at this time, to access and collect samples. The Port will capture in the data summary report how this change in sampling may affect the preliminary remedial design effort at Terminal 4.

Finally, on a different matter related to the sampling, please see attached a field change request form to change a sample type from a riverbank soil sample to a surface sediment sample. At the end of an outfall in sampling cell 18 (east end of Berth 408), the location is overwater.

Please let me know if EPA has any questions or wishes to discuss further.

Thanks!
Kelly

Kelly Madalinski
Harbor Environmental Mgr
LW Project Mgmt & Other
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F: 503.548.5880
C: 503.349.7526
Kelly.Madalinski@portofportland.com

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(503) 943-6357 Fax

FIELD CHANGE REQUEST FORM

PROJECT NUMBER 2372-08
FIELD REPORT NUMBER 3
PAGE 1 OF 1
DATE 10/16/2020

PROJECT **Port of Portland Terminal 4 Riverbank Sampling** APEX PROJECT MANAGER Steve Misner
LOCATION *Pier 5 sediment* CLIENT Port of Portland

Description of modification:

Attempts to collect sediment samples using a side filling chambered-type discrete-point sampler were unsuccessful because sediment was not retaining in the chamber. Collection of sediment samples is successful using a universal polycarbonate corer equiped with a check-valve and the sediment samples will be collected using this equipment.

Reason for modification:

Change in sample collection equipment due to unsuccesful attempts using equipment specified in the Work Plan.

Reference to Work Plan/SAP/QAPP (pg # and section):

Terminal 4 Action Area Riverbank Characterization Work Plan Section 4.2, SAP Section 4.2.

REVIEW AND APPROVAL

Review comments:

Approval documentation:

_____ Port (email or phone) Date: _____ Port Personnel: _____

_____ EPA (email) Date: _____ EPA Personnel: _____

Approval comments/notes:

*****EPA APPROVAL MUST BE RECEIVE IN WRITING (EMAIL) PRIOR TO IMPLEMENTING CHANGES TO THE SOW*****

From: Clark, Josie
To: kelly.madalinski@portofportland.com
Cc: Peterson, Lance; Schamber, Andrew R.; Herb Clough; Steve Misner
Subject: [EXT] RE: T4 Riverbank Sampling - Field Change Request #3 and Completed
Date: Tuesday, October 20, 2020 7:34:34 AM
Attachments: image001.gif

CAUTION

Hello Kelly,

Great to hear you are all wrapped up with the field work. EPA has reviewed the Port's field change request form dated 10/16/20 which proposes a change in sample collection equipment due to unsuccessful attempts using equipment specified in the Work Plan. The field change request is approved.

Thanks,

Josie Clark
Remedial Project Manager, EPA R10
206-390-9263 (cell)
clark.josie@epa.gov

From: Madalinski, Kelly <Kelly.Madalinski@portofportland.com>
Sent: Friday, October 16, 2020 5:46 PM
To: Clark, Josie <Clark.Josie@epa.gov>
Cc: Peterson, Lance <petersonle@cdmsmith.com>; Schamber, Andrew R. <schamberar@cdmsmith.com>; Herb Clough <Herb.Clough@ApexCos.com>; Steve Misner <Steve.Misner@apexcos.com>
Subject: T4 Riverbank Sampling - Field Change Request #3 and Completed

Hi Josie,

I'm pleased to let EPA know the Port has wrapped up the field work today for collecting the samples at T4.

Also, per the approved Work Plan, please see attached field change request form #3 on the change of equipment to collect sediment samples in the former Pier 5 area. As you may recall, the PDI sampling effort was unsuccessful in collecting the sediment sampling in this location and part of the scope here was to collect these samples. Apex did excellent work to collect those samples – bringing out 3 different types of equipment and trying two modes of watercraft in attempt to collect the samples. The Work Plan requires EPA approval of this change via email response.

Please let me know if you have any questions. Enjoy the weekend!
Kelly

Kelly Madalinski
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C: 503.349.7526
Kelly.Madalinski@portofportland.com

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Appendix F

Topographic Survey Maps



No.	Revision/Issue	Date
	DRAFT A1	02/16/2021

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PORT OF PORTLAND - T4 RIVERBANK SAMPLING IMPLEMENTAION

RIVERBANK CHARACTERIZATION

OVERALL PLAN VIEW/ SHEET KEY

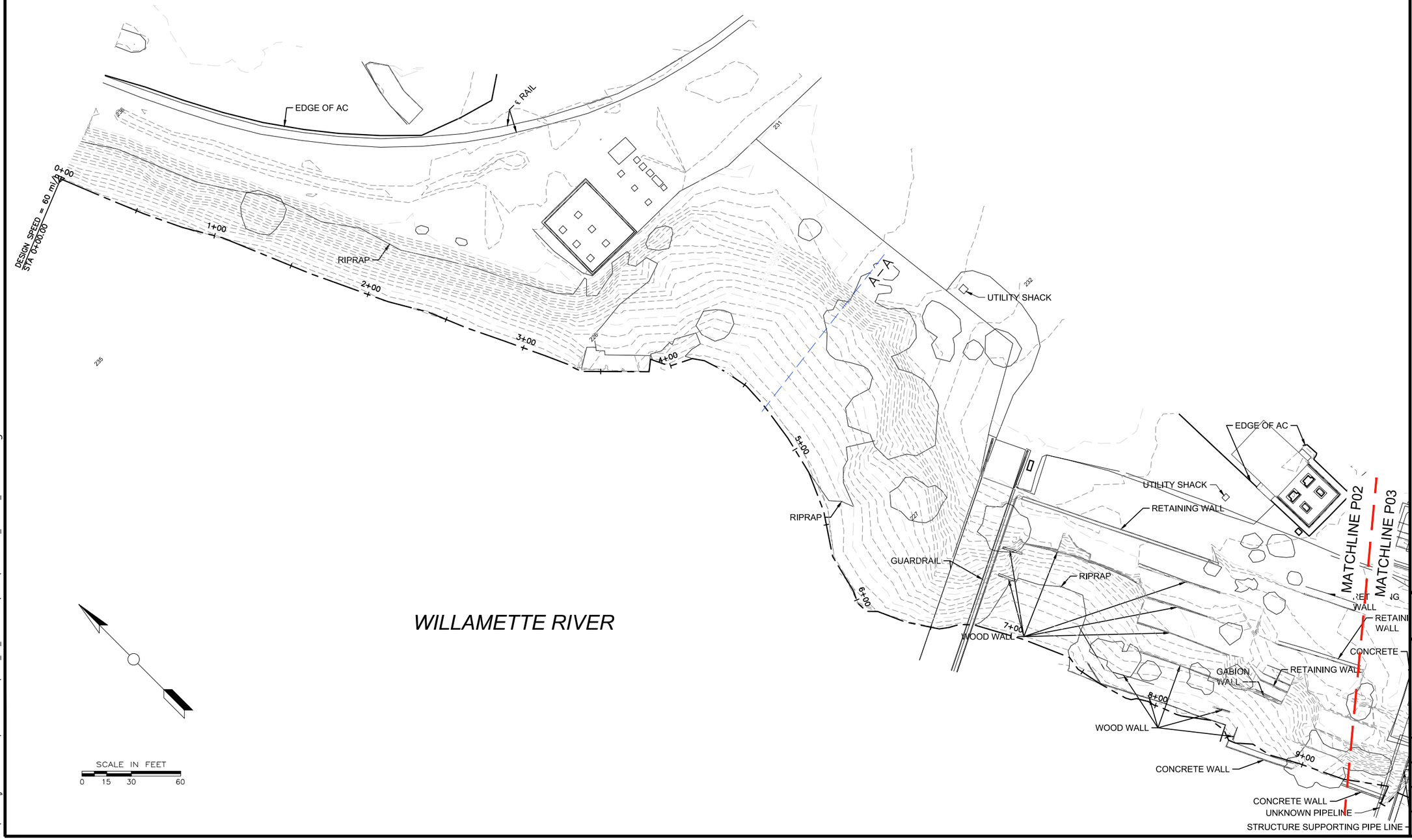
MULTNOMAH COUNTY, OREGON

APEX
1746 Cole Blvd., Bldg. 21 Suite 265
Lakewood, Colorado 80401
303.487.1020

SHEET TITLE:
PORT OF PORTLAND
T4 RIVERBANK SAMPLING
IMPLENENTATION
PORTLAND, OR 97232

Drawn by:	Reviewed by:
JL	MM
Project: 32002372-08	Sheet: P01
Date: 02/16/2021	
Scale: As Noted	

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	DRAFT #1	02/16/2021

DRAFT
NOT FOR CONSTRUCTION

PORT OF PORTLAND - T4 RIVERBANK SAMPLING IMPLEMENTAION

RIVERBANK CHARACTERIZATION

EAST SHORELINE CENTERLINE ALIGNMENT

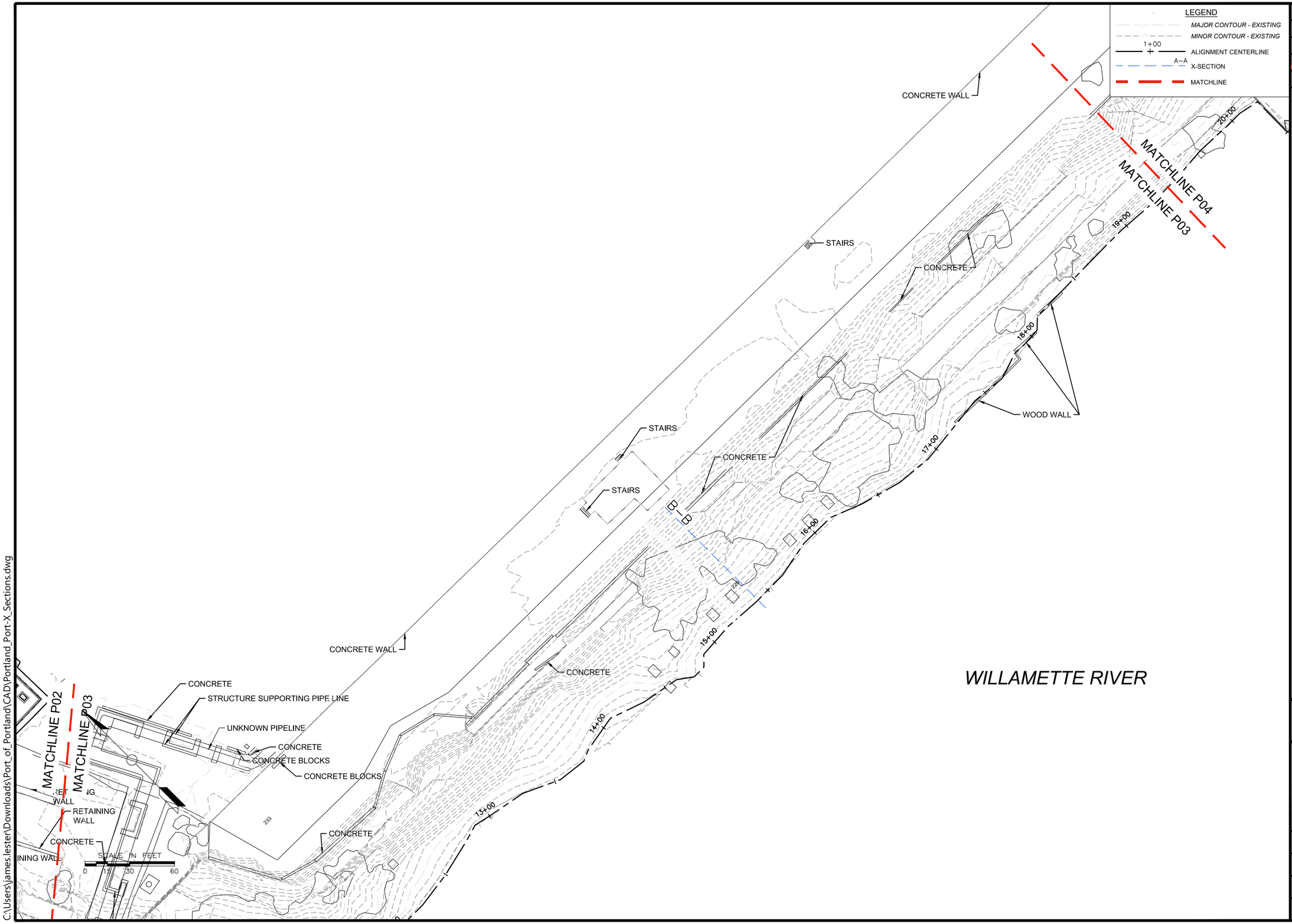
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PORT OF PORTLAND - T4 RIVERBANK SAMPLING IMPLEMENTAION

RIVERBANK CHARACTERIZATION

EAST SHORELINE CENTERLINE ALIGNMENT

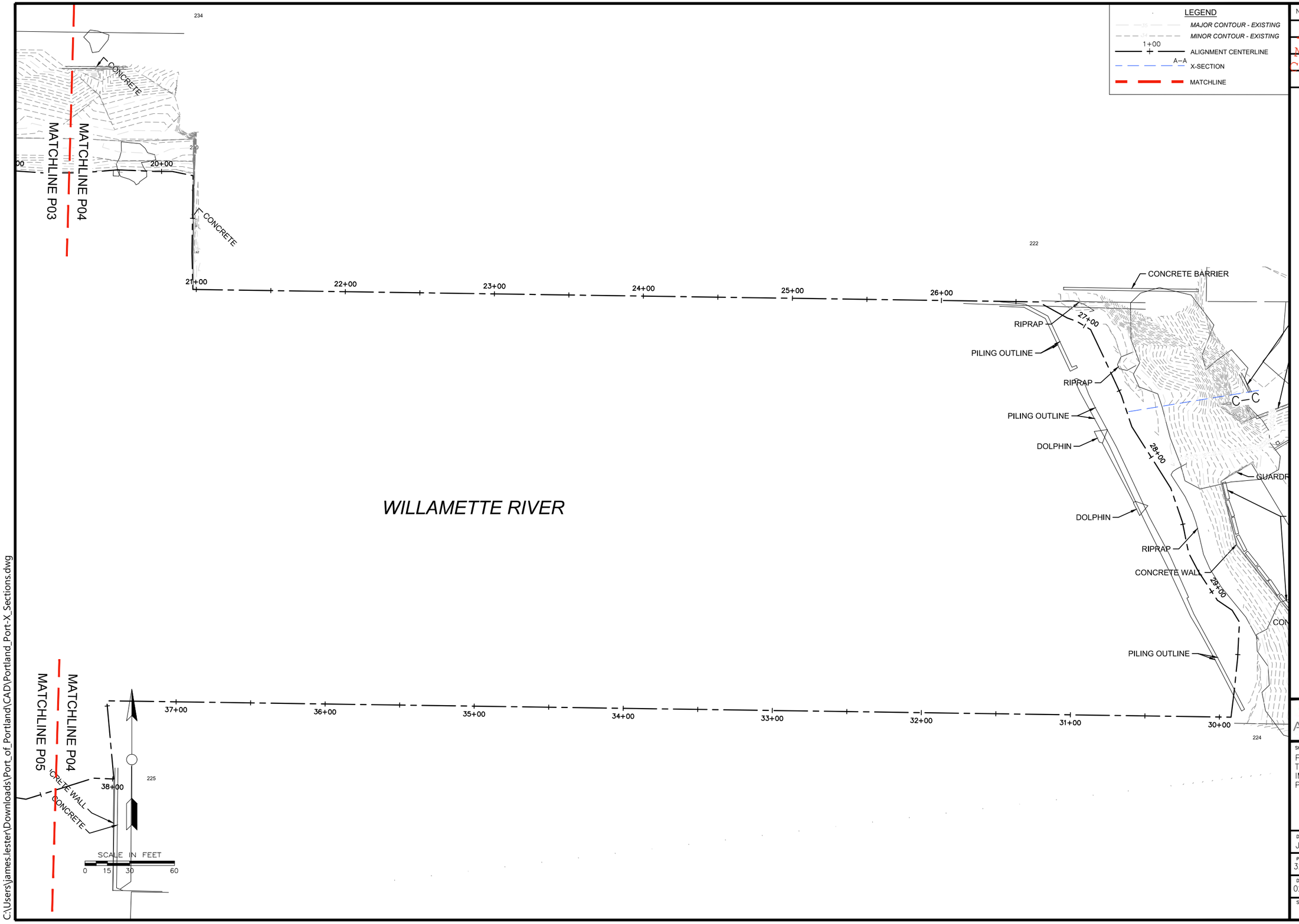
MULTNOMAH COUNTY, OREGON

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RIVERBANK CHARACTERIZATION

EAST SHORELINE CENTERLINE ALIGNMENT

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WILLAMETTE RIVER

16+00

MATCHLINE P04

MATCHLINE P05

38+00

39+00

40+00

41+00

42+00

43+00

44+00

45+00

46+00

47+00

48+00

49+00

50+00

51+00

225

218

210

217

211

'CRETE WALL

CONCRETE

D–D

RR TIES

CONCRETE BLOCK WALL

RIPRAP

RR TIE WALL

UNKNOWN

UNKNOWN

E–E

"US COAST GUARD
RESTRICTED
NAVIGATION AREA"

UNKNOWN

RIPRAP

MATCHLINE P05

MATCHLINE P06

PILING OUTLINE

LEGEND

- MAJOR CONTOUR - EXISTING
- MINOR CONTOUR - EXISTING
- 1+00 — ALIGNMENT CENTERLINE
- A–A — X-SECTION
- MATCHLINE

SCALE IN FEET
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PORT OF PORTLAND - T4 RIVERBANK SAMPLING IMPLEMENTAION

RIVERBANK CHARACTERIZATION

EAST SHORELINE CENTERLINE ALIGNMENT

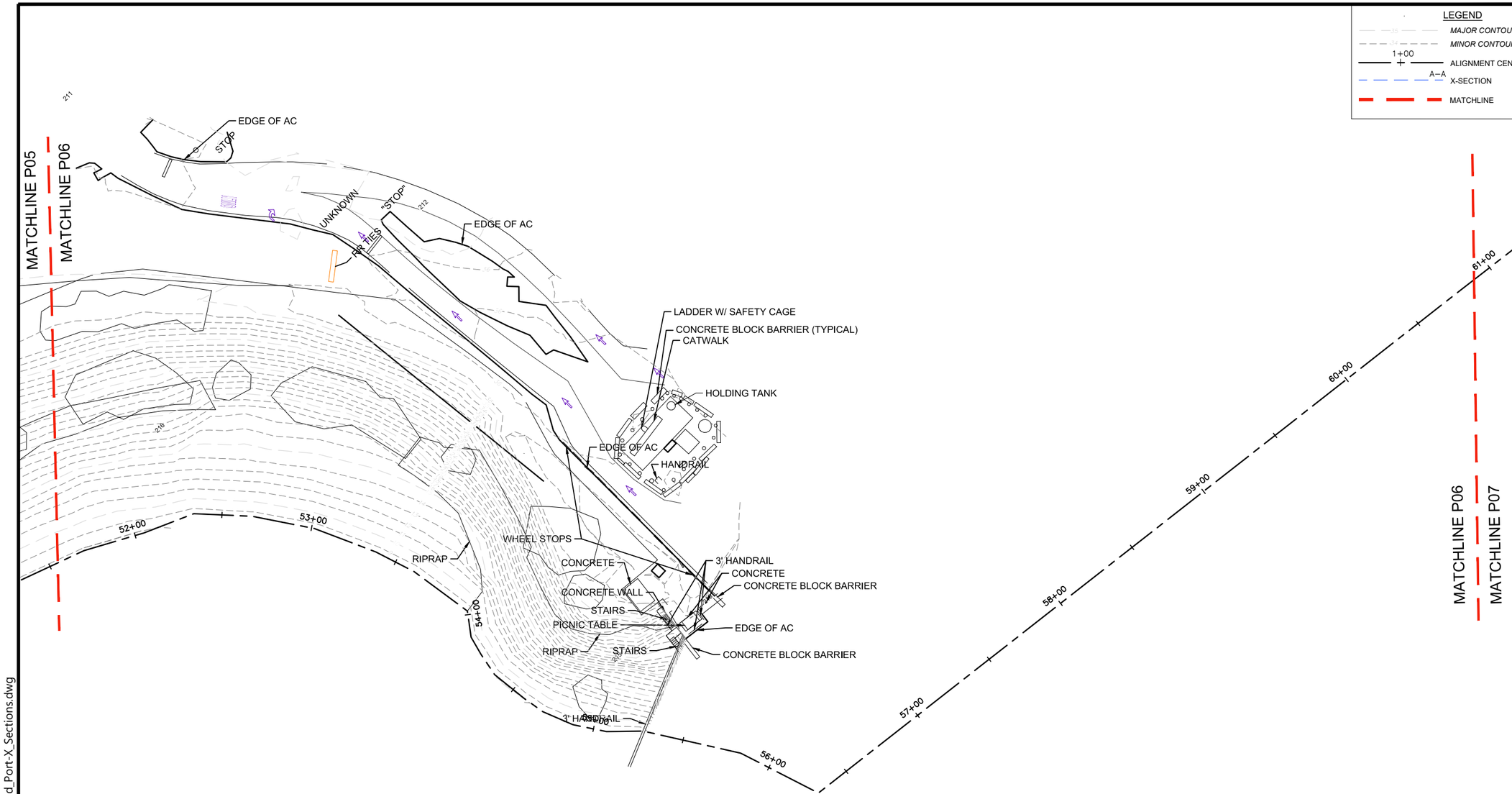
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Drawn by: JL	Reviewed by: MM
Project 32002372-08	Sheet P05
Date 02/16/2021	
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- MINOR CONTOUR - EXISTING
- 1+00 ALIGNMENT CENTERLINE
- A–A X-SECTION
- MATCHLINE

No.	Revision/Issue	Date
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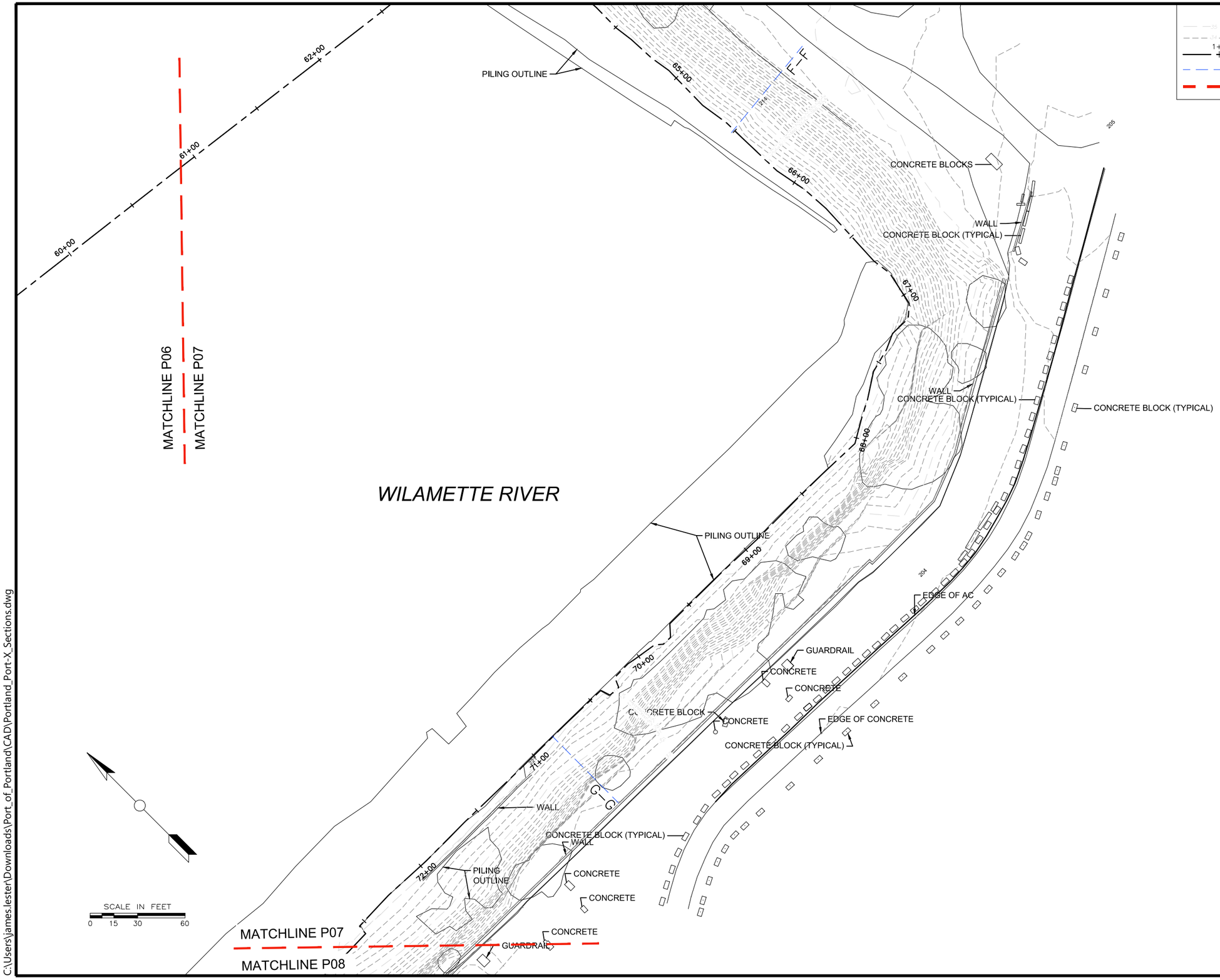
PORT OF PORTLAND - T4 RIVERBANK SAMPLING IMPLEMENTAION
RIVERBANK CHARACTERIZATION
EAST SHORELINE CENTERLINE ALIGNMENT
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303.487.1020

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Project: 32002372-08	Sheet: P06
Date: 02/16/2021	
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	DRAFT - 1	02/16/2021

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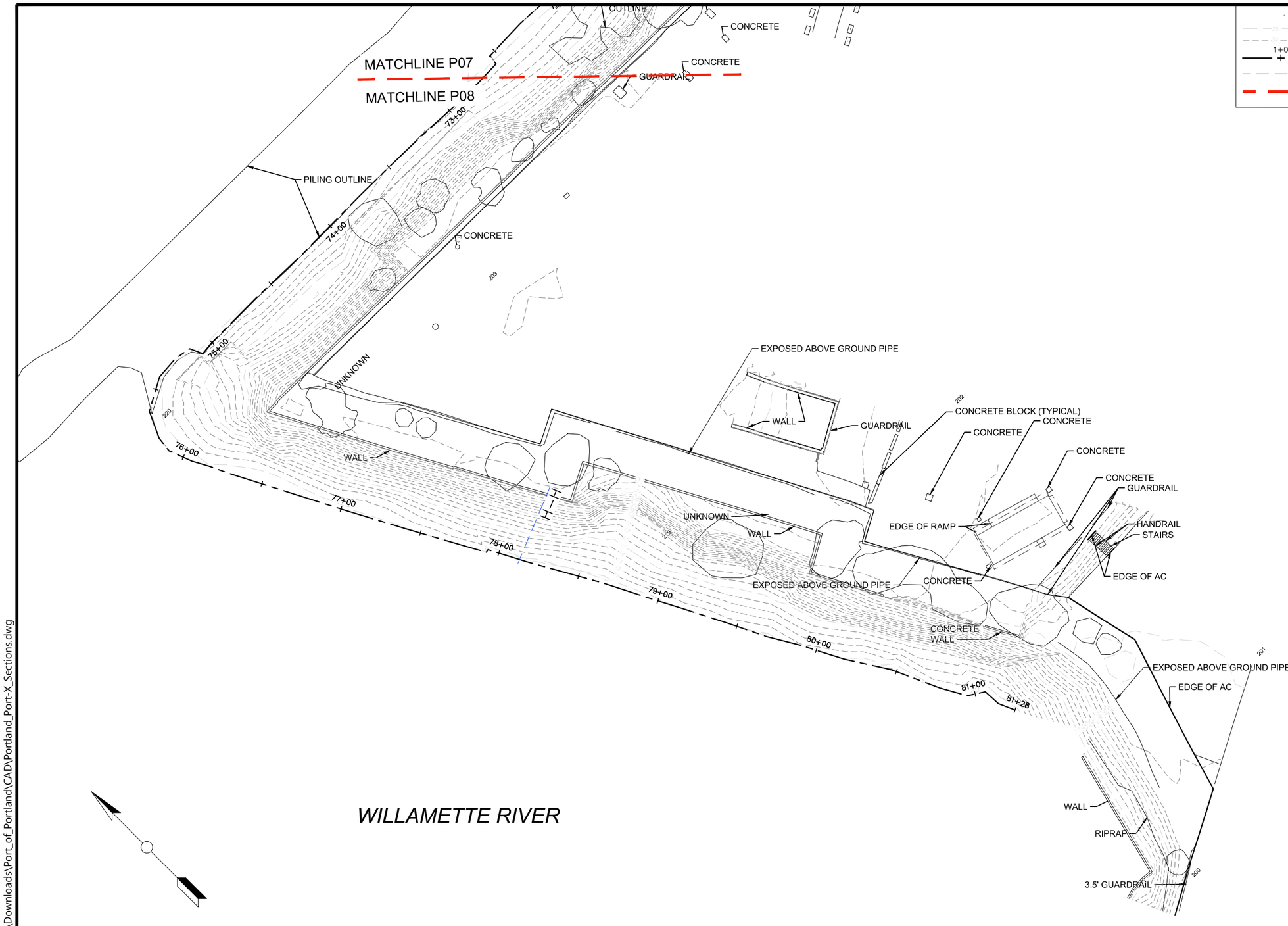
PORT OF PORTLAND - T4 RIVERBANK SAMPLING IMPLEMENTAION
RIVERBANK CHARACTERIZATION
EAST SHORELINE CENTERLINE ALIGNMENT
MULTNOMAH COUNTY, OREGON

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Project: 32002372-08	Sheet: P07
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- A–A — X-SECTION
- MATCHLINE

No.	Revision/Issue	Date
	DRAFT #1	02/16/2021

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RIVERBANK CHARACTERIZATION
EAST SHORELINE CENTERLINE ALIGNMENT
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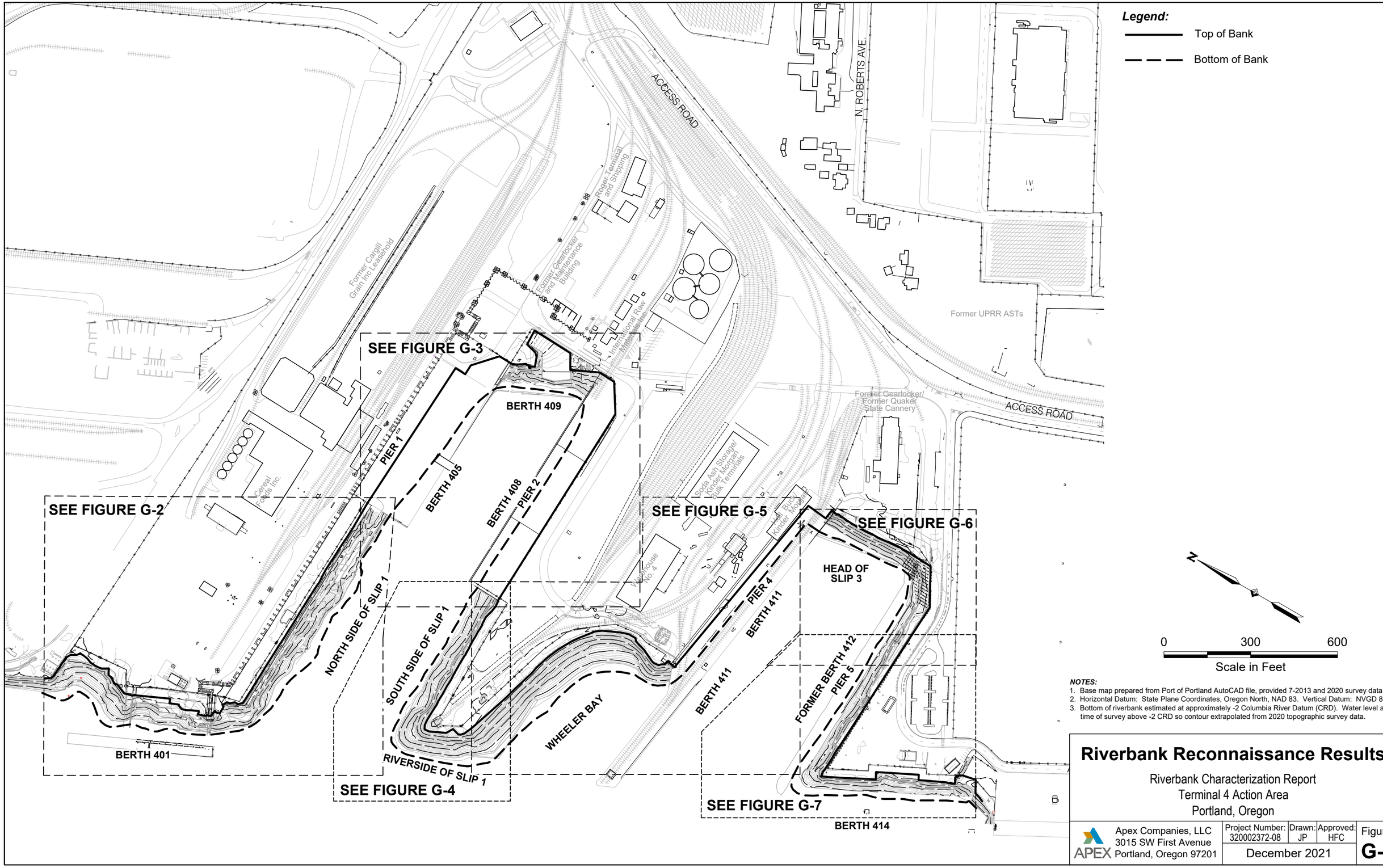
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T4 RIVERBANK SAMPLING
IMPLENENTATION
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JL	MM
Project: 32002372-08	Sheet: P08
Date: 02/16/2021	
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Appendix G

Riverbank Cross Sections and Representative Photographs



NOTES:

1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	G-1
December 2021			



Legend:

- Top of Bank
- Bottom of Bank

Riverbank Areas:

- Sand
- Rip Rap (Vegetation in Rip Rap Areas Not Shown)
- Vegetated
- Pier Structure
- Wood Retaining Structure
- Concrete, Steel, or Rock Gabion Retaining Structure
- A — Cross-Section Location

N

0 100 200

Scale in Feet

NOTES:

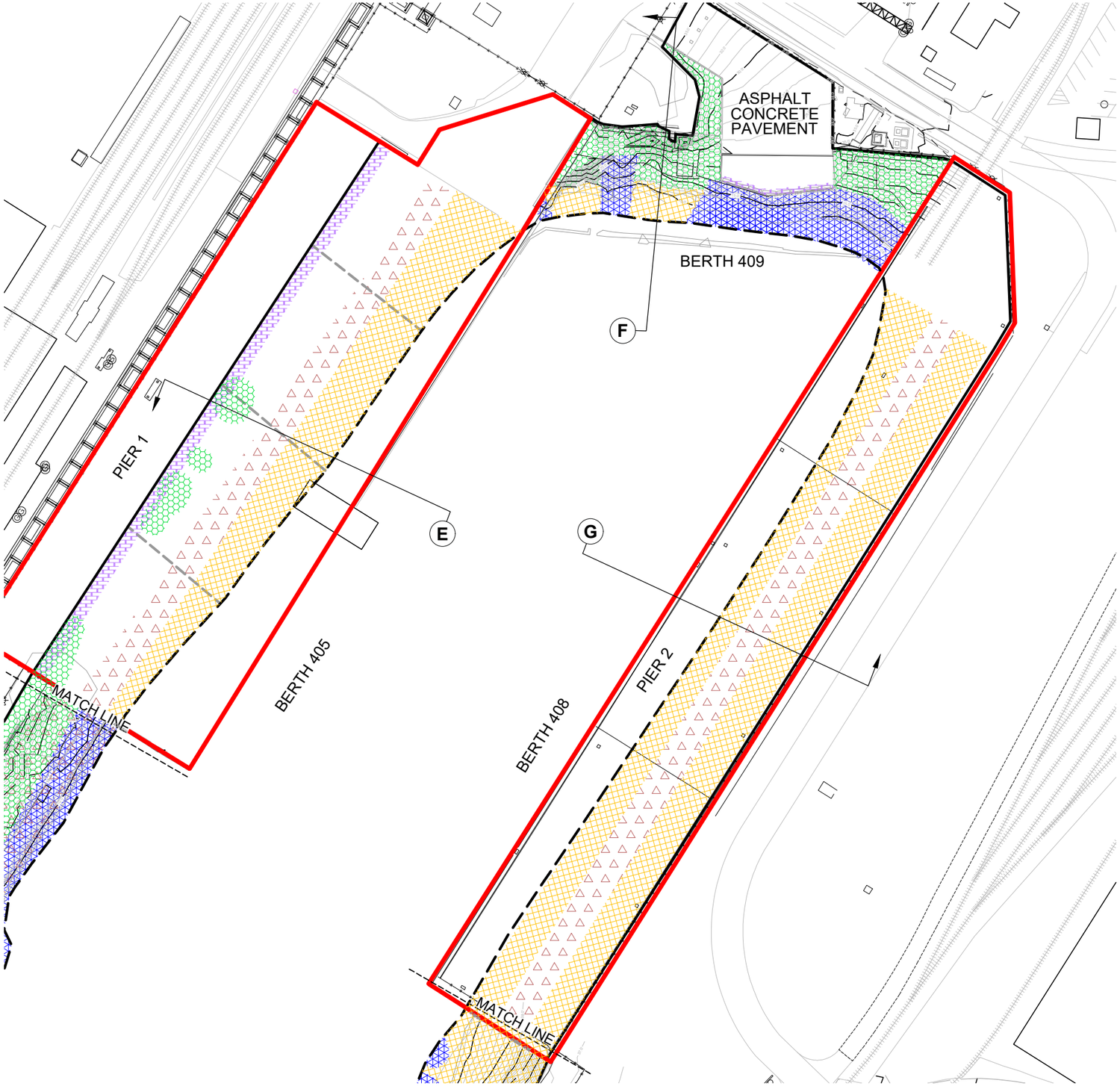
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	G-2
December 2021			



Legend:

- Top of Bank
- Bottom of Bank

Riverbank Areas:

- Sand
- Rip Rap (Vegetation in Rip Rap Areas Not Shown)
- Vegetated
- Pier Structure
- Wood Retaining Structure
- Concrete, Steel, or Rock Gabion Retaining Structure
- E — Cross-Section Location

N

0 100 200

Scale in Feet

NOTES:

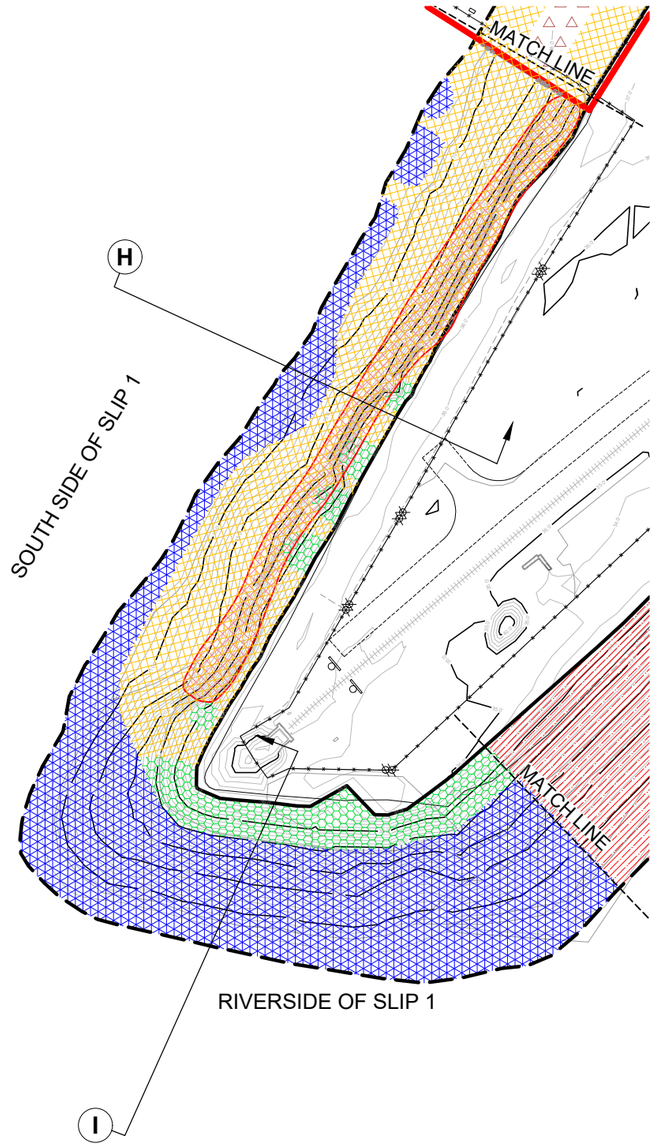
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number:	Drawn:	Approved:	Figure
320002372-08	JP	HFC	G-3
December 2021			



Legend:

- Top of Bank
- Bottom of Bank

Riverbank Areas:

- Sand
- Rip Rap (Vegetation in Rip Rap Areas Not Shown)
- Vegetated
- Pier Structure
- Completed Source Control Stabilization
- Wood Retaining Structure
- Concrete, Steel, or Rock Gabion Retaining Structure
- H — Cross-Section Location

N

0 100 200

Scale in Feet

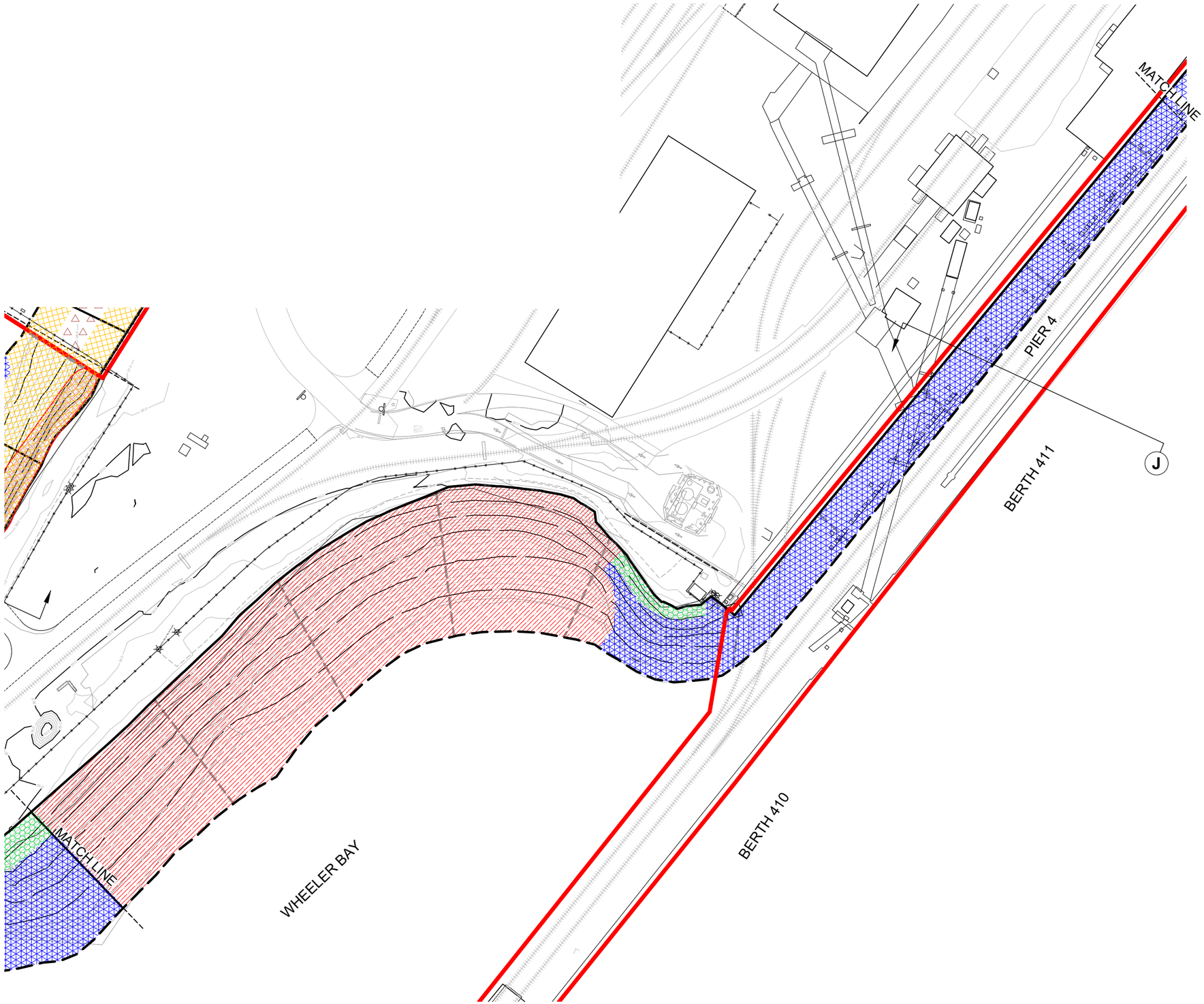
NOTES:

1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number: 320002372-08	Drawn: JP	Approved: HFC	Figure **G-4**
	December 2021			



Legend:

- Top of Bank
- Bottom of Bank

Riverbank Areas:

- Sand
- Rip Rap (Vegetation in Rip Rap Areas Not Shown)
- Vegetated
- Pier Structure
- Completed Source Control Stabilization
- Wood Retaining Structure
- J — Cross-Section Location

N

0 100 200

Scale in Feet

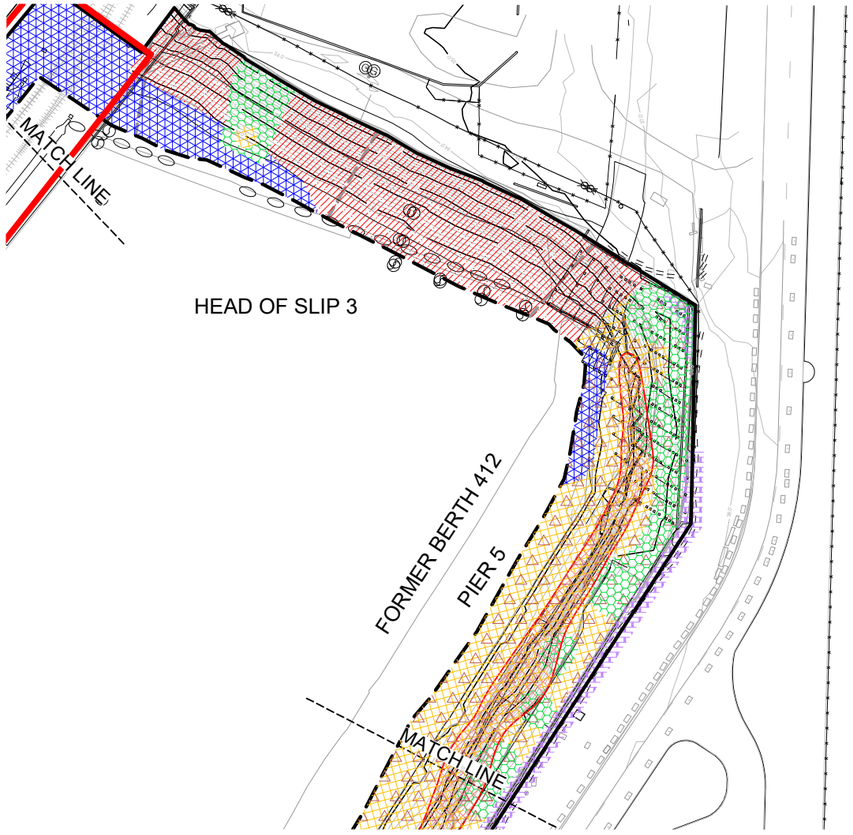
NOTES:

1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number: 320002372-08	Drawn: JP	Approved: HFC	Figure G-5
	December 2021			



Legend:

- Top of Bank
- Bottom of Bank

Riverbank Areas:

- Sand
- Rip Rap (Vegetation in Rip Rap Areas Not Shown)
- Vegetated
- Pier Structure
- Completed Source Control Stabilization
- Wood Retaining Structure
- Concrete, Steel, or Rock Gabion Retaining Structure

N

0 100 200

Scale in Feet

NOTES:

1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number: 320002372-08	Drawn: JP	Approved: HFC	Figure **G-6**
	December 2021			



Legend:

- Top of Bank
- Bottom of Bank

Riverbank Areas:

- Sand
- Rip Rap (Vegetation in Rip Rap Areas Not Shown)
- Vegetated
- Wood Retaining Structure
- Concrete, Steel, or Rock Gabion Retaining Structure
- K — Cross-Section Location

N

0 100 200

Scale in Feet

NOTES:

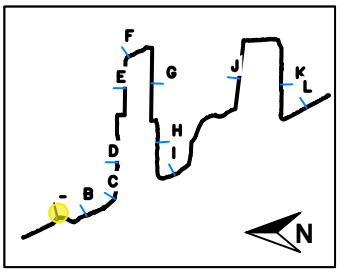
1. Base map prepared from Port of Portland AutoCAD file, provided 7-2013 and 2020 survey data.
2. Horizontal Datum: State Plane Coordinates, Oregon North, NAD 83. Vertical Datum: NVGD 88.
3. Bottom of riverbank estimated at approximately -2 Columbia River Datum (CRD). Water level at time of survey above -2 CRD so contour extrapolated from 2020 topographic survey data.

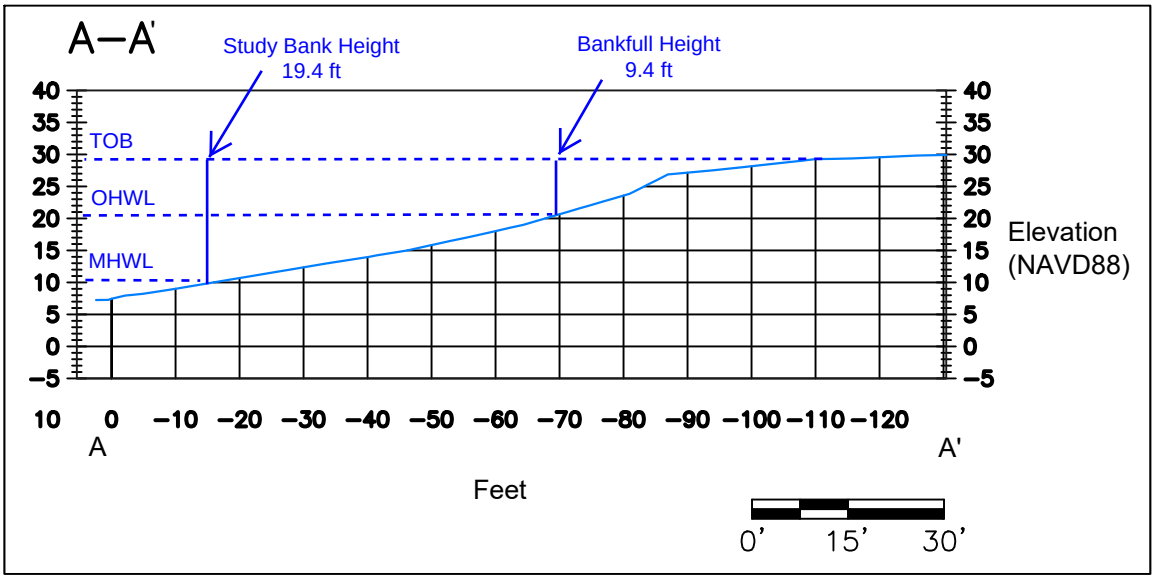
Riverbank Reconnaissance Results

Riverbank Characterization Report
Terminal 4 Action Area
Portland, Oregon

Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number: 320002372-08	Drawn: JP	Approved: HFC	Figure **G-7**
	December 2021			

X-SECTION A-A' - Berth 401 North

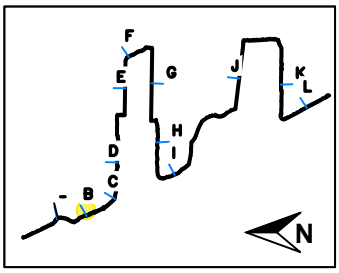


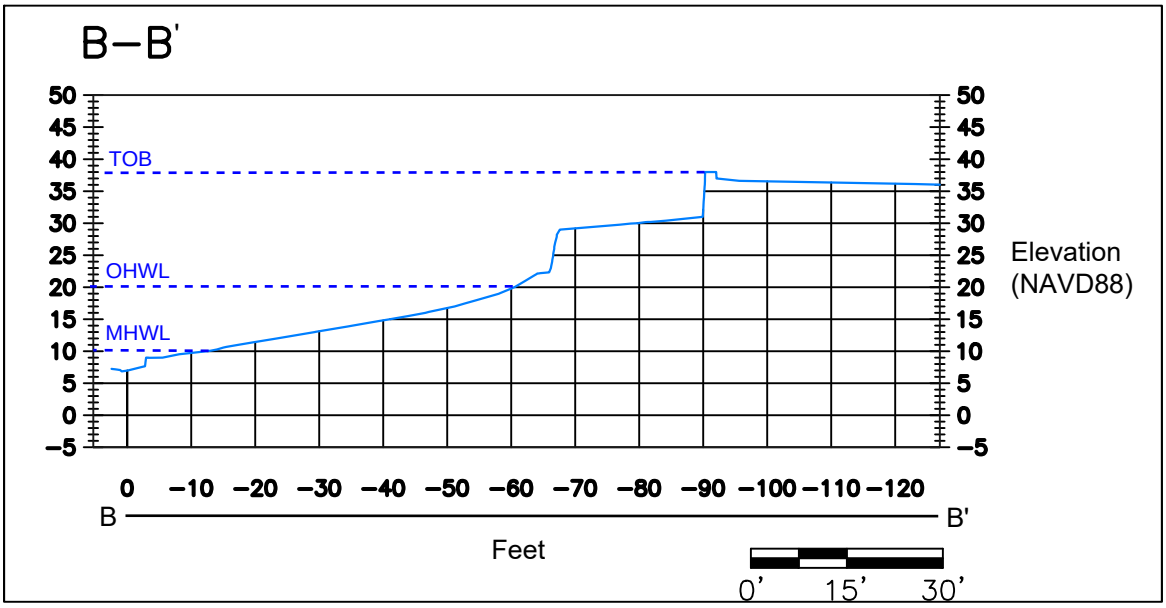




Bank Description:
Figure G-2 summarizes the surface conditions in the Berth 401 north area. The lower portion of the bank is comprised of sand and gravel with intermittent rip rap armoring. The upper portion of the bank is heavily vegetated. At the top of the sandy region in the middle of this area is an over-steepened slope approximately 3 feet tall. The rip rap armoring on the northern portion of Berth 401 is intermittent, consisting of coarse gravel to boulders, ranging in size from approximately one to 12 inches diameter. Rip rap armoring in this portion of the riverbank extends down to and below the median high water line (MHWL) and continues up slope between the ordinary high water line (OHWL) and the top of bank. Armoring in this area is in good condition and appears stable. Rip rap armoring on the entire Berth 401 stretch of the riverbank area covers approximately 50 percent of the riverbank. The BEHI ranking is Very High notwithstanding the protections described above.

X-SECTION B-B' - Berth 401 Mid

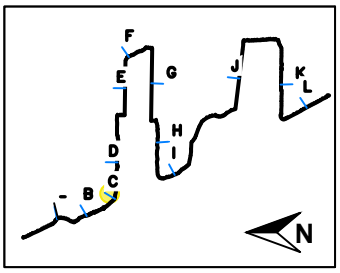


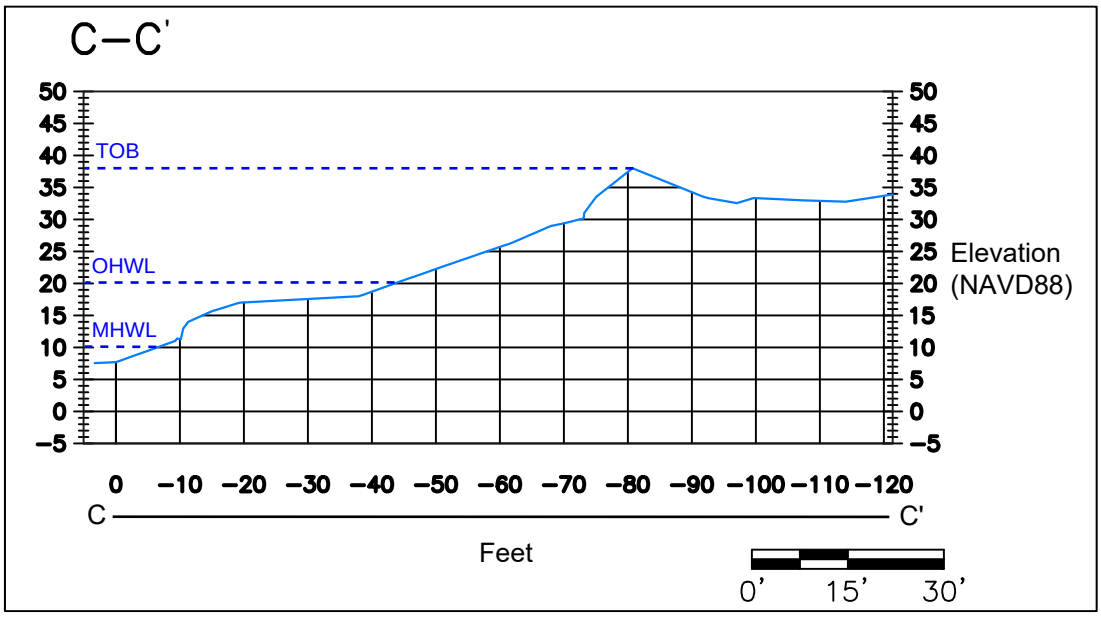




Bank Description:
Figure G-2 summarizes the surface conditions in the Berth 401 mid area. The lower portion of the bank is comprised of sand and gravel with areas of rock armoring. The upper portion of bank is supported by a concrete retaining wall, wood retaining walls, and a rock gabion retaining wall. Pilings from historical structures are present. A narrow strip along the upper bank is heavily vegetated. The survey shows several areas that are over-steepened (or vertical), but these areas correspond to the retaining walls. Some of the wood retaining walls have decayed. Indicators of erosion were observed where retaining structures have decayed. Rip rap armoring is present in two areas of Berth 401 Mid, on both the north and south end of the wood retaining wall. Rip rap consists of boulders, ranging from approximately 8 to 24 inches diameter. The armoring in this portion of the riverbank extends into the river (below the MHWL) and continues up slope above the OHWL. Armoring is in good condition and appears stable. Rip rap armoring on the entire Berth 401 stretch of the riverbank area covers approximately 50 percent of the riverbank.

X-SECTION C-C' - Berth 401 South

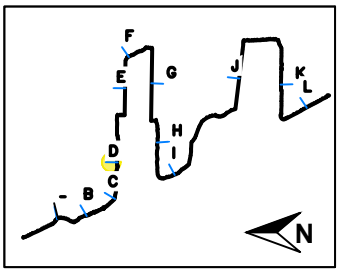


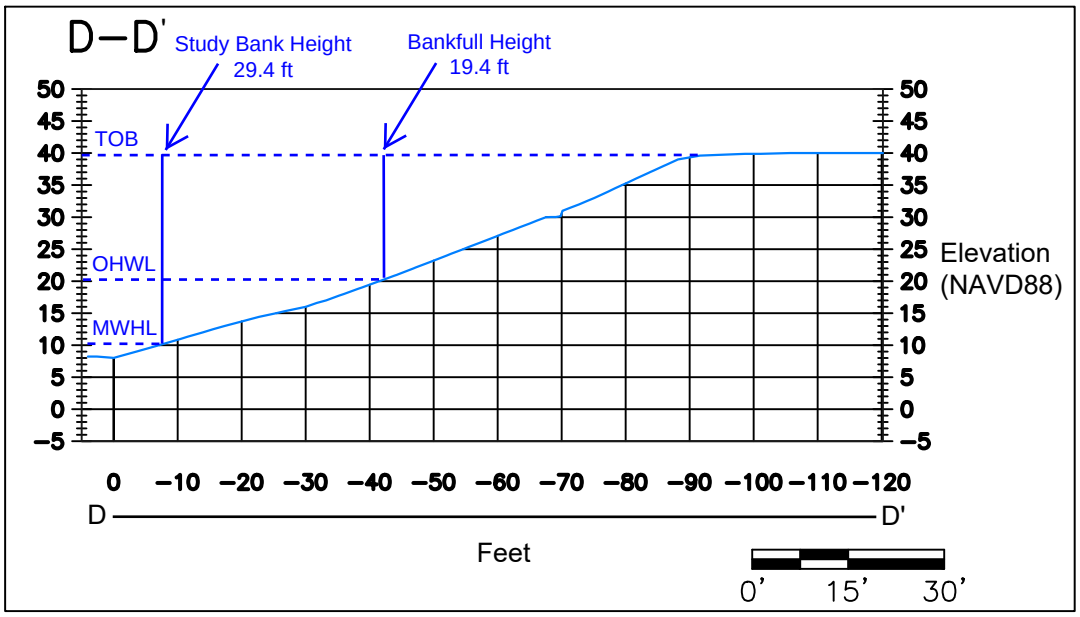




Bank Description:
Figure G-2 summarizes the surface conditions in the Berth 401 south area. The lower and mid portion of the bank is heavily armored with rip rap armoring. The rip rap consists of boulders ranging in size from 8 to 24 inches in diameter and extends into the river (below the MHWL) and up slope above the OHWL. The armoring extends along the entire portion of the Berth 401 South riverbank area and covers approximate 67 percent (the bottom two thirds) of the riverbank. The armoring is in good condition. The top of bank is supported by a concrete retaining wall, and heavy vegetation is present along the top of bank. No erosion was observed. Rip rap armoring on the entire Berth 401 stretch of the riverbank area covers approximately 50 percent of the riverbank.

X-SECTION D-D' - North Side of Slip 1 (1 of 2)



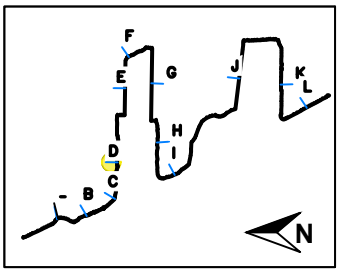


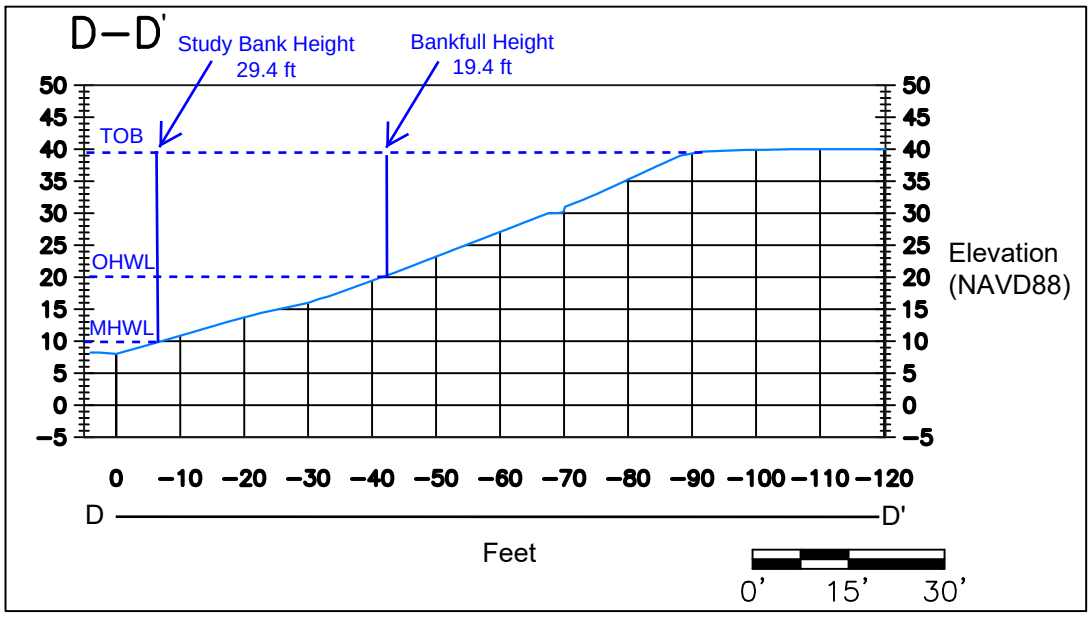


Bank Description:

Figure G-2 summarizes the surface conditions on the north side of Slip 1, riverward of Pier 1. The top of bank is supported by a concrete wall. Wood retaining walls are present throughout most of the upper bank. Some of the walls are in good condition. In most areas where walls have decayed, the bank has been stabilized with rip rap or wooden planks have been replaced. On the east and west end of this section of riverbank, the rip rap consists of boulders ranging in size from 6 to 18 inches in diameter, extends below the MHWL and above the OHWL, and is in good condition. This portion of rip rap compromises approximately 35 percent of this section of the riverbank. Sections of the riverbank that have been repaired in patches exist with gravel and boulders ranging in size from 0 to 12 inches in diameter. This rip rap is between the MHWL and the OHWL, is in moderate condition, and compromises approximately 10 percent of the riverbank. There are scattered areas where walls have decayed but are not stabilized (see right side of Photo D3). Pilings from historical structures are present. Heavy vegetation is present in some portions of the mid bank and much of the upper bank. The survey shows several areas that are over-steepened, but these areas correspond to the retaining walls. The BEHI ranking is Very High notwithstanding the protections described above.

X-SECTION D-D'- North Side of Slip 1 (2 of 2)



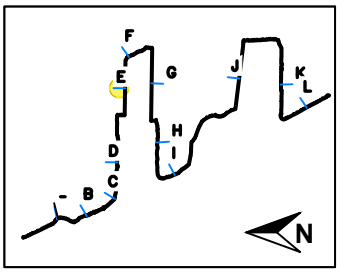


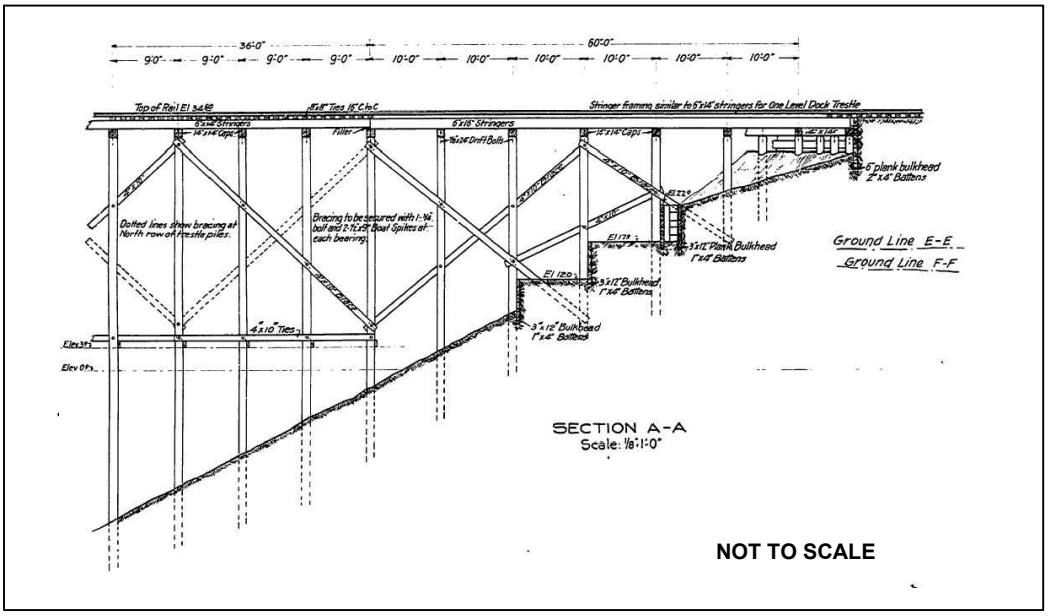






X-SECTION E-E' - Berth 405-Pier 1



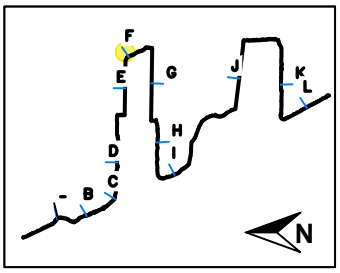


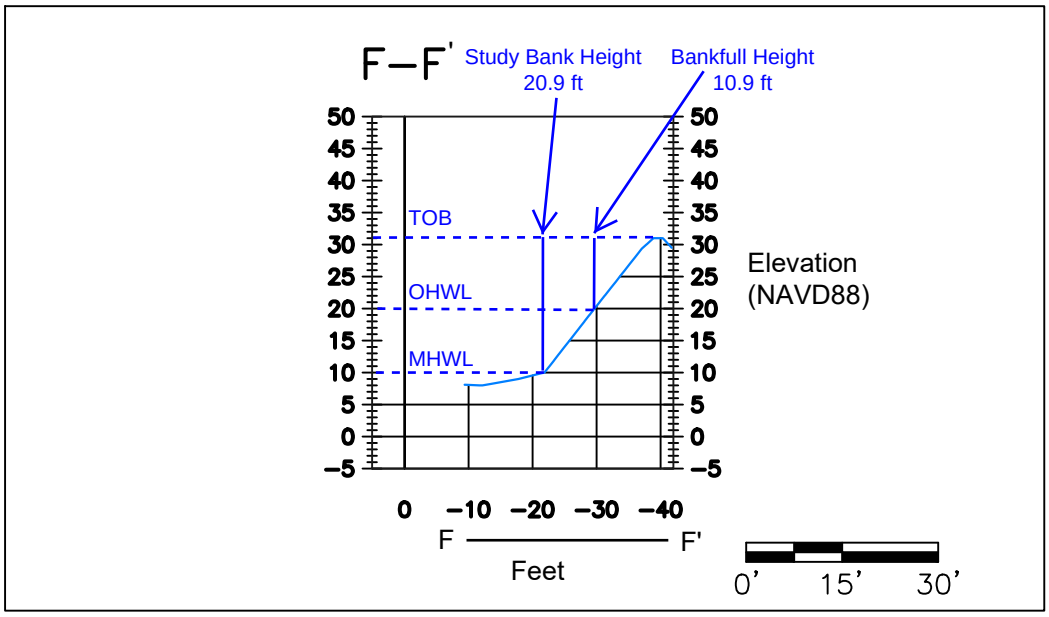


Bank Description:

Figure G-3 summarizes the surface conditions on the north side of Slip 1 at Berth 405/Pier 1. This area was inaccessible for survey or observation. Based on the as-built drawings, the middle portion of the slope is stabilized with wood retaining walls and the top of slope is supported by a concrete retaining wall. Pilings for the Pier 1 structure are present. The area above the wood walls has scattered vegetation in locations where the pier deck is not present.

X-SECTION F-F - Berth 409-Head of Slip 1



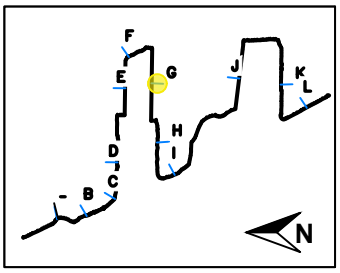


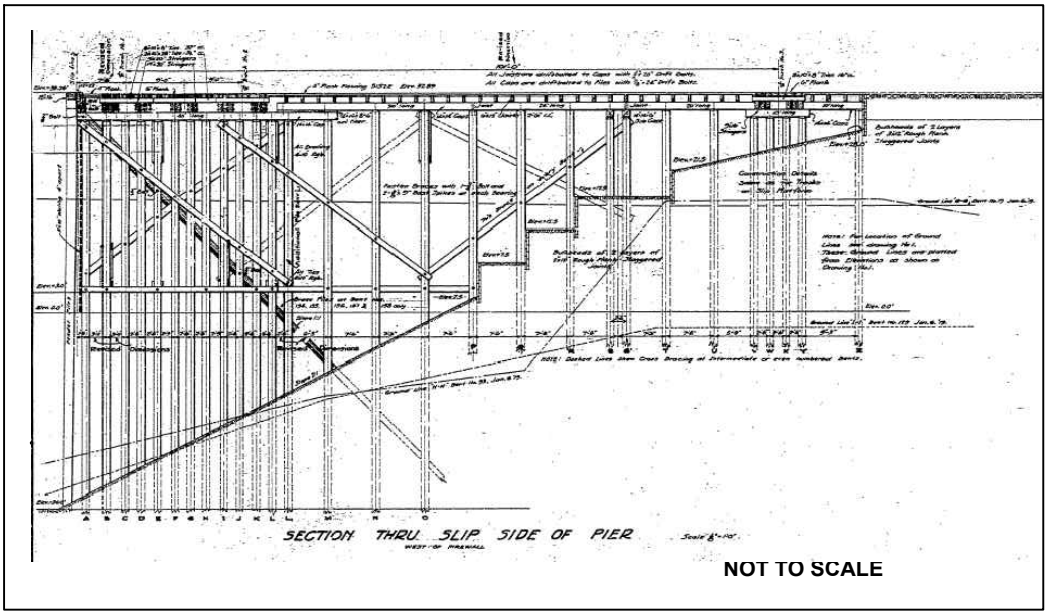




Bank Description:
Figure G-3 summarizes the surface conditions at Berth 409 at the head of Slip 1. The top of bank is supported by a concrete wall except in the central portion where a paved access ramp leads to the low dock. Rip rap armoring is present below the low dock and below outfalls with boulders that range in size from 6 to 24 inches in diameter. The armoring is in good condition and compromises approximately 40 percent of the riverbank at the Head of Slip 1. The rest of the lower bank consists of shallow-sloped sandy areas. The mid and upper sections of the bank on the north and south sides of the paved ramp are heavily vegetated. The survey shows several areas that are over-steepened, but these correspond to retaining walls and/or armoring. The BEHI ranking is High notwithstanding the protections described above.

X-SECTION G-G - Berth 408-Pier 2

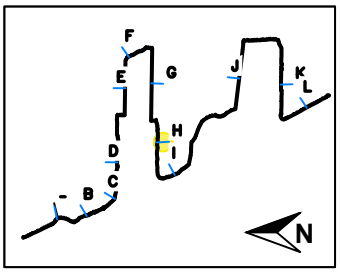


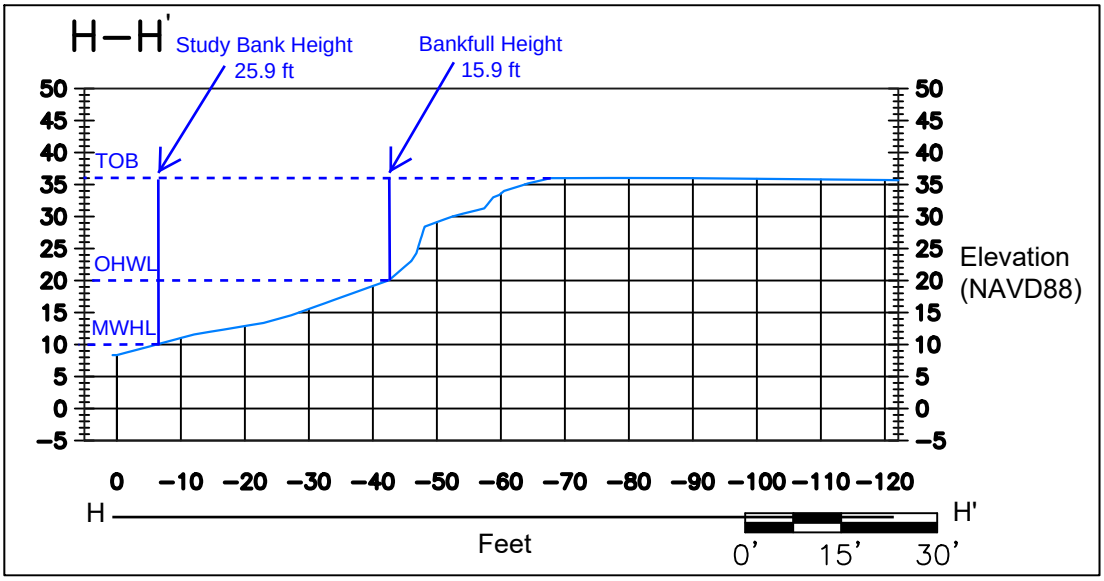




Bank Description:
Figure G-3 summarizes the surface conditions at Berth 408/Pier 2. This area was inaccessible for the topographic survey. Based on the as-built drawings, the middle portion of the slope is stabilized with wood retaining walls and the top of slope is a concrete retaining wall. Pilings for the Pier 2 structure are present. The retaining walls were observed to be in generally good condition. The bank material consists of sand with intermittent rip rap.

X-SECTION H-H - South Side of Slip 1

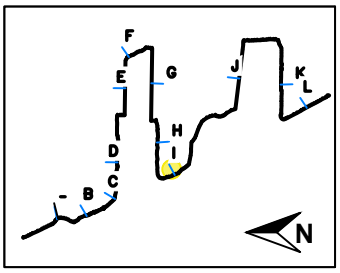


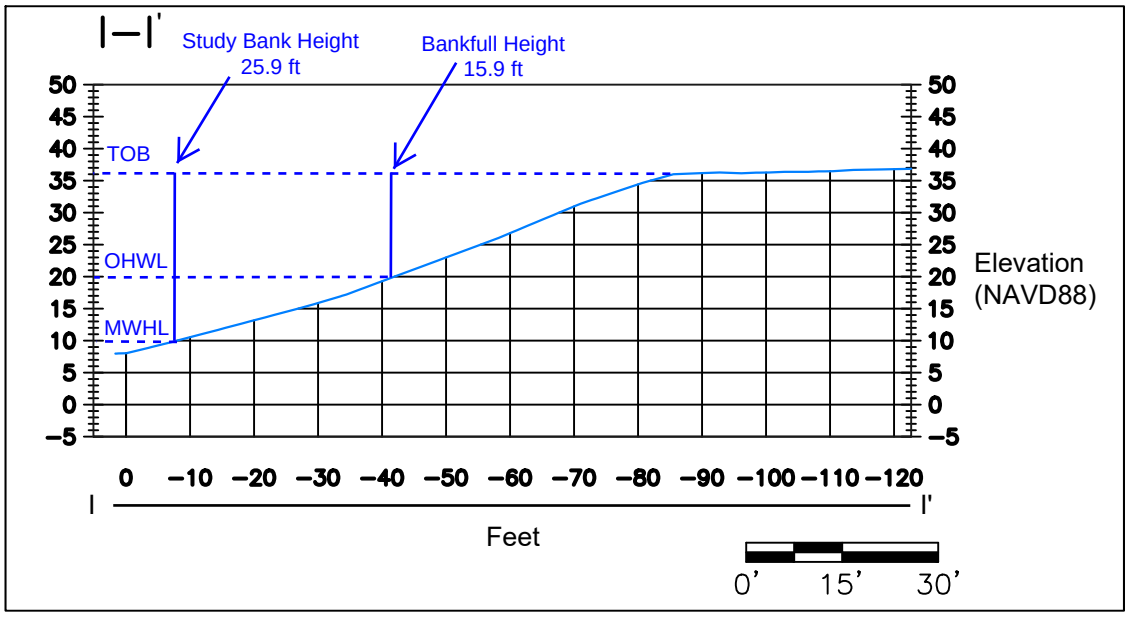




Bank Description:
Figure G-4 summarizes the surface conditions on the south side of Slip 1, riverward of Pier 2. The lower portion of the bank consists of sand with intermittent gravel and minor rip rap. The rip rap consists of gravel and boulders that range in size from 1 to 12 inches in diameter and is scattered along the lower portion of the bank. The armoring is in poor condition and takes up approximately 10 percent of the riverbank. The upper portion of the bank consists primarily of soil (primarily sand with some silt and gravel). There is scattered vegetation. Erosion is observed on the upper portion of the bank, resulting in over-steepened slopes. The BEHI ranking is Extreme.

X-SECTION I-I - Riverside of Slip 1



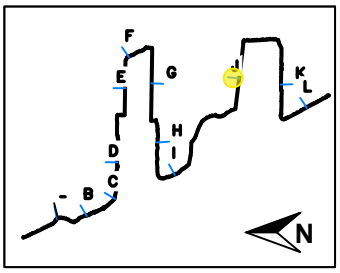


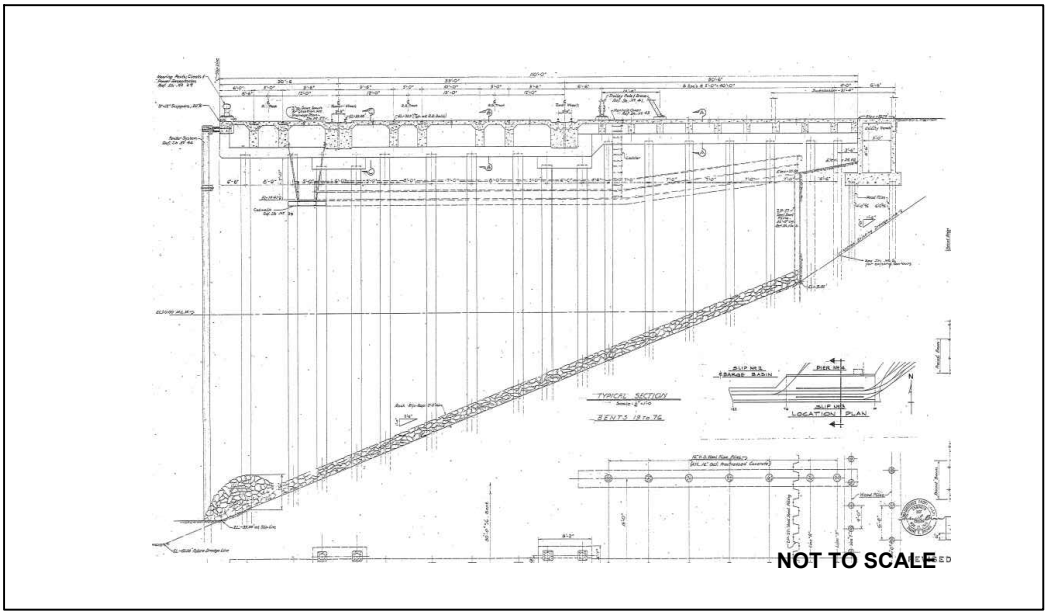


Bank Description:

Figure G-4 summarizes the surface conditions at the riverside of Slip 1. The lower portion of the bank in this section is heavily armored with rip rap. The armoring, which consists of boulders ranging in size from 12 to 24 inches in diameter, compromises the lower 80 percent of the riverbank and is in good condition. The rip rap extends below the MHWL and above the OHWL to within a few feet of top of bank. The upper portion of the bank is soil and is heavily vegetated. The BEHI ranking is High notwithstanding the protections described above.

X-SECTION J-J - Berth 411-Pier 4

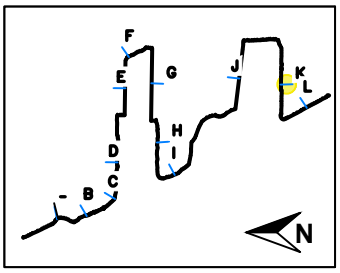


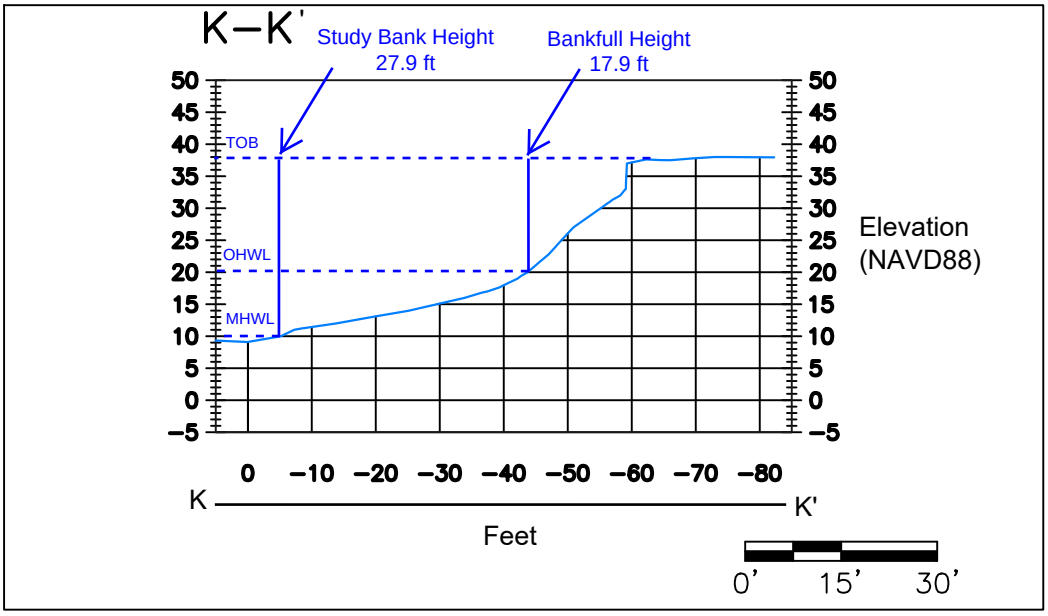




Bank Description:
Figure G-5 summarizes the surface conditions at Berth 411/Pier 4. This area was inaccessible for the topographic survey. Based on the as-built drawings, the bank in the Pier 4 area is an engineered surface consisting of at least 2 feet of rip rap with a steel sheet pile retaining wall at the top. Pilings for Pier 4 are present. No erosion was observed in this section.

X-SECTION K-K - Former Berth 412-Pier 5



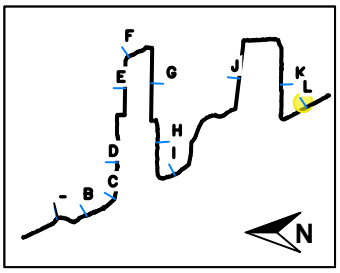


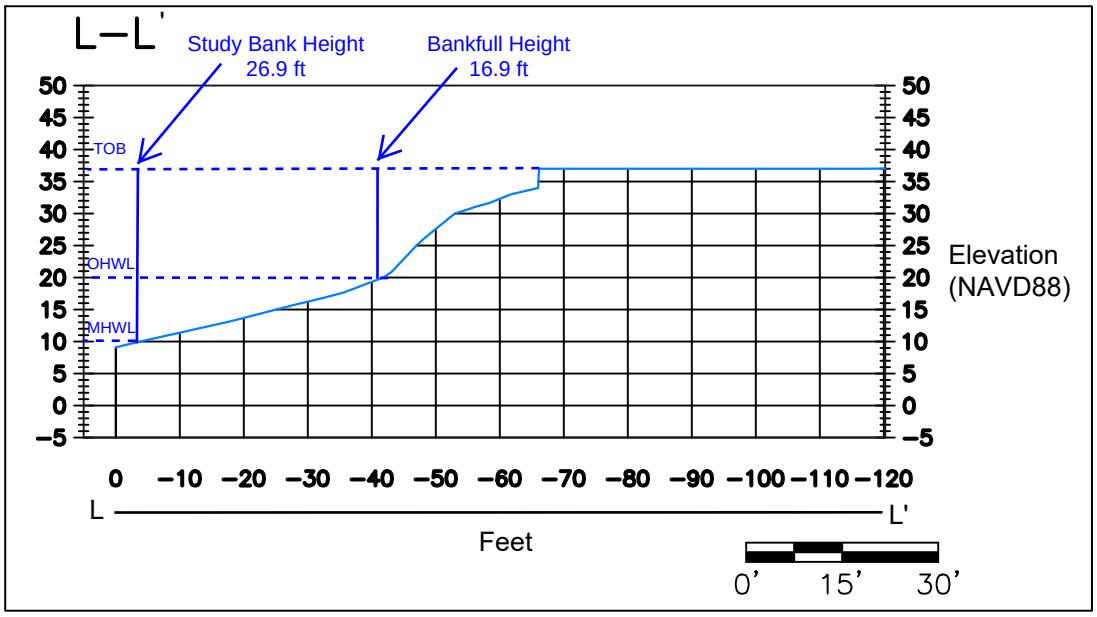




Bank Description:
Figures G-6 and G-7 summarize the surface conditions at Former Berth 412/Pier 5. The lower portion of the bank in this section consists of sand with scattered gravel and intermittent rip rap. The rip rap consists of gravel from 1 to 6 inches in diameter and is in poor condition, compromising approximately 5 percent of this section of the riverbank. The presence of rip rap increases to the west. The mid and upper portions of the bank consist of wood retaining walls supported by concrete piles. Significant deterioration of the wood retaining walls and erosion is observed. Pilings from historical structures are present. The upper portion of the bank is vegetated at the east end and has scattered vegetation in the middle/west portions. The upper slopes are over-steepened. The top of the bank is supported by a concrete retaining wall. The BEHI ranking is Extreme.

X-SECTION L-L - Berth 414







Bank Description:

Figure G-7 summarizes the surface conditions at Berth 414. The base of the bank in this section is defined with a wood pile and plank retaining wall. The lower portion of the bank consists of rip rap armoring with interspersed vegetation. The rip rap consists of boulders ranging in size from 12 to 36 inches in diameter and compromises 80 percent of this section of the riverbank. The armoring extends from the wood pile and plank retaining wall to above the OHWL and is in good condition. The upper portion of the bank between the rip rap and a retaining wall is a narrow strip of soil that is heavily vegetated. There are small areas of sand. The top of the bank is supported by a concrete or steel retaining wall. The BEHI ranking is High notwithstanding the protections described above.

Appendix H

Terminal 4 Slip 3 Remedial Investigation Subsurface Cross Section

Site Exploration Plan: Detailed View

Port of Portland, Terminal 4 - Slip 3 Upland

Legend:

- IB-31/MW-16 — Monitoring Well Location and Designation (by Century West, 6/93 - 7/93)
- IB-17 — Investigative Boring Location and Designation (by Century West, 6/93 - 7/93)
- GP-5 — Soil Probe Location and Designation (by Pacific Environmental Group, 3/97)
- SB-4 — Soil Boring Location and Designation (by Kennedy/Jenks, 4/97)
- GP-5 — Geoprobe Location and Designation (by Pacific Environmental Group, 8/97)
- B-19 — Soil Boring Location and Designation (by Pacific Environmental Group, 8/97)
- GP-20 — Geoprobe Location and Designation (by Hart Crowser, 6/98, 10/98)
- S-4 — Soil Sample Location and Designation (by Hart Crowser, 6/98)
- HC-6D — Monitoring Well Location and Designation (by Hart Crowser, 10/98)
- A A′ — Cross Section Location and Designation

Hall-Buck
Gearlocker
Former Quaker State Tank Farm
Slip No. 3
Former Quaker State Oil Line
Former Berth 412
Abandoned UPRR Underground Fuel Line
Warehouse No. 5
Warehouse No. 7

GP-23 GP-24 GP-25 B-13 B-4 HC-11 B-14 GP-16 B-6 GP-19 GP-20 HC-9 B-5 GP-8 GP-1 GP-17 SB-4 IB-33/MW-17 HC-10 B-9 GP-15 IB-34/MW-18 IB-35 SB-3 B-10 SB-2 B-7 B-3 GP-2 GP-14 IB-25/MW-13 B-11 IB-32 SB-1 GP-10 GP-9 HC-12S HC-12D B-8 B-1 B-2 IB-36/MW-19 GP-13 IB-30/MW-15 IB-18/MW-10 GP-7 B-12 GP-3 IB-37/MW-20 IB-27/MW-14 B-15 GP-6 GP-5 IB-1/MW-1 GP-49 IB-2/MW-2 GP-12 IB-3/MW-3 IB-15/MW-8 IB-16/MW-9 IB-31/MW-16 GP-4 GP-50 GP-18 IB-17 S-42 GP-45 GP-52 IB-14/MW-7 GP-47 GP-22 HC-7 IB-11 GP-46 HC-14 GP-51 HC-8 GP-44 GP-43 GP-42 GP-27 HC-13 GP-41 GP-40 GP-30 GP-34 S-4 GP-32 GP-31 GP-33 HC-1 GP-35 GP-37 GP-38 GP-39 HC-2 HC-5 HC-6D HC-6S GP-11 S-31 S-29 S-26 S-24 S-21 S-20 S-18 S-16 S-15 S-13 S-11 S-9 S-6 S-2 HC-4D HC-4S HC-3 GP-36 IB-13 IB-12 S-70 IB-28 IB-4 IB-5 S-65 S-61 IB-29 IB-24/MW-12 IB-6 IB-23 IB-26 IB-7/MW-4 S-58 GP-48 IB-8/MW-5 IB-20 IB-22 GP-21 IB-9/MW-6 IB-21/MW-11 IB-19 IB-10 A A′ B B′ C C′

0 50 100 200
Approximate Scale in Feet

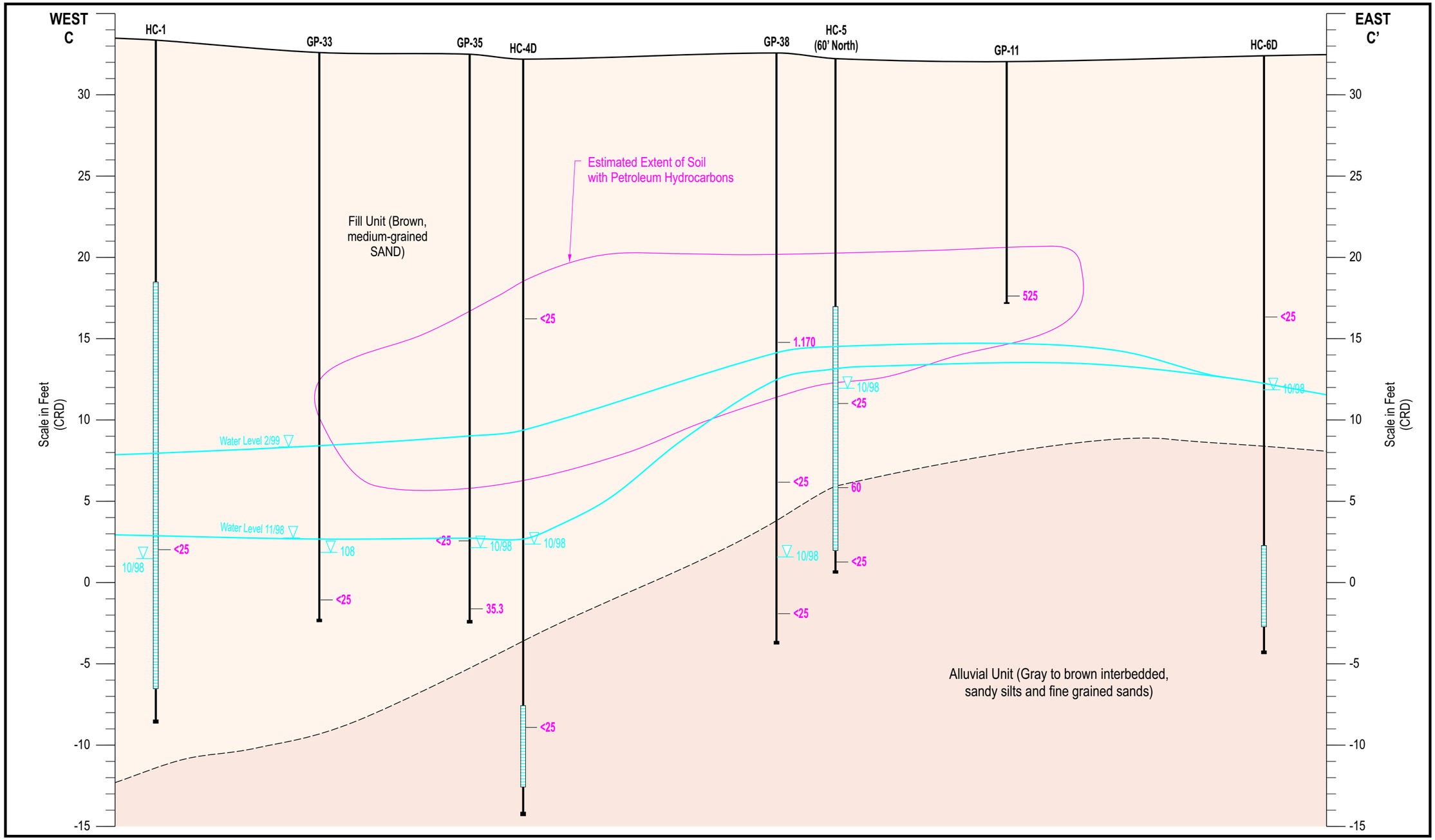
Note: Base map prepared from a Port of Portland Terminal No. 4 plan, dated 4/96.

HARTCROWSER
J-5624-09 1/00
Figure 8

RI Report, Rev. 3, 1/21/00

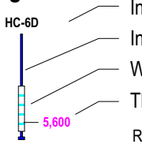
Cross Section C-C'

Port of Portland, Terminal 4 -Slip 3 Upland



Note: Exploration boring and well completion data from Century West (1994).

Legend:



Investigative Boring/Monitoring Well Designation
Investigative Boring/Monitoring Well Location
Well Screen
TPH-D in Soil in mg/kg

RI Report, Rev. 3, 1/21/00

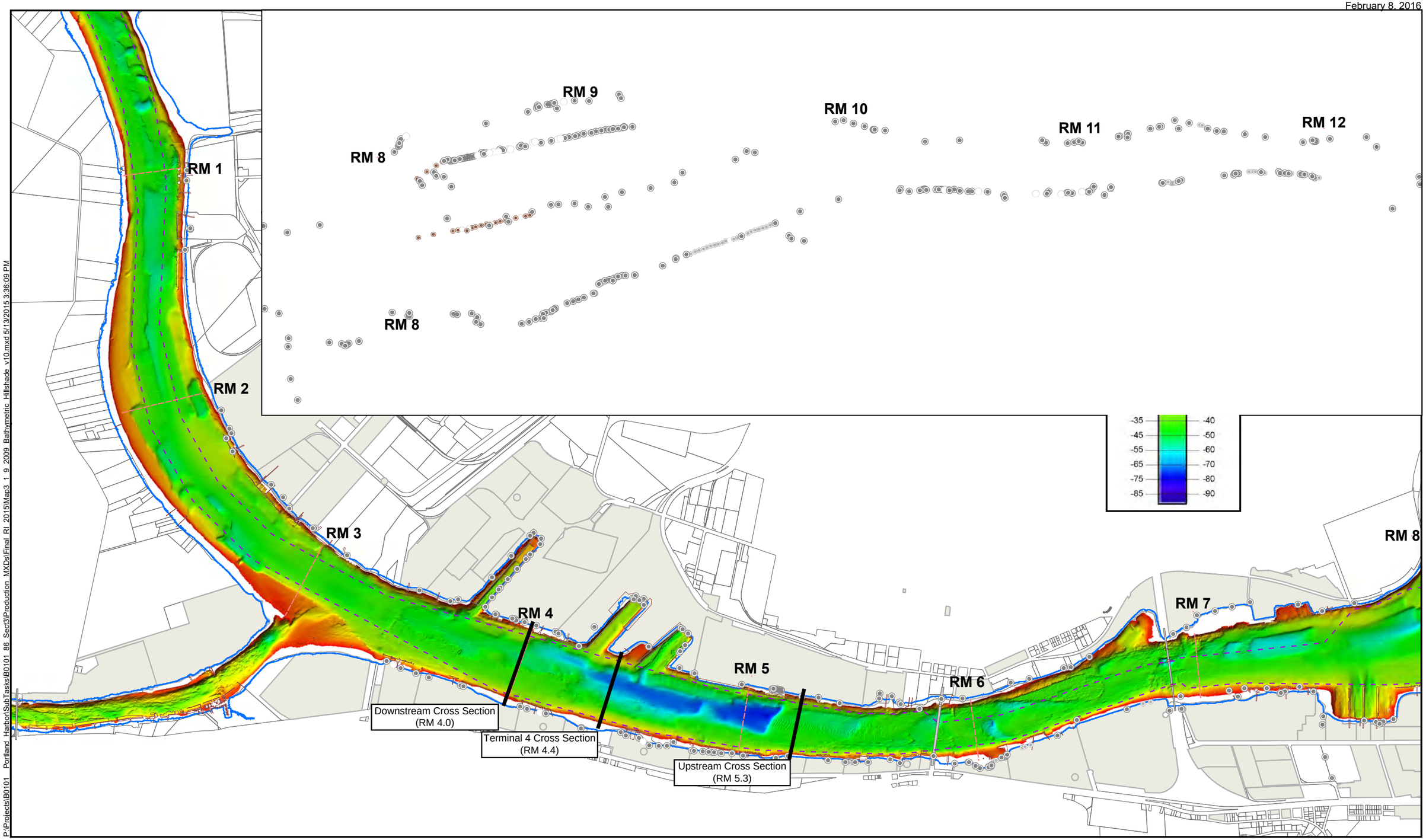
Approximate Horizontal Scale in Feet
0 30 60 120
0 3 6 12
Approximate Vertical Scale in Feet

HARTCROWSER

J-5624-09 1/00
Figure 24

Appendix I

Portland Harbor RI/FS Map 3.1-9 and River Dimensions



P:\Projects\B0101 Portland Harbor\SubTasks\B0101 86 Sect3\Production MXDs\Final RI 2015\Map3 1 9 2009 Bathymetric Hillshade v10.mxd 5/13/2015 3:36:09 PM

FEATURE SOURCES:
Transportation, Property, or Boundaries: Metro RLIS.
Channel & River Miles: US Army Corps of Engineers.
Bathymetric Information: David Evans and Associates, Inc.

0 1,200 2,400 4,800 Feet

Map Features

- River Miles
- Docks and Structures
- Navigation Channel

Outfalls

- Outfall
- Dock Drain
- Roof Drain

- Bridges
- River Edge +13 ft NAVD
- Upland ECSI Sites (2008)
- Waterfront Taxlots

Note: Willamette River Channel Surveyed 2009; Multnomah Channel Surveyed 2007.

Map 3.1-9
Portland Harbor RI/FS
Remedial Investigation Report
2009 Bathymetric Hillshade

Table I-1
Stream Metrics
Terminal 4 Riverbank Characterization
Portland, Oregon

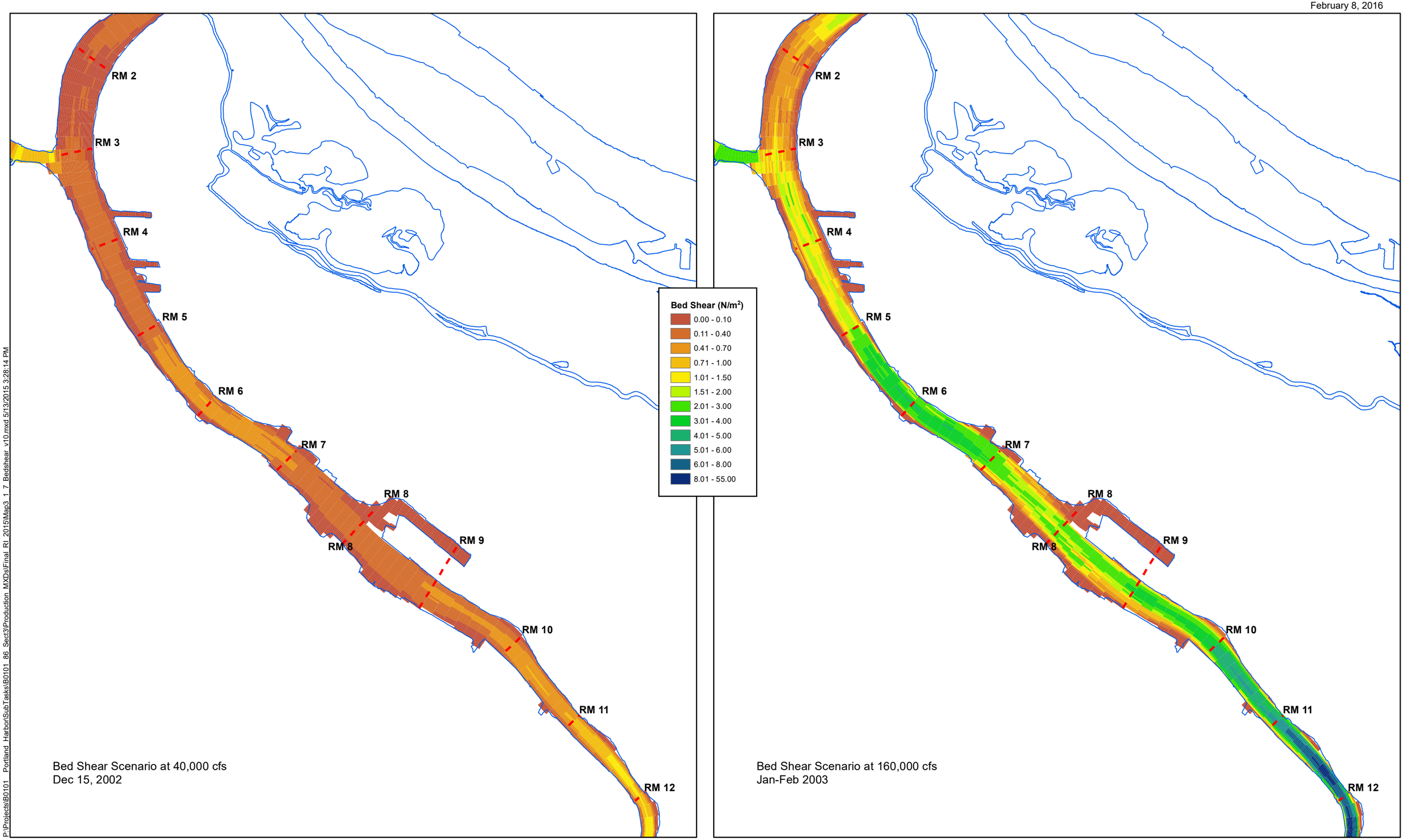
Location Relative to Site	River Mile	Width (ft)	Riverbed Elevation (ft NAVD88)		Cross Sectional Area (ft^2)		Discharge (cfs)		Velocity (ft/s)	
			Average	Maximum	MHW	100 Yr Flood	MHW	100 Yr Flood	MHW	100 Yr Flood
Upstream	5.3	1,833	-32.0	-37	60,600	114,700			0.78	6.3
At Terminal 4	4.4	1,750	-36.5	-67	81,700	120,500	135,600	585,000	0.58	4.9
Downstream	4.0	1,830	-30.2	-47	74,000	114,700			0.64	5.1

Notes:

1. ft = feet
2. ft NAVD88 = feet above North American Vertical Datum 1988
3. ft^2 = square feet
4. cfs = cubic feet per second
5. ft/s = feet per second
6. MHW = mean high water - 13.3 ft NAVD88
7. 100 Yr Flood = 100 year flood event - 32.3 ft NAVD88
8. Discharge for MHW from USGS Station 14211720 at the Morrison Bridge at most recent event (January 15, 2020)
9. Discharge for 100 year flood event from USGS flood estimates for 1% annual exceedance for 1-day flood duration at confluence of the Willamette and Columbia Rivers (USGS, 2018)

Appendix J

Portland Harbor RI/FS Map 3.1-7



P:\Projects\B0101_Portland_Harbor\SubTasks\B0101_86_Sect3\Production_MXDs\Final_RI_2015\Map3_1_7_Bedshear_v10.mxd 5/13/2015 3:28:14 PM

N

0 0.5 1 2 Miles

FEATURE SOURCES:
Transportation, Property, or Boundaries: Metro RLIS .
Channel & River miles: US Army Corps of Engineers.
Bathymetric Information: David Evans and Associates, Inc.
Bed shear: West Consultants.

Map Features

River Miles

Map 3.1-7
Portland Harbor RI/FS
Remedial Investigation Report
Study Area Bed Shear Model Predictions

Appendix K

Portland Harbor RI/FS Figure 3.4-17

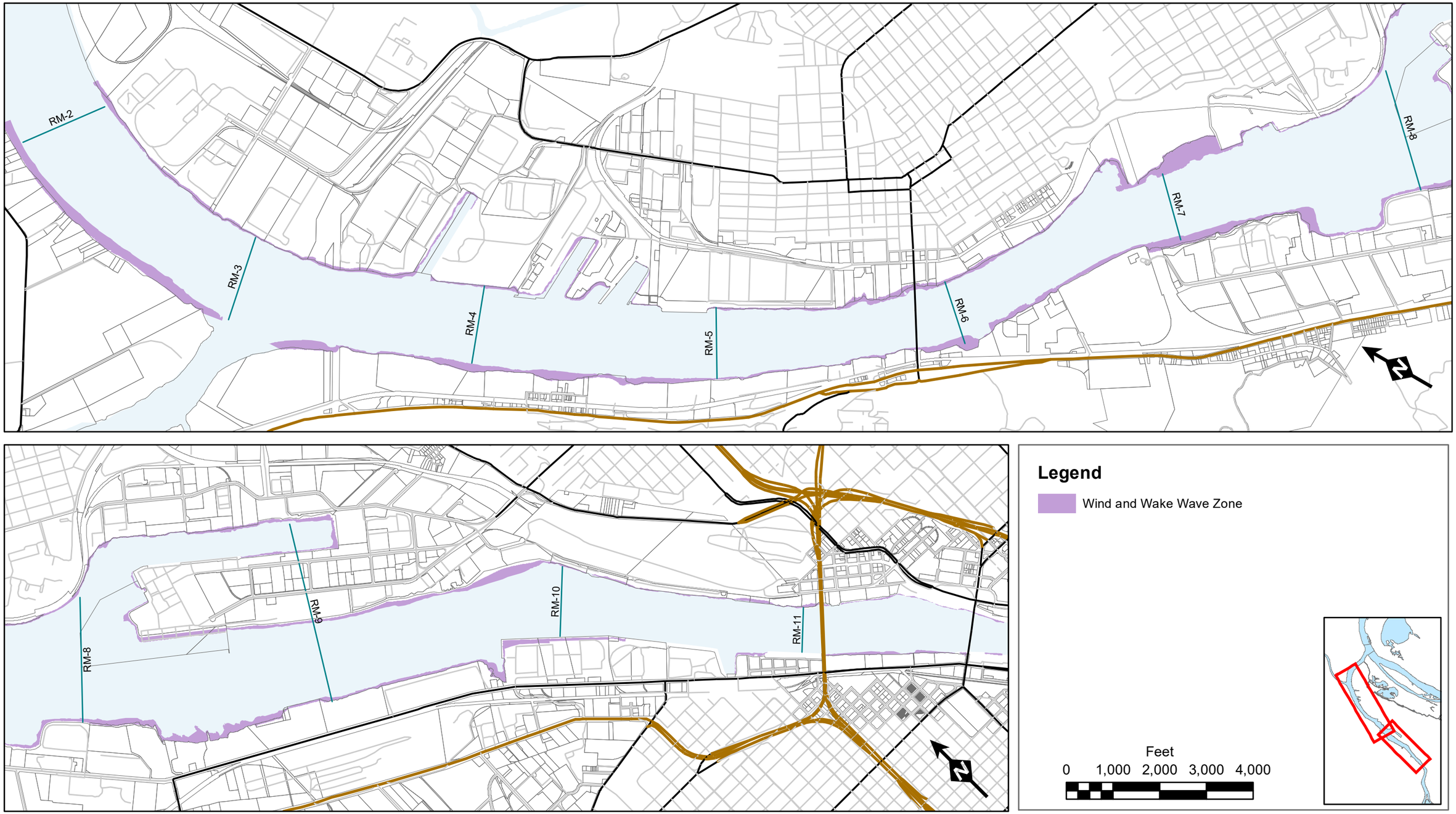


Figure 3.4-17. Wind and Wake Wave Susceptible Areas

Path: E:_Projects\Portland Harbor\GIS\MapDocuments\FS Figures\Section 3\Fig3-03-17_Wind-Wake-Wave.mxd, Created by: MLF

Date: 7/14/2015

Appendix L

Bank Erosion Hazard Index Evaluation of Riverbank

Attachment A

Riverbank Parameter Description for BEHI Calculation

1.0 Introduction

This appendix provides a description of the riverbank parameters used in the BEHI calculation for the riverbank erodibility evaluation and how the parameter was calculated.

2.0 Height of Bank and Bankfull Level

The riverbank height and the bankfull level were determined from cross sections prepared using the topographic survey conducted in fall 2020 by David Evans and Associates, Inc. These features were evaluated with cross sections prepared from the topographic data. A cross section was prepared for each riverbank area and along transects that encapsulate the variety of riverbank surface conditions encountered. Riverbank cross sections and applicable location maps are provided in Appendix G.

Per the EPA Riverbank Characterization Guidance (2019), the riverbank height was measured from the top of the bank to the toe of the slope. The toe of the slope is defined as the first significant break in slope that is below the Ordinary High Water Line (OHWL) but above the Mean High Water Line (MHWL). However, the toe of slope could not be determined above the MWHL for the topographic cross sections of the T4 Riverbank. In that case, per the guidance, the MHWL elevation was used as a proxy for the toe of bank elevation. The MHWL is equivalent to 10.14 feet NAVD88.

The bankfull level is the point on the riverbank that contains normal non-flood-level flows of the river throughout the year and is typically identifiable by visible changes in topography, vegetation type, or sediment grain size. Per the guidance (EPA, 2019), the bankfull level was approximated by the OHWL elevation, which is equivalent to 20.08 feet NAVD88.

The top of bank, OHWL, MHWL, riverbank height, and bankfull level are labeled on the riverbank cross sections provided in Appendix G. These values were used to support the erodibility evaluation presented in Section 3.3 with backup documentation provided in Appendix L (see Table L-1). Riverbank height values ranged between 19.4 and 29.4 feet. The riverbank height is the greatest at the north side of Slip 1 and the least at Berth 401. Bankfull height values ranged between 9.4 feet at Berth 401 to 19.4 feet along the north side of Slip 1.

3.0 Bank Angle

Per the EPA Riverbank Characterization Guidance (2019), the riverbank bank angle (slope) was calculated between the toe of the slope to the top of the bank for each topographic cross section. The bank angle may be steeper or more gradual in areas depending on the varying surface conditions (i.e., partial armoring, wooded retaining features, etc.). Therefore, a maximum and minimum bank angle was calculated along each cross section. Bank angles ranged between five and 64 degrees. The minimal bank angle was

observed along the sand beach area on the lower riverbank portion of Berth 401. The maximum bank angle was observed at the former Berth 412 riverbank area. A wood retaining structure is present along this stretch of riverbank which impacts the bank angle calculation.

4.0 Root Depth and Root Density

Vegetation root depths and density used in the BEHI calculations are estimated from observed vegetation types. These observations were made in the field while performing riverbank sampling activities. In general, the root depths were observed up to 0.5 to 3 feet below the riverbank surface and root density ranged from approximately 20 to 80 percent depending on the density of vegetation along the transect.

5.0 Bank Material Adjustments

Bank material adjustments in the BEHI calculations were conservatively selected using the most erodible surface material observed along the transect. The majority of the transects were observed to have at least a small portion of sand surface material. Therefore, a bank material adjustment for sand was included in the BEHI calculation which added 10 points to the score. This is a very conservative estimate considering most transects also included portions of riprap armoring or vegetation which provides stabilizing properties to the riverbank. For transect I-I, the most erodible surface material observed was silty sand. Silt does not require a bank material adjustment and an adjustment of 10 is used for sand, thus, the average was used in the BEHI bank material adjustment calculation for this transect (+5).

Attachment B

BEHI Worksheets

Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section A-A (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	19.4 **(A)**	**Bankfull Height** (ft) =	9.4 **(B)**	(**A**) / (**B**) =	2.0 **(C)**	8
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	2 **(D)**	**Study Bank Height** (ft) =	22.3 **(A)**	(**D**) / (**A**) =	0.09 **(E)**	8.5
Weighted Root Density (G)						
Root Density as **%** =	50 **(F)**			(**F**) × (**E**) =	4.5 **(G)**	9
Bank Angle (H)						
Bank Angle as *Degrees* =	35 **(H)**					3
Surface Protection (I)						
Surface Protection as **%** =	85 **(I)**					1.5

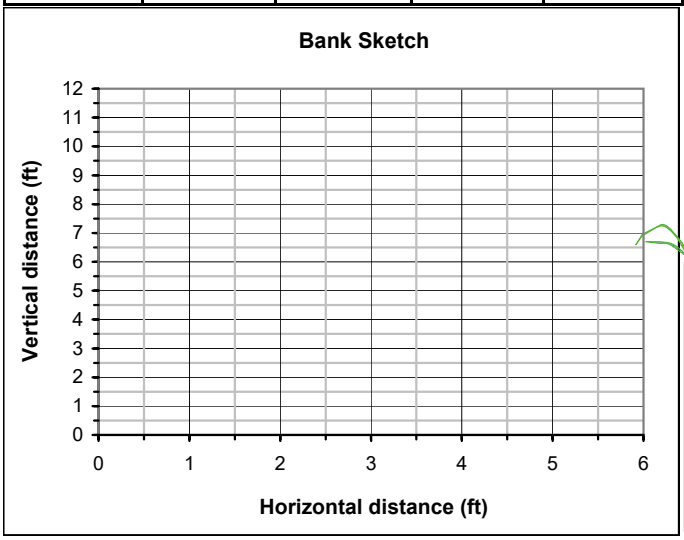
Bank Material Adjustment:

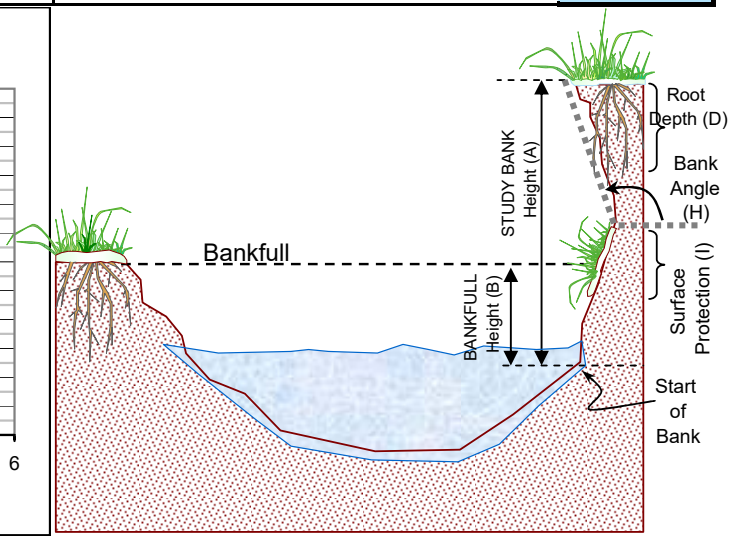
Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

Bank Material Adjustment +10

Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme	Adjective Rating and Total Score
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50	Very High 40





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Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section D-D (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	29.4 (A)	**Bankfull Height** (ft) =	19.4 (B)	(A) / (B) =	1.5 (C)	6.0
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	2 (D)	**Study Bank Height** (ft) =	29.2 (A)	(D) / (A) =	0.07 (E)	9
Weighted Root Density (G)						
Root Density as % =	25 (F)			(F) x (E) =	1.7 (G)	10
Bank Angle (H)						
Bank Angle as *Degrees* =	20 (H)					2
Surface Protection (I)						
Surface Protection as % =	25 (I)					6.5

Bank Material Adjustment:

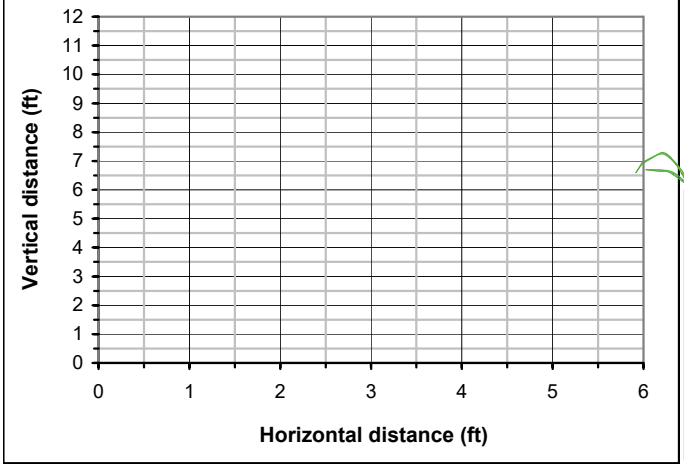
Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

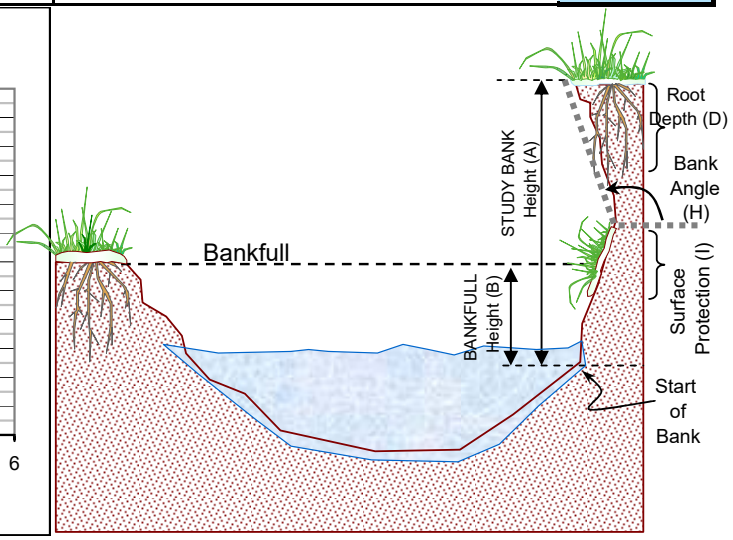
Bank Material Adjustment +10

Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme	Adjective Rating and Total Score
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50	Very High 43.5

Bank Sketch





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Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section F-F (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	20.9 (A)	**Bankfull Height** (ft) =	10.9 (B)	(A) / (B) =	1.9 (C)	8.0
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	2 (D)	**Study Bank Height** (ft) =	28.4 (A)	(D) / (A) =	0.07 (E)	9
Weighted Root Density (G)						
Root Density as % =	75 (F)			(F) x (E) =	5.3 (G)	8.5
Bank Angle (H)						
Bank Angle as *Degrees* =	44 (H)					3
Surface Protection (I)						
Surface Protection as % =	95 (I)					1

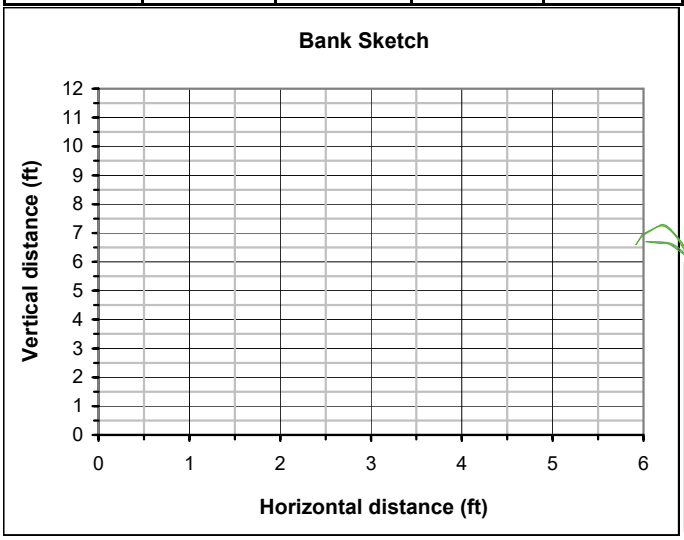
Bank Material Adjustment:

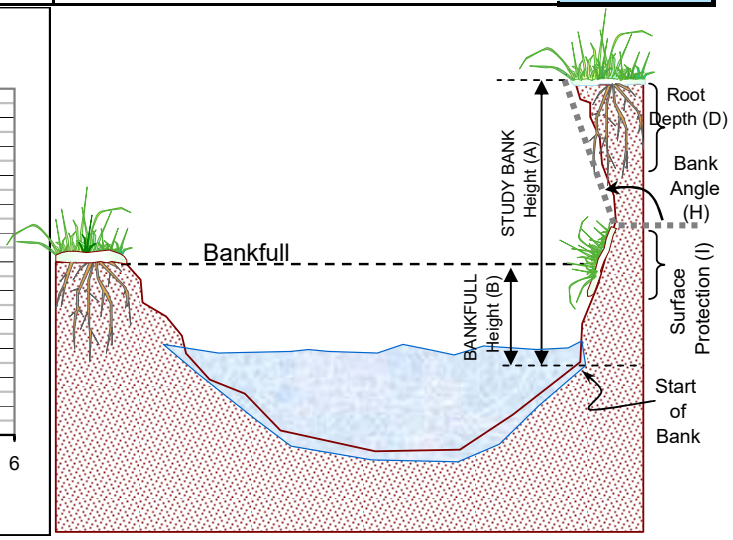
Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

Bank Material Adjustment: +10

Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme	Adjective Rating and Total Score
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50	High / 39.5





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Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section H-H (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	25.9 **(A)**	**Bankfull Height** (ft) =	15.9 **(B)**	(**A**) / (**B**) =	1.6 **(C)**	6.5
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	1 **(D)**	**Study Bank Height** (ft) =	27 **(A)**	(**D**) / (**A**) =	0.03 **(E)**	10
Weighted Root Density (G)						
Root Density as **%** =	75 **(F)**			(**F**) × (**E**) =	2.25 **(G)**	9.5
Bank Angle (H)						
Bank Angle as *Degrees* =	47 **(H)**					3.5
Surface Protection (I)						
Surface Protection as **%** =	10 **(I)**					9

Bank Material Adjustment:

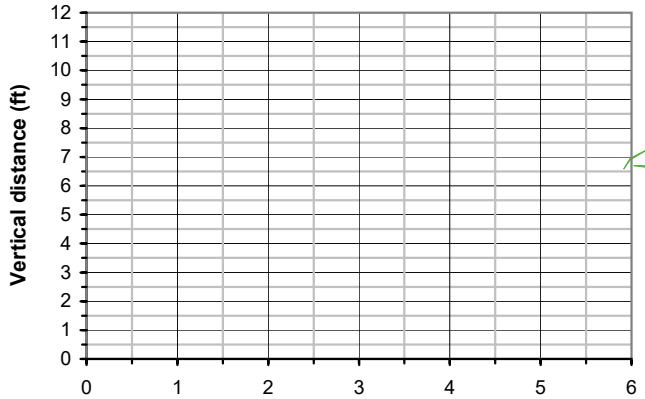
Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

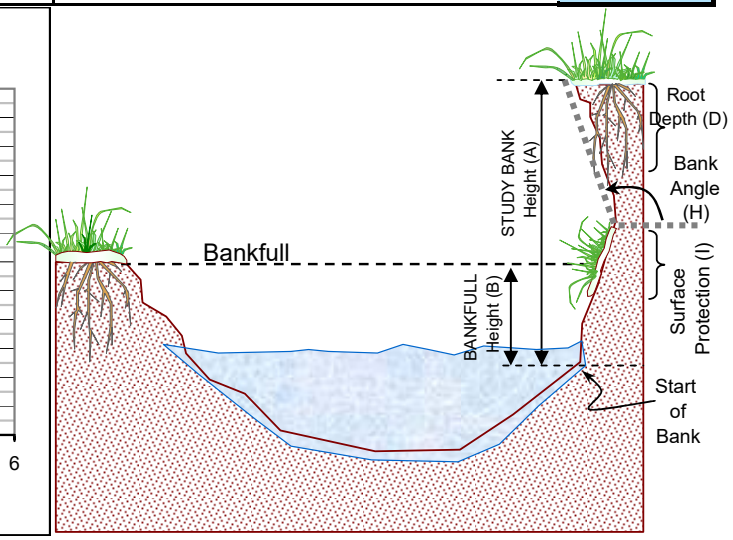
Bank Material Adjustment 10

Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme	Adjective Rating and Total Score
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50	Extreme 48.5

Bank Sketch





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Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section I-I (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	25.9 (A)	**Bankfull Height** (ft) =	15.9 (B)	(A) / (B) =	1.6 (C)	6.5
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	3 (D)	**Study Bank Height** (ft) =	27.6 (A)	(D) / (A) =	0.1 (E)	8.5
Weighted Root Density (G)						
Root Density as % =	80 (F)			(F) x (E) =	7.5 (G)	8
Bank Angle (H)						
Bank Angle as *Degrees* =	22 (H)					2
Surface Protection (I)						
Surface Protection as % =	80 (I)					2

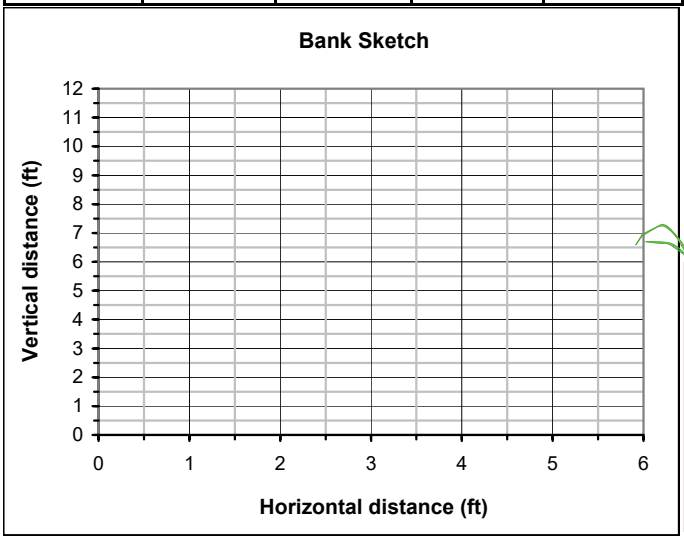
Bank Material Adjustment:

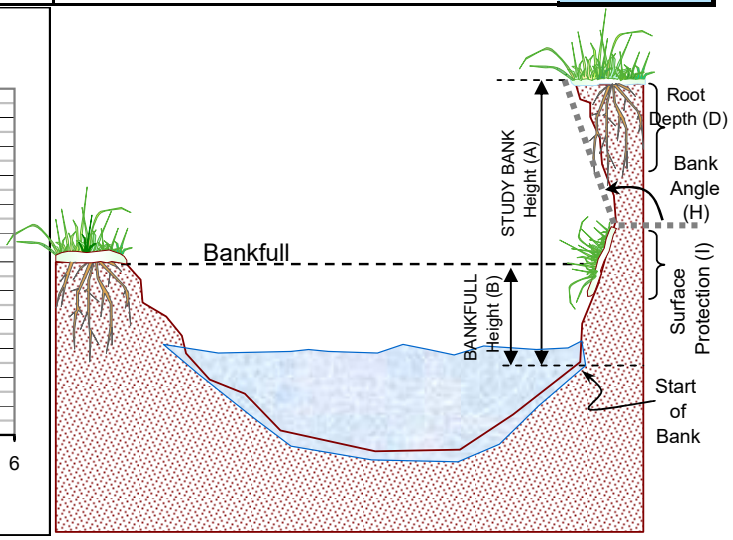
Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

Bank Material Adjustment: +5

Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme	Adjective Rating and Total Score
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50	High / 32





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Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section K-K (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	27.9 **(A)**	**Bankfull Height** (ft) =	17.9 **(B)**	(**A**) / (**B**) =	1.5 **(C)**	6
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	0.5 **(D)**	**Study Bank Height** (ft) =	19.9 **(A)**	(**D**) / (**A**) =	0.03 **(E)**	10
Weighted Root Density (G)						
Root Density as **%** =	20 **(F)**			(**F**) x (**E**) =	0.6 **(G)**	10
Bank Angle (H)						
Bank Angle as *Degrees* =	64 **(H)**					4
Surface Protection (I)						
Surface Protection as **%** =	10 **(I)**					9

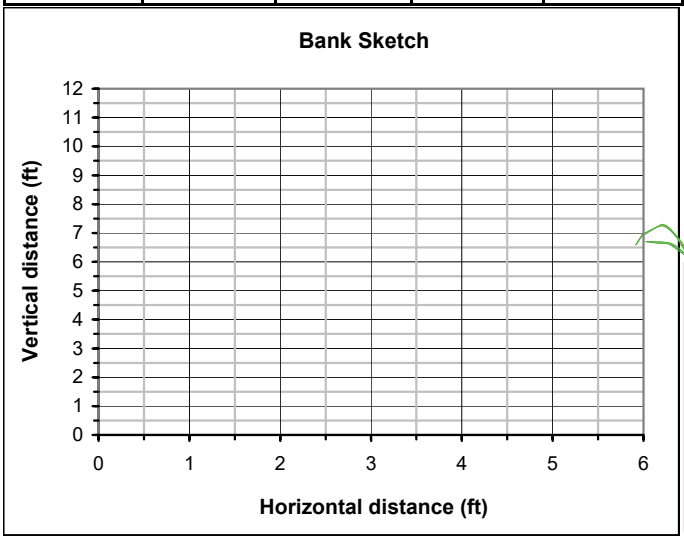
Bank Material Adjustment:

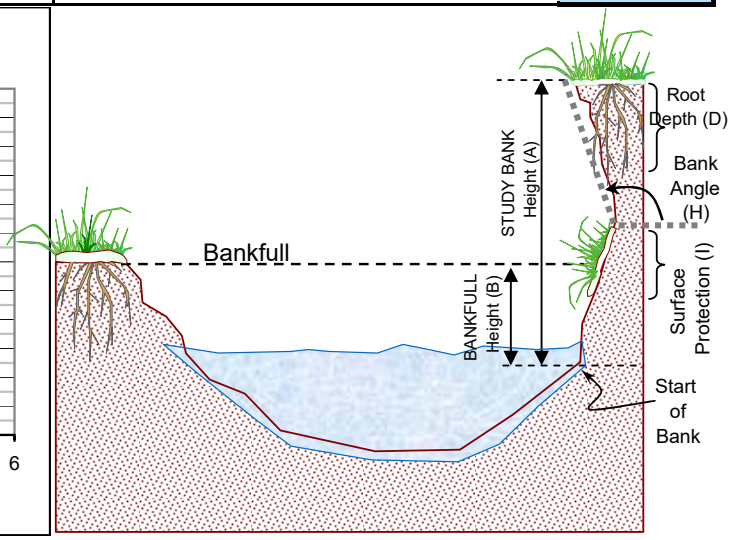
Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

Bank Material Adjustment +10

Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme	Adjective Rating and Total Score
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50	Extreme 49





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Worksheet 5-8. Form to calculate Bank Erosion Hazard Index (BEHI) variables and an overall BEHI rating (Rosgen, 1996, 2001a). Use **Figure 5-19** with BEHI variables to determine BEHI score.

Stream:	**Willamette River**	Location:	**Terminal 4**
Station:	**Cross Section L-L (Appendix G)**	Observers:	**C. Owens**
Date:	**2/8/2021**	Stream Type: **Perennial**	Valley Type:

						BEHI Score (Fig. 5-19)
Study Bank Height / Bankfull Height (C)						
Study Bank Height (ft) =	26.9 **(A)**	**Bankfull Height** (ft) =	16.9 **(B)**	(**A**) / (**B**) =	1.6 **(C)**	6
Root Depth / Study Bank Height (E)						
Root Depth (ft) =	1.5 **(D)**	**Study Bank Height** (ft) =	19.3 **(A)**	(**D**) / (**A**) =	0.07 **(E)**	8.5
Weighted Root Density (G)						
Root Density as **%** =	40 **(F)**			(**F**) x (**E**) =	2.8 **(G)**	9.5
Bank Angle (H)						
Bank Angle as *Degrees* =	32 **(H)**					2.5
Surface Protection (I)						
Surface Protection as **%** =	75 **(I)**					2.5

Bank Material Adjustment:

Bedrock (Overall Very Low BEHI)
Boulders (Overall Low BEHI)
Cobble (Subtract 10 points if uniform medium to large cobble)
Gravel or Composite Matrix (Add 5–10 points depending on percentage of bank material that is composed of sand)
Sand (Add 10 points)
Silt/Clay (no adjustment)

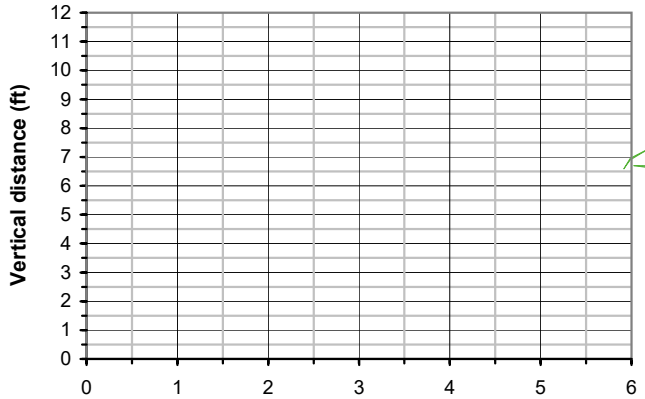
Bank Material Adjustment: +10

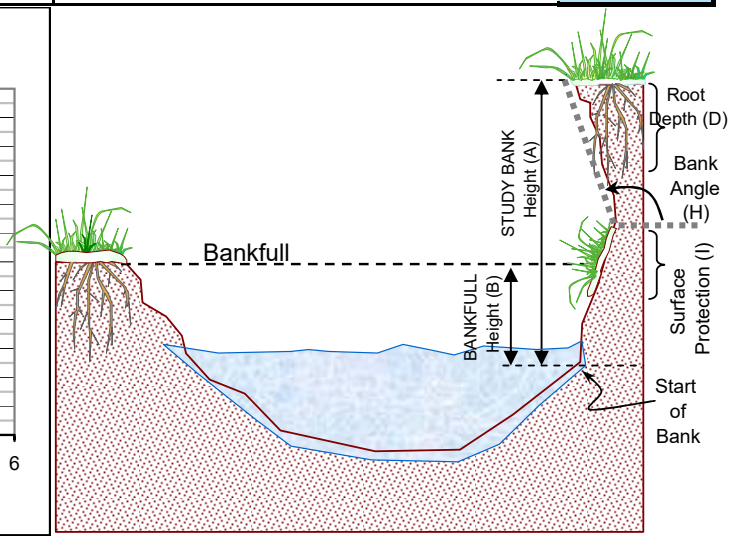
Stratification Adjustment
Add 5–10 points, depending on position of unstable layers in relation to bankfull stage

Very Low	Low	Moderate	High	Very High	Extreme
5 – 9.5	10 – 19.5	20 – 29.5	30 – 39.5	40 – 45	46 – 50

Adjective Rating and Total Score: High 39

Bank Sketch





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Attachment C

Table L-1

Table L-1
Riverbank Characteristics
Terminal 4 Riverbank Characterization
Portland, Oregon

Riverbank Section	Cross Section (Figure D-X)	Length (linear feet)	Top of Bank (ft NAVD88)	Toe of Slope (ft NAVD88)	Bankfull Elevation (ft NAVD88)	Riverbank Height (feet)	Bankfull Height (feet)	Minimum Angle (degrees)	Maximum Angle (degrees)	Bank Material Adjustment	BEHI Ranking
Berth 401	A-A'	800	29.5	10.14	20.08	19.4	9.4	5	35	10	Very High
North Side of Slip 1	D-D'	860	39.5	10.14	20.08	29.4	19.4	14	20	10	Very High
Berth 409	F-F'	320	31.0	10.14	20.08	20.9	10.9	15	44	10	High
South Side of Slip 1	H-H'	630	36.0	10.14	20.08	25.9	15.9	15	47	10	Extreme
Riverside of Slip 1	I-I'	400	36.0	10.14	20.08	25.9	15.9	9	22	5	High
Former Berth 412	K-K'	800	38.0	10.14	20.08	27.9	17.9	10	64	10	Extreme
Berth 414	L-L'	630	37.0	10.14	20.08	26.9	16.9	18	32	10	High

Notes:

1. BEHI = Bank Erosion Hazard Index
2. BEHI ranking applies to unprotected soils. Areas covered with rip rap or protected by structures are generally not subject to erosion.
3. Bank Material Adjustments were conservatively based on the most erodible surface material present in that area of the riverbank.

Appendix M

Analytical Laboratory Reports and Quality Assurance Review

1.0 Introduction

This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for riverbank soil and sediment samples collected in October 2020 for the Riverbank Characterization for the Terminal 4 Facility (T4) Action Area in Portland, Oregon. Riverbank soil and sediment samples were collected in accordance with the Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP) included as Appendix C in the *Riverbank Characterization Work Plan* (Apex, 2020). Riverbank soil and sediment samples were submitted to Apex Laboratories of Portland, Oregon (OR01039). In order to meet data quality objectives (DQOs) as presented in the *Riverbank Characterization Work Plan*, Appendix C (Apex, 2020), Apex Laboratories subcontracted some analytical services to Bureau Veritas Labs in Ontario, Canada (CN00023) and Analytical Resources, Inc. (ARI) of Tukwila, Washington (WA00037). Copies of the analytical laboratory reports are included in this appendix, as shown below:

Analytical	Analytical Lab	Report Date	Sampling Event
A0I0826	Apex Laboratories	November 6, 2020	Riverbank Soil: South Side of Slip 1, Riverside of Slip 1, and Berth 401
20J0057	Analytical Resources, Inc.	October 21, 2020	Riverbank Soil: South Side of Slip 1, Riverside of Slip 1, and Berth 401
C0Q2499	Bureau Veritas Labs	February 24, 2021	Riverbank Soil: South Side of Slip 1, Riverside of Slip 1, and Berth 401
C120326	Bureau Veritas Labs	March 5, 2021	Berth 401 (Archived Sample Analysis T4RB-1U)
A0J0123	Apex Laboratories	November 17, 2020	Riverbank Soil: Berth 401 and North Side of Slip 1
20J0079	Analytical Resources, Inc	October 21, 2020	Riverbank Soil: Berth 401 and North Side of Slip 1
C0Q2516	Bureau Veritas Labs	November 17, 2020	Riverbank Soil: Berth 401 and North Side of Slip 1
A0J0199	Apex Laboratories	November 5, 2020	Riverbank Soil: Berth 408
20J0109	Analytical Resources, Inc.	October 26, 2020	Riverbank Soil: Berth 408
C0Q4007	Bureau Veritas Labs	October 28, 2020	Riverbank Soil: Berth 408
A0J0312	Apex Laboratories	March 17, 2021	Riverbank Soil: Berth 409, Head of Slip 3, and Former Berth 412

Analytical	Analytical Lab	Report Date	Sampling Event
20J0194	Analytical Resources, Inc	October 27, 2020	Riverbank Soil: Berth 409, Head of Slip 3, and Former Berth 412
C0Q7716	Bureau Veritas Labs	November 10, 2020	Riverbank Soil: Berth 409, Head of Slip 3, and Former Berth 412
A0J0503	Apex Laboratories	December 7, 2020	Riverbank Soil: Former Berth 412 and Riverside of Slip 3
20J0291	Analytical Resources, Inc	January 13, 2021	Riverbank Soil: Former Berth 412 and Riverside of Slip 3
C0R6852	Bureau Veritas Labs	January 8, 2021	Riverbank Soil: Former Berth 412 and Riverside of Slip 3
A0J0545	Apex Laboratories	December 21, 2020	Riverbank Soil: Riverside of Slip 3
20J0292	Analytical Resources, Inc	November 24, 2020	Riverbank Soil: Riverside of Slip 3
C0R6843	Bureau Veritas Labs	January 8, 2021	Riverbank Soil: Riverside of Slip 3
A0J0663	Apex Laboratories	December 2, 2020	Sediment
C0R8571	Bureau Veritas Labs	December 2, 2020	Sediment
C118615	Bureau Veritas Labs	February 25, 2021	Archived Sample Analysis (T4RB-17L)

2.0 Data Validation

The QA review included examination and validation of the laboratory data packages for the following:

- Analytical preparation and quantitation methods
- Analytical method holding times
- Sample handling
- Chain of custody handling
- Detection and reporting limits
- Method blank detections
- Equipment blank detections

- Laboratory control samples, matrix spikes, and surrogates to assess accuracy
- Laboratory duplicates, laboratory control sample duplicates, matrix spike duplicates, and field duplicates to assess precision

The QA/QC review did not include a review of raw data since further evaluation of data was not necessary; however, raw data packages were provided by the analytical laboratories.

The elements included in this QA/QC review are consistent with those specified in the SAP/QAPP (Apex, 2020). The general quality assurance (QA) objectives for this project are to develop and implement procedures for obtaining and evaluating data of a specified quality that can be used to evaluate sediment and riverbank soil conditions. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain-of-custody procedures.

The laboratory quality control (QC) samples provided in data packages were used to evaluate laboratory contamination or background interferences, sample preparation efficiency, instrumentation performance, and sample matrix interferences. The QC samples provided by the analytical laboratories include method blanks, laboratory control samples (LCS/LCSD), matrix spikes (MS/MSD), and laboratory duplicates. Surrogates were also analyzed to assess sample preparation efficiency and matrix interferences.

Field QC samples included equipment blanks and field duplicates. An equipment blank was collected using each sample collection method for riverbank soil and surface sediment. Field duplicates for riverbank soil were collected at a frequency of one per 20 samples. One field duplicate for surface sediment was collected (out of 5 samples collected).

3.0 Analytical Methods

Riverbank soil samples were analyzed for the following:

- Total petroleum hydrocarbons (TPH) as diesel and oil range organics by Northwest Method NWTPH-Dx;
- PAHs by EPA Method 8270E (low-level method);
- PCB Aroclors by EPA Method 8082A;
- Dioxins/furans by EPA Method 1613B;
- Organochlorine pesticides by EPA Method 8081B; and
- Metals (arsenic, cadmium, copper, lead, mercury, and zinc) by EPA Method 6020A.

Twenty percent (20%) of riverbank soil samples were analyzed for the following:

- Chlorobenzene by EPA Method 8260D;
- Tributyltin ion by EPA Method 8270E-SIM; and
- Bis(2-ethylhexyl)phthalate by EPA Method 8270E.

Surface sediment samples were analyzed for the following:

- PAHs by EPA Method 8270E (low-level method);
- PCB congeners by EPA Method 1668C;
- Grain size by ASTM D422 modified;
- Total solids by Standard Method (SM) 2540G;
- Total organic carbon by EPA Method 9060A; and
- Dioxins/furans by EPA Method 1613B.

3.1 Riverbank Soil Contingent Analytical Methods

Some analytical methods were contingent on initial results. Organochlorine pesticide analysis by EPA Method 8081B performed by Apex Laboratories is not able to achieve an MDL for dieldrin below the Portland Harbor Cleanup Level (CUL). Due to the number of samples to be collected and the costs associated with analyzing dieldrin with a high-resolution method (EPA 1699) needed to achieve the Portland Harbor CUL of 0.07 µg/kg, samples were analyzed using EPA 8081B method as a screening method. Based on results using EPA Method 8081B and review of analyte result exceedances of Portland Harbor Remedial Action Levels (RALs) and CULs, riverbank soil samples T4RB-25U, T4RB-44L, and T4RB-51U were chosen to be analyzed by EPA method 1699 for dieldrin. These sample locations were selected based on the following criteria.

- Samples were analyzed for dieldrin by EPA 8081B. Dieldrin was not detected in these samples and the method detection limit (MDL) exceeded the Portland Harbor CUL.
- At least one organochlorine pesticide was detected using the EPA 8081B method.
- Results did not exceed Portland Harbor RALs for other contaminants of interest (COI).

Additionally, PCBs were analyzed by EPA 8082A for PCB Aroclors. The PCB method will achieve the total PCB Portland Harbor CUL but may reduce the level of data quality by over- or under- estimating PCB concentrations since the PCB Aroclor method relies on pattern recognition with second-column verification. The PCB Aroclor patterns may vary greatly depending on the amount of weathering of individual congeners and interferences may overestimate total PCB concentration. If PCB Aroclor patterns were detected in samples, then additional analysis by EPA 1668C for PCB congeners was recommended in certain cases. The PCB congeners method is easier to detect and correct for results biased by interfering compounds, and quantitation of individual congeners is more accurate than estimating Aroclors. Based on PCB results using

the EPA 8082A method, riverbank soil sample T4RB-1L was analyzed for PCB congeners by EPA method 1668C. This sample location was selected based on the following.

- The total PCBs calculation had potential error due to multiple Aroclor patterns present for the sample.
- The total PCBs result was less than five times the Portland Harbor RAL.
- Results did not exceed Portland Harbor RALs for other COIs.

3.2 Archived Samples

In accordance with the Work Plan, riverbank soil samples T4RB-1U, T4RB-4U, T4RB-16L, T4RB-17L, T4RB-18L, T4RB-44U, and T4RB-45U were archived at -18 degrees Celsius (ºC) by Apex Laboratories. Based on results of COIs for co-located samples, analysis of riverbank soil samples T4RB-1U and T4RB-17L was requested on January 19, 2021. The requested analytical methods included PCB congeners by EPA Method 1668C and dioxins/furans by EPA Method 1613B for riverbank soil samples T4RB-1U and T4RB-17U and PAHs by EPA Method 8270E (low-level) for sample T4RB-17U. Since the samples were frozen, the holding time for PAHs was extended to 1 year. PCBs and dioxins/furans are stable and do not have a recommended holding time. These samples were collected in September and October 2020; therefore, sample were within the recommended holding times.

4.0 Data Quality Assurance Review

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of data of a specified quality. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain-of-custody procedures.

Reporting limits and analytical results were compared to cleanup and screening levels for each parameter in the matrix of concern. Precision, accuracy, completeness, and comparability parameters used to indicate data quality are defined below.

4.1 Data Qualifiers

Any data that is found to have possible bias or error was qualified and flagged. The following are flags with definitions used in this QA/QC review and data tables.

J	The reported value is an estimated concentration.
J-	Result is an estimated value and may be biased low.

J+	Result is an estimated value and may be biased high.
JN	The analyte was tentatively identified and did not meet method criteria for confirmation.
UJ	The analyte was analyzed for but was not detected. However, the detection limit may be inaccurate or imprecise.
U	Analyte was not detected.

4.2 Holding Times and Sample Receipt

The holding time is the minimum amount of time the sample can be stored before analytes start to degrade and are not representative of initial sampling concentrations. Holding times are defined by analytical methods. All samples included in this data quality review were analyzed within the method recommended holding times.

Chain of custody documents were appropriately maintained. They were filled out with the correct sample ID, sampling date, sampling time and analyses requested. No discrepancies were found between sampling container labels and the chain of custody document. Samples were received by analytical laboratories on ice and below six degrees Celsius (6ºC). All containers were intact upon receipt by the laboratory and not broken.

4.3 Laboratory Instrument Calibration

Samples results are valid based on instrument QC minimum baseline checks as appropriate with Stage 2B validation as detailed per method below.

NWTPH-Dx. Initial calibration was performed with a sufficient number of calibration standards and response factors were within control limits. Initial calibration blanks were also performed before calibration. Initial calibration verifications were performed after each initial calibration and were within control limits. Second-source calibration verification was performed, and recoveries were within control limits. Continuing calibration checks and blanks were performed at the beginning/end of each analytical sequence, every ten samples, and were within control limits.

EPA 8260D. Instrument performance checks using bromofluorobenzene (BFB) to tune were performed at the beginning of each analytical sequence and were subsequently performed every 12 hours thereafter. Base peak mass assignment and ion abundance criteria were met. Initial calibration was performed with a sufficient number of calibration standards and response factors were within control limits. Initial calibration blanks were also performed before calibration. Initial calibration verifications were performed after each initial calibration and were within control limits. Second-source calibration verification was performed, and recoveries were within control limits. Continuing calibration checks and blanks were performed at the beginning of each analytical sequence, every ten samples, and were within control limits. Instrument reporting level checks were also performed at the beginning of analytical sequences with environmental samples.

EPA 8082A. Initial calibration was performed with a sufficient number of calibration standards and response factors were within control limits. Initial calibration blanks were also performed before calibration. Initial calibration verifications were performed after each initial calibration and were within control limits. Second-source calibration verification was performed, and recoveries were within control limits. Continuing calibration checks and blanks were performed at the beginning of each analytical sequence, every ten samples, and were within control limits.

EPA 8081B. Instrument performance checks using DDT and endrin were performed at the beginning of each analytical sequence. Breakdown products were within control limits before environmental samples were analyzed. Initial calibration was performed with a sufficient number of calibration standards and response factors were within control limits. Initial calibration blanks were also performed before calibration. Initial calibration verifications were performed after each initial calibration and were within control limits. Second-source calibration verification was performed, and recoveries were within control limits. Continuing calibration checks and blanks were performed at the beginning and end of each analytical sequence, every ten samples, and were within control limits.

EPA 8270E and 8270E-SIM. Instrument performance checks using decafluorotriphenylphosphine (DFTPP) to tune were performed at the beginning of each analytical sequence and subsequently performed every 12 hours thereafter. Initial calibration data including initial calibration standards (a minimum of five per analyte), initial calibration verification (ICV), and initial calibration blanks (ICBs) are provided for all requested analytes and samples reported in laboratory data packages. Initial calibration standards are the appropriate concentration, and a sufficient number were utilized for calibration. Calibration types are present, calibration equations with weighting factors, and correlation coefficients are present and appropriate for the method used. Standard concentrations were recalculated using the initial calibration curve and recoveries are present. ICVs were analyzed using a second source for target analytes and surrogates at the mid-point of the calibration and responses are present.

Continuing calibration data including continuing calibration verification (CCV) and continuing calibration blanks (CCBs) are provided for all requested analytes and samples reporting in laboratory data packages. CCV and CCBs were performed at the beginning of each analytical sequence and at least every 12 hours thereafter. CCVs and CCBs were analyzed after the instrument performance check and before environmental samples. CCV concentrations were analyzed at the mid-point of the calibration and responses are present. Instrument blanks were utilized at the end of each analytical sequence.

EPA 6020A. Instrument tuning standards were analyzed prior to calibration and contained the appropriate elements and required isotopes. Percent RSDs for the analysis of the tuning standard are also present. Instrument calibration was performed at the beginning of each day or when calibration checks failed. Calibration types are present, calibration equations with weighting factors, and correlation coefficients are present and appropriate for the method used. The appropriate number of calibration standards were used (no less than five acceptable responses) and the average of three scans was used for response values.

Reporting limit standards and initial calibration verifications (ICVs) were analyzed after each calibration. ICVs had recoveries present for each analyte, were prepared from a secondary source standard from the calibration and were at a concentration near the middle of the calibration range. Initial calibration blanks (ICBs) were analyzed after ICVs and were provided for all analytes and samples reported in laboratory data packages.

Interference check samples (ICS; Solution A and Solution B) were analyzed consecutively after ICBs and every 12 hours thereafter.

CCVs were analyzed every ten samples, at the beginning and end of each analytical sequence, and at least every two hours. CCVs were prepared using the same source as the calibration and had a concentration near the mid-point of the calibration range. Continuing calibration blanks (CCBs) were analyzed immediately after each CCV.

EPA 1613B, 1668C, and 1699. System performance checks and tuning were performed prior to all other sample analysis. Initial calibration was performed with the minimum of five standards. Continuing calibration verification was performed after system performance checks and bracketed each 12-hour period. Instrument blanks were analyzed before environmental samples and throughout the analytical sequence.

4.3 Reporting Limits and Detection Limits

Reporting limits are the lowest concentration an instrument is capable of accurately quantifying an analyte. They are determined by the laboratory and are based on instrumentation capabilities, the matrix of field samples, sample preparation procedures and suggested reporting limits by the analytical method. In some cases, reporting limits exceeded the cleanup or screening levels. To account for this difference in some cases, the laboratories reported results to the lowest method detection limits. Method detection limits (MDL) are the lowest concentrations that the instrument can positively identify an analyte; however, concentrations reported between the MDL and reporting limit are estimated and are J-flagged as such.

In most cases MDLs or reporting limits were below comparison standards (Portland Harbor Record of Decision cleanup levels [CUL] and remedial action levels [RAL]). Analytes that were not detected but had MDLs and/or reporting limits above one or more of the comparison standards are italicized in the data tables.

4.4 Method Blanks

A method - or laboratory - blank is a quality control sample prepared by the laboratory from an analyte-free matrix and analyzed in an analytical batch along with environmental and other QC samples. It is used to assess laboratory contamination or background interferences. The following discusses detections in method blanks.

Analytical Report C0Q2499. Octa CDD was detected in the method blank of analytical batch 7030322. The method blank concentration was less than ten times the octa CDD concentration of the associated riverbank samples. Results were not flagged.

Analytical Report C0Q2516. Octa CDD was detected in the method blank of analytical batches 7015723 7016913. The method blank concentration was less than ten times the octa CDD concentration of the associated riverbank samples. Results were not flagged.

For analytical batch 7016913, 1,2,3,4,6,7,8-hepta CDD, 1,2,3,7,8-penta CDF, 1,2,3,4,6,7,8-hepta CDF, and octa CDF were detected in the method blank. The associated samples T4RB-2U, T4RB-5L, T4RB-9L, T4RB-10U, and DUP-3 (T4RB-9L) also had concentrations of one or more of these analytes similar to the method blank. These results are J plus (J+) flagged.

Analytical Report C0Q4007. Octa CDF was detected in the method blank of analytical batch 7005187. The method blank concentration was less than ten times the octa CDF concentration of the associated riverbank samples. Results were not flagged.

Analytical Report A0J0312. Aroclor 1232 and Aroclor 1242 were detected in the method blank of analytical batch 0100700. Aroclor 1232 and Aroclor 1242 were not detected in the associated riverbank samples with the exception of sample T4RB-17U. The result for Aroclor 1242 for sample T4RB-17U was less than ten times the concentration of the method blank. Laboratory contamination may have significantly contributed to the Aroclor 1242 concentration for T4RB-17U. The result is J plus (J+) flagged as an estimated value that may be biased high.

Analytical Report C0Q7716. Octa CDD was detected in the method blank of analytical batches 7015723. The method blank concentration was less than ten times the octa CDD concentration of the associated riverbank samples. Results were not flagged.

For analytical batch 7016913, 1,2,3,4,6,7,8-hepta CDD, 1,2,3,7,8-penta CDF, 1,2,3,4,6,7,8-hepta CDF, Octa CDD and octa CDF were detected in the method blank. The associated samples T4RB-16U and T4RB-16L-052C also had concentrations of 1,2,3,7,8-penta CDF that were less than ten times the concentration found in the method blank. These results are 'J+' flagged as estimated values that may be biased high.

Analytical Report A0J0503 and A0J0545. Aroclor 1232 and Aroclor 1242 were detected in the method blank of analytical batch 0100700. Aroclor 1232 and Aroclor 1242 were not detected in the associated riverbank samples and potential laboratory contamination is not suspected to have influenced sample results.

4.5 Equipment Blanks

An equipment blank is a sample prepared in the field by rinsing equipment with deionized blank water after decontamination. The laboratory then analyzes that rinsate water for target analytes to determine if cross-contamination may have been present in the field. Detections in equipment blanks can also be indicative of laboratory contamination. If contaminants are present at concentrations greater than the detection limit, then cross-contamination may have occurred. If target analytes are detected in samples above the detection limit and less than ten times the equipment blank concentration, then those samples may reflect possible high bias due to contamination and will be 'J+' flagged. One equipment blank was analyzed for each sampling method (riverbank sampling and sediment sampling).

For the sediment sampling equipment blank, several PCB congeners were detected between the estimated detection limit and the reporting limit. However, these detections were far less than ten times the concentrations detected in sediment samples since water detection limits are much lower than solids.

The riverbank soil equipment blank did not have detections above the detection limit and field contamination is not suspected.

4.6 Accuracy

Accuracy compares the accepted reference concentration of an analyte to the concentration determined analytically. Accuracy is measured as a percent recovery. This recovery must be within a certain range - or control limit - for the data in an analytical batch to be considered acceptable. The analytical laboratory provides quality control samples and surrogates to help determine the accuracy and acceptability of the data reported. These quality control samples and surrogates are discussed below.

4.6.1 Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control duplicate samples (LCSD) were analyzed by the laboratory to assess the accuracy of the analytical methods. One set of LCS and LCSDs were analyzed per analytical batch. The LCS and LCSDs are prepared from an analyte-free matrix that is spiked with known levels of compounds of concern. The concentrations are measured and compared to the known spiked levels; expressed as a percent recovery. The LCS and LCSD percent recoveries were within acceptable control limits except for the following:

Analytical Report C0R8571. PCB-104 and PCB-155 were recovered above the upper control limit for analytical batch 7065127. The PCB congeners were not detected in the associated sediment samples and results were not flagged.

4.6.2 Matrix Spikes

A matrix spike QC sample is used to assess the performance of the analytical method by determining potential matrix interferences. Matrix spike (MS) and matrix spike duplicate (MSD) analyses are performed on one environmental sample per analytical batch. A matrix spike sample uses an environmental sample that is spiked with known concentrations of analytes of interest. The matrix spike is then prepared and analyzed with the same analytical procedures as environmental samples in the analytical batch. The resulting concentration of the matrix spike is then compared to the known - or true - values plus the non-spiked environmental sample concentration. This comparison is expressed as a percent recovery.

Analytical Reports A0I0826, A0J0123, A0J0199, and A0J0312. For analytical batch 0100400, the recovery of 4,4'-DDD, 4,4'-DDT, endosulfan sulfate, and cis-nonachlor were recovered above the upper control limit. The QA source sample matrix is T4RB-46U and these analytes were not detected except for 4,4'-DDT. This result is 'J+' flagged as an estimated value that may be biased high.

Analytical Report C0Q2499. Octa CDD was recovered above the upper control limit for analytical batch 7030322. The QA source sample matrix was DUP-1 (T4RB-25L) and the octa CDD result is 'J+' flagged as an estimated value that may be biased high.

Analytical Report A0J0199. For analytical batch 0100604, the recovery of lead and zinc were below the lower control limit when riverbank sample T4RB-19L was used as the QC source sample matrix. Lead and zinc are J minus (J-) flagged as estimated values that may be biased low for riverbank soil sample T4RB-19L.

Analytical Report C0Q4007. 1,2,3,4,6,7,8-Hepta CDD and Octa CDD was recovered above the upper control limit for analytical batch 7005187. The QA source sample matrix was T4RB-19L and the 1,2,3,4,6,7,8-Hepta CDD and octa CDD results are 'J+' flagged as estimated values that may be biased high.

Analytical Report A0J0312. The recovery of Aroclor 1016 was above the upper control limit for analytical batch 0100700. The QC source sample matrix was not included in report A0J0312 and results are accepted based on the LCS recovery of Aroclor 1016.

The recovery of 4,4'-DDT, cis-nonachlor, and 2,4'-DDD were above the upper control limit. These analytes were not detected in the QC source sample (T4RB-K1) and results were not flagged.

Analytical Report C0R6852. 1,2,3,4,6,7,8-Hepta CDD and Octa CDD were recovered above the upper control limit for analytical batch 7055856. The QA source sample matrix was T4RB-44L and the 1,2,3,4,6,7,8-Hepta CDD and octa CDD results are 'J+' flagged as estimated values that may be biased high.

Analytical Report A0J0545. The recovery of zinc was above the upper control limit for analytical batch 0100878. The QC source sample matrix was not included in report A0J0545 and results are accepted based on the LCS recovery included in the analytical batch.

Analytical Report C0R6843. 2,3,7,8-Tetra CDD and Octa CDD were recovered outside of the control limit. was recovered above the upper control limit for analytical batch 7051692. The QC source sample matrix was not included in report C0R6843 and results are accepted based on the LCS recovery included in the analytical batch.

Analytical Report C0R8571. 1,2,3,4,6,7,8- Hepta CDD and Octa CDD were recovered outside of the control limit. was recovered above the upper control limit for analytical batch 7055856. The QC source sample matrix was not included in report C0R8571 and results are accepted based on the LCS recovery included in the analytical batch.

4.6.3 Surrogates

Surrogates are organic compounds that are similar in chemical composition to the analytes of interest but are not likely to be found in the environment. They are spiked at a known concentration into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference, sample preparation efficiency, and analysis performance on a sample-specific basis.

The surrogate 2,4,5,6-TCMX for organochlorine pesticide analysis of riverbank soil sample T4RB-24L was below the lower laboratory control limit. Organochlorine pesticides were not detected for the sample T4RB-24L and the results are UJ-flagged as estimated at the detection limit due to the potential low bias.

The surrogate 2,4,5,6-TCMX for organochlorine pesticide analysis of riverbank soil sample DUP-1 (T4RB-25L) was below the lower laboratory control limit. Organochlorine pesticides were not detected for the sample DUP-1 (T4RB-25L) and the results are UJ-flagged as estimated at the detection limit due to the potential low bias.

The surrogate 2,4,5,6-TCMX for organochlorine pesticide analysis of riverbank soil sample T4RB-7U was below the lower laboratory control limit. Organochlorine pesticides were not detected for the sample T4RB-7U and the results are UJ-flagged as estimated at the detection limit due to the potential low bias.

The surrogate 2,4,5,6-TCMX for organochlorine pesticide analysis of riverbank soil sample T4RB-9L was below the lower laboratory control limit. Organochlorine pesticides were not detected for the sample T4RB-9L and the results are UJ-flagged as estimated at the detection limit due to the potential low bias.

The surrogate 2,4,5,6-TCMX for organochlorine pesticide analysis of riverbank soil sample DUP-3 (T4RB-9L) was below the lower laboratory control limit. Organochlorine pesticides were not detected for the sample DUP-3 (T4RB-9L) and the results are UJ-flagged as estimated at the detection limit due to the potential low bias.

Surrogates phenol-d6 and 2-fluorophenol were recovered below the lower control limit for PAH analysis of riverbank soil sample T4RB-19L. Phenols were not an analyte of interest and the low surrogate recoveries are not indicative of matrix interference for PAHs. The PAH results are accepted based on the recovery of the remaining surrogates.

For TPH analysis of T4RB-17U, T4RB-K1, and T4RB-48U, the surrogate was not recovered due to a necessary dilution performed on the sample. Since the surrogate could not confirm analyte recovery, the results are estimated. Diesel was not detected and is UJ-flagged as estimated at the reporting limit. The oil result is J-flagged.

The surrogate decachlorobiphenyl was recovered above the upper control limit for organochlorine pesticide analysis by EPA 8081 for riverbank soil sample T4RB-17U. Pesticides were not detected and data quality is not affected.

The surrogate decachlorobiphenyl was recovered above the upper control limit for organochlorine pesticide analysis by EPA 8081 for riverbank soil sample T4RB-K1. The pesticide 4,4'-DDD was detected in the sample and the result may be biased high (J+ flagged).

The surrogate decachlorobiphenyl was recovered above the upper control limit for organochlorine pesticide analysis by EPA 8081 for riverbank soil sample T4RB-46U The pesticides 4,4'-DDE, 4,4'-DDT, and 2,4'-DDT were detected in the sample and the results may be biased high (J+ flagged).

The surrogate phenol-d6 was recovered below the lower control limit for PAH analysis of riverbank soil samples T4RB-17L-ON, T4RB-45L, T4RB-46L, T4RB-47L, T4RB-43U, and T4RB-49U due to dilutions. Phenols were not an analyte of interest and the low surrogate recoveries are not indicative of matrix interference for PAHs. The PAH results are accepted based on the recovery of the remaining surrogates.

Surrogates phenol-d6 and 2-fluorophenol were recovered below the lower control limit for PAH analysis of riverbank soil samples T4RB-BEBRA and T4RB-47U. Phenols were not an analyte of interest and the low surrogate recoveries are not indicative of matrix interference for PAHs. The PAH results are accepted based on the recovery of the remaining surrogates.

The surrogate 2,4,5,6-TCMX for organochlorine pesticide analysis of riverbank soil sample T4RB-51U was below the lower laboratory control limit. Detected results are J minus (J-) flagged as estimated values that

may be biased low. Not detected results are 'UJ' flagged as estimated non-detects since the detection limit may be inaccurate or imprecise.

For PAH analysis of riverbank soil sample T4RB-48U, surrogates were recovered outside of the control limit due to a dilution performed on the sample. Detected and not detected PAH results should be considered estimated.

Surrogates phenol-d6 and 2-fluorophenol were recovered below the lower control limit for PAH analysis of sediment sample SG07. Phenols were not an analyte of interest and the low surrogate recoveries are not indicative of matrix interference for PAHs. The PAH results are accepted based on the recovery of the remaining surrogates.

For PAH analysis of sediment sample Dup-6 (SG-07), surrogates were recovered outside of the control limit due to a dilution performed on the sample. Detected and not detected PAH results should be considered estimated.

4.6.4 Labeled Standards

Labeled standards are spiked directly into samples before preparation to determine matrix interferences and concentration of analytes.

Dioxin/Furans. For samples T4RB-18U and T4RB-21L, the labeled standard 13C-OCDD was recovered above the upper control limit. OCDD was detected and may be biased high based on the labeled standard recovery. The OCDD result for T4RB-18U and T4RB-21L is 'J+' flagged as an estimated value that may be biased high.

For samples DUP-4 (collected from location T4RB-21L), SG07, and T4RB-18L-OM, the labeled standard C13-1,2,3,6,7,8-HexaCDD was recovered above the upper control limit. 1,2,3,6,7,8-HexaCDD was detected for these samples and the result may be biased high ('J+' flagged).

For sample T4RB-17L-ON, the labeled standard C13-1,2,3,4,7,8-HexaCDD was recovered above the upper control limit. 1,2,3,4,7,8-HexaCDD was detected for sample T4RB-17L-ON and the result is 'J+' flagged as an estimated value that may be biased high.

The labeled standards C13-1,2,3,4,6,7,8-HeptaCDF and C13-1,2,3,4,7,8,9-HeptaCDF were recovered above the upper control limit but the associated sample 'Equipment Blank Soil' was not detected for the target analytes and no data was flagged.

The labeled standard C13-1,2,3,4,7,8,9-HeptaCDF was recovered above the upper control limit for the Equipment Blank for sediment ("EB Sediment"). The sample was not detected for 1,2,3,4,7,8,9-HeptaCDF and a potential high bias is not suspected. Results are not flagged.

PCB Congeners. For sediment sample DUP-6 (collected from location SG07) the labeled standards C13-33'44'5-PentaCB-(126), C13-33'44'-TetraCB-(77), and C13-344'5-TetraCB-(81) were recovered above the upper control limit. Only 33'44'-TetraCB-(77) was detected in the sample and the result is 'J+' flagged as estimated with possible high bias.

The labeled standard C13-22'33'55'66'-OctaCB-(202) was recovered above the upper control limit for the Equipment Blank for sediment ("EB Sediment"). The sample was not detected for 22'33'55'66'-OctaCB-(202) and results were not flagged.

Dieldrin by EPA Method 1699. The dieldrin labeled standard 13C-pp-DDE was below the lower control limit for sample T4RB-23U. Dieldrin did not meet ratio criteria and is tentatively identified in the sample. The quantified amount should be considered estimated.

4.7 Precision

Precision is measured by how close values of duplicate analyses are to each other. These duplicate analyses are prepared from separate aliquots of the same sample and are analyzed at the same (or similar) time. Precision in the field ensures that samples taken are representative of field concentrations; this is demonstrated by field duplicates. Analytical precision is the ability of the laboratory to reproduce results that are similar to each other; this is measured through duplicate analysis of environmental and batch QC samples. Precision is estimated by the relative percent difference (RPD) between the original analysis and the duplicate analysis.

4.7.1 Matrix Spikes

Like the LCS/LCSD, the MS/MSD analyte concentrations are also compared to each other and expressed as an RPD. Analytical batch MS/MSD samples were within RPD control limits.

4.7.2 Field Duplicate

A field duplicate is a second field sample collected from a selected sample location. Field duplicate samples serve as a check on laboratory precision, sampling quality, as well as potential variability of the sample matrix. The field duplicate is analyzed and compared to the original sample to assess precision. This comparison can be expressed by the RPD between the original and duplicate samples.

Field duplicates were collected from riverbank soil locations T4RB-3U, T4RB-9L, T4RB-21L, T4RB-25L, and T4RB-44U-OD1 and sediment location SG07. The RPD for results greater than five times the reporting limit

were evaluated against a control limit of 50 percent, per the SAP. If results were less than five times the reporting limit, the absolute difference between the two results was determined and compared against the reporting limit. If the absolute difference was less than ±2 times the reporting limit, then results are considered acceptable. Below is a table outlining RPD exceedances.

Sample Name	Analyte	RPD	QAQC Evaluation
T4RB-21L	TPH as Oil	95%	Result for T4RB-21L is less than five times the reporting limit. However, the absolute difference between T4RB-21L and the field duplicate is greater than two times the reporting limit for TPH as oil. The results are J-flagged as estimated values.
T4RB-9L	Copper	200%	Results are greater than five times the reporting limit. Results are J-flagged as estimated values.
T4RB-9L	Phenanthrene	61%	Results are less than five times the reporting limit and the absolute difference between the results is less than two times the reporting limit. Results are not flagged.
T4RB-25L	Benzo(g,h,i)perylene Fluorene Indeno(1,2,3-cd)pyrene Pyrene	72% 57% 59% 60%	Results are less than five times the reporting limit and the absolute difference between the results is less than two times the reporting limit. Results are not flagged.
T4RB-9L	2,3,4,6,7,8-Hexa CDF	67%	Results are less than the reporting limit and the absolute difference between the results is less than two times the reporting limit. Results are not flagged.
T4RB-21L	2,3,4,6,7,8-Hexa CDF 1,2,3,7,8,9-Hexa CDF	59% 97%	Results are less than five times the reporting limit and the absolute difference between the results is less than two times the reporting limit. Results are not flagged.
SG07	PCB-123 Octa CDF	52%	Results are less than five times the reporting limit and the absolute difference between the results is less than two times the reporting limit. Results are not flagged.

Field duplicates were also used to calculate an average concentration for those sampling points. If results were all detected for the primary and field duplicate sample, then the average concentration was calculated and used for further data reduction. If the primary sample and the field duplicate were reported not detected, the lowest detection limit was selected and designated a non-detect for use in all further data reduction activities. If the primary sample and field duplicate had split results (i.e., one is reported as detected and on is reported as not detected), then the detected result was selected for reporting and used in all further data reduction activities.

4.7.3 Laboratory Duplicate

A laboratory duplicate is a second analysis of an environmental sample received by the laboratory, which serves as an internal check on laboratory quality as well as potential variability of the sample matrix. The laboratory duplicate is analyzed and compared to the primary sample analysis to assess the precision of the analytical method. This comparison can be expressed by the RPD between the original and duplicate samples.

Analytical Report A0I0826. The RPD between sample T4RB-23U and the laboratory duplicate for PAHs in analytical batch 0100353 exceeded the SAP control limit of 35% for benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene. The source results were greater than the laboratory duplicate and are J-flagged as estimated values due to the precision control failure. The results for benzo(k)fluoranthene and phenanthrene also exceeded the control limit but the concentrations were less than 5 times the reporting limit and the absolute difference between the two results was less than ±2 times the reporting limit. These results are considered acceptable for use for sample T4RB-23U and were not flagged.

The RPD between sample T4RB-24L and the laboratory duplicate for total metals in analytical batch 0100258 exceeded the laboratory control limit of 20% for arsenic and mercury. The mercury result was less than 5 times the reporting limit and is not controlled. Additionally, the arsenic RPD was less than the 35% control value from the SAP. The arsenic and mercury results are considered acceptable for use and results were not flagged.

Analytical Report A0J0123. The RPD between sample T4RB-2L and the laboratory duplicate for Aroclor 1260 in analytical batch 0100443 exceeded the laboratory and SAP control limits. The Aroclor 1260 result was less than 5 times the reporting limit and the absolute difference between the two results was less than ±2 times the reporting limit. Therefore, the result is not controlled and was not flagged.

The RPD between sample T4RB-23U and the laboratory duplicate for PAHs in analytical batch 0100353 exceeded the SAP control limit of 35%. Results are flagged as described for Analytical Report A0I0826.

Analytical Report A0J0199. The RPD TPH as diesel for analytical batch 0100429 exceeded the control limit. The QC source sample matrix was not included in report A0J0199 and is not indicative of potential matrix interferences for these samples. Results are accepted based on the secondary laboratory duplicate performed with the analytical batch.

The RD between sample T4RB-18U and the laboratory duplicate for Aroclor 1260 analytical batch 0100594 exceeded the laboratory and SAP control limits. The result is for Aroclor 1260 is estimated and J-flagged.

The RPD between sample T4RB-23U and the laboratory duplicate for PAHs in analytical batch 0100353 exceeded the SAP control limit of 35%. Results are flagged as described for Analytical Report A0I0826.

The RPD between sample T4RB-19L and the laboratory duplicate for anthracene and dibenz(a,h)anthracene. However, the results were less than the reporting limit and are not controlled.

Analytical Report A0J0312. The RPD for TPH as diesel for analytical batch 0100476 and 0100515 exceeded the control limit. The QC source sample matrix was not included in report A0J0312 and is not indicative of potential matrix interferences for these samples.

The RPD for 4,4'-DDT exceeded the control limit for analytical batch 0100735. The QC source sample matrix was not included in analytical report A0J0312 and is not indicative of potential matrix interferences for these samples.

The RPD for lead exceeded the control limit for analytical batch 0100628. The QC source sample matrix was not included in analytical report A0J0312 and is not indicative of potential matrix interferences for these samples.

Analytical Report A0J0503. The RPD for TPH as diesel for analytical batch 0100667 exceeded the control limit. The QC source sample matrix was T4RB-49U but the result was less than five times the reporting limit and is not controlled. Results are accepted based on a second laboratory duplicate provided in the analytical batch.

The RPD between sample T4RB-43U and the laboratory duplicate for PAHs in analytical batch 0100765 exceeded the SAP control limit of 35. The source results were greater than the laboratory duplicate and are J-flagged as estimated values due to the precision control failure.

Analytical Report A0J0545. The RPD for TPH as diesel for analytical batch 0100726 exceeded the control limit. The QC source sample matrix was T4RB-48L but the result was less than five times the reporting limit and is not controlled. Results are accepted based on a second laboratory duplicate provided in the analytical batch.

The RPD for 4,4'-DDT and 2,4'-DDT exceeded the control limit for analytical batch 0100905. The QC source sample matrix was not included in the laboratory report A0J0545 and is not indicative of potential matrix interferences for samples within this report. Results are accepted and not flagged.

PAH RPD exceedances for analytical batch 0100765 are discussed under analytical report A0J0503.

The laboratory duplicate for metals exceeded the RPD control limit for cadmium, copper, lead, mercury, and zinc. The QC source sample matrix was not included in the laboratory report A0J0545 and is not indicative of potential matrix interferences.

4.8 Completeness

A total of 91 samples were anticipated to be collected as part of the SAP. During riverbank soil sampling activities, 81 samples were collected. Please see Section 2.5 Deviations from Work Plan of the Riverbank Characterization Report for more information on these deviations. Analytical results were determined to be valid for samples that were collected since sample collection methodology and laboratory data quality were adequate and met Data Quality Objectives as provided in the SAP. No data points were rejected, and completeness is 100%.

4.9 Analyte Identification and Quantitation

Analytes are identified using multiple methods as specified by analytical methods.

Total petroleum hydrocarbons (TPH) were reported as diesel and oil range organics. Apex Laboratories analyzed samples TPH by Northwest Method NWTPH-Dx, which requires all organic compounds within certain carbon ranges to be totaled and reported. However, this method does not identify if diesel or oil are actually present, only if organic compounds are present within the diesel and oil range. To provide additional insight into what TPH compound may be present, Apex Laboratories included flags to document interpretation of sample chromatograms.

Samples where chromatograms did not match fuel patterns is provided in the table below. These results are J-flagged in the data table with exceptions noted below.

Sample Name	Laboratory Observation
T4RB-27U	A fuel pattern was not observed. The reported concentrations for diesel and oil represent carbon ranges C12 to C24 and >C24 to C40, respectively.
T4RB-28U	The chromatogram for the sample did not match the fuel pattern for oil.
T4RB-1U-OS	The diesel result indicated weathering and overlap from the oil range. The oil result indicated overlap from the diesel range. Results are estimated.
T4RB-5L	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
T4RB-8U	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
T4RB-9U	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.

T4RB-19U	The diesel result indicated potential weathering and overlap from the oil range. The oil result also had overlap from the diesel range. Results are estimated.
T4RB-16U	A fuel pattern was not observed. The reported concentrations for diesel and oil represent carbon ranges C12 to C24 and >C24 to C40, respectively.
T4RB-17U	The chromatogram for the sample did not match the fuel pattern for oil.
T4RB-K1	The chromatogram for the sample did not match the fuel pattern for oil.
T4RB-K2	The chromatogram for the sample did not match the fuel pattern for oil.
T4RB-BEBRA	The chromatogram for the sample did not match the fuel pattern for oil.
T4RB-OJ	The chromatogram for the sample did not match the fuel pattern for diesel or oil. There was also potential overlap from oil in the diesel range and diesel in the oil range.
T4RB-46U	A fuel pattern was not observed. The reported concentrations for diesel and oil represent carbon ranges C12 to C24 and >C24 to C40, respectively.
T4RB-43L	The diesel result did not resemble the fuel standard used for quantitation and indicates that the diesel present may be weathered, mineral oil, or a contribution from a related compound. There was also overlap between the diesel and oil present.
T4RB-43U	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
T4RB-44U-OD1	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
DUP-5	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
T4RB-49U	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
T4RB-51L-OD4	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.
T4RB-51U	Individual hydrocarbon peaks were present in the oil range, biasing the oil result high. The result is J+ flagged as an estimated value that may be biased high.

PCB Aroclors are determined from chromatogram pattern recognition. When interfering compounds are present (including multiple PCB Aroclors, individual PCB congeners, chlorinated pesticides, and/or PAHs) or there has been weathering to the sample, accurate identification and quantitation is difficult. Samples that exhibited these characteristics, as observed by Apex Laboratories, are included in the table below and are J-flagged in the data table as estimated values.

Sample Name	Laboratory Observation
T4RB-1U-OS	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as Aroclors.

T4RB-1L	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as Aroclors.
T4RB-5L	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as Aroclors.
T4RB-5U	Aroclor 1260 was reported but the PCB pattern does not match the standard used for calibration due to weathering and/or the presence of an unknown mixture of PCB congeners. The result is JN-flagged, as estimated and tentatively identified.
T4RB-18U	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-19U	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-19L	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-20U	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-21U	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-22U	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-22L	Aroclor 1260 was reported but the PCB pattern does not match the standard used for calibration due to weathering and/or the presence of an unknown mixture of PCB congeners. The result is JN-flagged, as estimated and tentatively identified.
T4RB-16U	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-16L-O52C	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-17L-ON	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.

T4RB-17U	Aroclor 1242, Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-BEBRA	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.
T4RB-OJ	Aroclor 1254 and Aroclor 1260 were reported; however, these results are estimated due to the presence of multiple Aroclors and/or PCB congeners not defined as congeners.

For the analysis of PAHs, coelution of analytes and subsequent peak separation was insufficient for the following samples. For riverbank soil samples T4RB-23U, T4RB-25U, T4RB-26U, T4RB-26L, T4RB-19L, and T4RB-20L, T4RB-20U, T4RB-21U, T4RB-22U, DUP-4 (T4RB-21L), T4RB-16U, T4RB-17L-ON, T4RB-17U, T4RB-K1, T4RB-K2, T4RB-BEBRA, T4RB-OJ, T4RB-46U, T4RB-44L, T4RB-43U, T4RB-44U-OD1, DUP-5 (T4RB-44U-OD1), T4RB-45U-OD2, T4RB-45U-OD3, T4RB-49U, T4RB-48U, T4RB-50L, and T4RB-51L-OD4 and sediment samples SG06, SG07, and Dup-6 (SG07) the isomer peak separation for benzo(k)fluoranthene could not be resolved and accurate quantitation was not obtained. The results are J-flagged as estimated values.

For analysis of organochlorine pesticides by EPA 8081B, the result is confirmed by a secondary column. Analyte concentrations must be within 40% of each other for the analyte to be confirmed as detected. The following pesticides were tentatively identified since concentrations failed to meet the 40% criteria. These results are JN-flagged as estimated values.

Sample Name	Laboratory Observation
T4RB-5U	The result for 4,4'-DDT did not meet method criteria for second column confirmation. The analyte is tentatively identified, and the reported concentration is estimated.
T4RB-19L	The result for 4,4'-DDT did not meet method criteria for second column confirmation. The analyte is tentatively identified, and the reported concentration is estimated.
T4RB-K1	The result for 4,4'-DDT did not meet method criteria for second column confirmation. The analyte is tentatively identified, and the reported concentration is estimated.

4.9.1 Estimated Maximum Possible Concentration

Estimated maximum possible concentrations (EMPC) are determined when an analyte fails to meet method criteria for ion abundancy ratios. This failure may be due to matrix interference, coelution of analytes, or identification of an analyte at a similar retention time and ions to the target analyte. Since the target analyte might be present, EMPCs are reported as detections for this Report and are JN-flagged as estimated values.

4.10 Calculation of Total Results

Concentrations that require summation for a total result include total carcinogenic PAHs (benzo(a)pyrene equivalence (BaP Eq), total PCBs, 2,3,7,8-TCDD toxic equivalence (TEQ), and total DDX, DDD, DDE, DDT, and chlordane.

For 2,3,7,8-TCDD TEQ, toxicity equivalent factors (TEFs) for mammals were used to normalize 2,3,7,8-substituted congeners. The 2,3,7,8-TCDD TEQ is calculated by summing those toxicity-weighted results. If one or more of the congeners was not detected, the detection limit for each not detected congener was multiplied by the TEF, and one-half the highest weighted result was used to represent the contribution from not detected values for the sample. If all congeners were not detected, then the highest TEF-weighted detection limit was used.

The calculation of BaP Eq included normalizing the carcinogenic PAHs (cPAHs) by multiplying by the BaP TEF. The detected results normalized by the BaP TEF were then summed. If one or more cPAHs were not detected, the detection limit for each not detected cPAH was multiplied by the TEF, and one-half the highest weighted result was used to represent the contribution from not detected values in the sample. If all cPAHs were not detected, then the highest TEF-weighted detection limit was used and U-flagged as not detected.

Total PCBs was calculated by summing detected congeners and one-half the highest detection limit for the not detected congeners. If all PCB congeners were not detected, then the highest detection limit was used as the not detected value.

For totaling pesticides (DDx, DDT, DDE, DDD, and chlordane), the sum of the detections and one-half the highest not detected value were used. If all components were not detected, then the highest detection limit was used for the not detected value.

5.0 Conclusion

In conclusion, the QA objectives have been met and the data are of sufficient quality for use in this project.

Apex Laboratories, LLC

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Friday, November 6, 2020

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0I0826 - POP --- T4 Riverbank - 2372-08 Task 3

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 A0I0826, which was received by the laboratory on 9/30/2020 at 10:41:00AM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	0.6 degC	Cooler #2	2.2 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

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

Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T4RB-23U	A0I0826-01	Soil	09/28/20 11:50	09/30/20 10:41
T4RB-23L	A0I0826-02	Soil	09/28/20 12:15	09/30/20 10:41
T4RB-24U	A0I0826-03	Soil	09/28/20 12:35	09/30/20 10:41
T4RB-24L	A0I0826-04	Soil	09/28/20 12:50	09/30/20 10:41
T4RB-25U	A0I0826-05	Soil	09/28/20 13:30	09/30/20 10:41
T4RB-25L	A0I0826-06	Soil	09/28/20 13:40	09/30/20 10:41
T4RB-26U	A0I0826-07	Soil	09/28/20 14:40	09/30/20 10:41
T4RB-26L	A0I0826-08	Soil	09/28/20 14:30	09/30/20 10:41
T4RB-27U	A0I0826-09	Soil	09/28/20 15:35	09/30/20 10:41
T4RB-27L	A0I0826-10	Soil	09/28/20 15:20	09/30/20 10:41
DUP-1	A0I0826-11	Soil	09/28/20 13:40	09/30/20 10:41
T4RB-28U	A0I0826-12	Soil	09/29/20 10:55	09/30/20 10:41
T4RB-28L	A0I0826-13	Soil	09/29/20 10:25	09/30/20 10:41
T4RB-29U	A0I0826-14	Soil	09/29/20 11:30	09/30/20 10:41
T4RB-29L	A0I0826-15	Soil	09/29/20 11:50	09/30/20 10:41
T4RB-1U-OS	A0I0826-16	Soil	09/29/20 13:00	09/30/20 10:41
T4RB-1L	A0I0826-18	Soil	09/29/20 13:45	09/30/20 10:41

Apex Laboratories



Darrell Auvil, Project Manager

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

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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
T4RB-23U (A0I0826-01)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	10.6	25.0	mg/kg dry	1	10/07/20 12:02	NWTPH-Dx	
Oil	**55.4**	21.3	50.0	mg/kg dry	1	10/07/20 12:02	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*10/07/20 12:02*	*NWTPH-Dx*	
T4RB-23L (A0I0826-02)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	10.2	25.0	mg/kg dry	1	10/07/20 16:18	NWTPH-Dx	
Oil	**23.3**	20.4	50.0	mg/kg dry	1	10/07/20 16:18	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 95 %*		*Limits: 50-150 %*	*1*	*10/07/20 16:18*	*NWTPH-Dx*	
T4RB-24U (A0I0826-03)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	10.1	25.0	mg/kg dry	1	10/07/20 16:39	NWTPH-Dx	
Oil	ND	20.1	50.0	mg/kg dry	1	10/07/20 16:39	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*10/07/20 16:39*	*NWTPH-Dx*	
T4RB-24L (A0I0826-04)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	11.7	25.0	mg/kg dry	1	10/07/20 17:00	NWTPH-Dx	
Oil	ND	23.5	50.0	mg/kg dry	1	10/07/20 17:00	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*10/07/20 17:00*	*NWTPH-Dx*	
T4RB-25U (A0I0826-05)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	9.77	25.0	mg/kg dry	1	10/07/20 17:20	NWTPH-Dx	
Oil	ND	19.5	50.0	mg/kg dry	1	10/07/20 17:20	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*		*Limits: 50-150 %*	*1*	*10/07/20 17:20*	*NWTPH-Dx*	
T4RB-25L (A0I0826-06)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	11.5	25.0	mg/kg dry	1	10/07/20 17:41	NWTPH-Dx	
Oil	ND	22.9	50.0	mg/kg dry	1	10/07/20 17:41	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*		*Limits: 50-150 %*	*1*	*10/07/20 17:41*	*NWTPH-Dx*	
T4RB-26U (A0I0826-07)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	10.1	25.0	mg/kg dry	1	10/07/20 18:02	NWTPH-Dx	
Oil	ND	20.2	50.0	mg/kg dry	1	10/07/20 18:02	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*		*Limits: 50-150 %*	*1*	*10/07/20 18:02*	*NWTPH-Dx*	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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
T4RB-26L (A0I0826-08)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	11.0	25.0	mg/kg dry	1	10/07/20 18:23	NWTPH-Dx	
Oil	ND	22.1	50.0	mg/kg dry	1	10/07/20 18:23	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*10/07/20 18:23*	*NWTPH-Dx*	
T4RB-27U (A0I0826-09)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	**49.2**	13.9	27.7	mg/kg dry	1	10/08/20 09:08	NWTPH-Dx	**F-17**
Oil	**226**	27.7	55.4	mg/kg dry	1	10/08/20 09:08	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)		*Recovery: 91 %*		*Limits: 50-150 %*	*1*	*10/08/20 09:08*	*NWTPH-Dx*	
T4RB-27L (A0I0826-10)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	11.9	25.0	mg/kg dry	1	10/08/20 09:53	NWTPH-Dx	
Oil	**195**	23.9	50.0	mg/kg dry	1	10/08/20 09:53	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 94 %*		*Limits: 50-150 %*	*1*	*10/08/20 09:53*	*NWTPH-Dx*	
DUP-1 (A0I0826-11)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	12.4	25.0	mg/kg dry	1	10/07/20 18:44	NWTPH-Dx	
Oil	ND	24.8	50.0	mg/kg dry	1	10/07/20 18:44	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*		*Limits: 50-150 %*	*1*	*10/07/20 18:44*	*NWTPH-Dx*	
T4RB-28U (A0I0826-12)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	12.2	25.0	mg/kg dry	1	10/08/20 10:39	NWTPH-Dx	
Oil	**385**	24.4	50.0	mg/kg dry	1	10/08/20 10:39	NWTPH-Dx	**F-13**
Surrogate: o-Terphenyl (Surr)		*Recovery: 89 %*		*Limits: 50-150 %*	*1*	*10/08/20 10:39*	*NWTPH-Dx*	
T4RB-28L (A0I0826-13)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	10.7	25.0	mg/kg dry	1	10/08/20 11:24	NWTPH-Dx	
Oil	**135**	21.3	50.0	mg/kg dry	1	10/08/20 11:24	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 97 %*		*Limits: 50-150 %*	*1*	*10/08/20 11:24*	*NWTPH-Dx*	
T4RB-29U (A0I0826-14RE1)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	22.0	43.9	mg/kg dry	2	10/08/20 12:04	NWTPH-Dx	
Oil	**242**	43.9	87.8	mg/kg dry	2	10/08/20 12:04	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 97 %*		*Limits: 50-150 %*	*2*	*10/08/20 12:04*	*NWTPH-Dx*	*S-05*

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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
T4RB-29L (A0I0826-15)				**Matrix: Soil**		**Batch: 0100178**		
Diesel	ND	11.1	25.0	mg/kg dry	1	10/07/20 09:45	NWTPH-Dx	
Oil	**25.4**	22.3	50.0	mg/kg dry	1	10/07/20 09:45	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*		*Limits: 50-150 %*	*1*	*10/07/20 09:45*	*NWTPH-Dx*	
T4RB-1U-OS (A0I0826-16)				**Matrix: Soil**		**Batch: 0100187**		
Diesel	**169**	57.6	115	mg/kg dry	5	10/07/20 15:15	NWTPH-Dx	**F-11, F-15**
Oil	**412**	115	230	mg/kg dry	5	10/07/20 15:15	NWTPH-Dx	**F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 106 %*		*Limits: 50-150 %*	*5*	*10/07/20 15:15*	*NWTPH-Dx*	*S-05*
T4RB-1L (A0I0826-18)				**Matrix: Soil**		**Batch: 0100187**		
Diesel	ND	12.2	25.0	mg/kg dry	1	10/08/20 08:34	NWTPH-Dx	
Oil	**135**	24.5	50.0	mg/kg dry	1	10/08/20 08:34	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 110 %*		*Limits: 50-150 %*	*1*	*10/08/20 08:34*	*NWTPH-Dx*	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23L (A0I0826-02)				**Matrix: Soil**		**Batch: 0100311**		
Chlorobenzene	ND	16.4	32.8	ug/kg dry	50	10/09/20 20:58	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/09/20 20:58*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*10/09/20 20:58*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/09/20 20:58*	*5035A/8260D*	
T4RB-25U (A0I0826-05)				**Matrix: Soil**		**Batch: 0100311**		
Chlorobenzene	ND	15.7	31.4	ug/kg dry	50	10/09/20 18:16	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/09/20 18:16*	*5035A/8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*10/09/20 18:16*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/09/20 18:16*	*5035A/8260D*	
T4RB-28U (A0I0826-12)				**Matrix: Soil**		**Batch: 0100311**		
Chlorobenzene	ND	28.0	56.0	ug/kg dry	50	10/09/20 21:53	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*10/09/20 21:53*	*5035A/8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*10/09/20 21:53*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*	*1*	*10/09/20 21:53*	*5035A/8260D*	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23U (A0I0826-01)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1221	ND	4.24	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1232	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1242	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1248	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1254	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1260	**3.40**	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	**Ja**
Aroclor 1262	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1268	ND	2.12	4.24	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 60-125 %*	*1*	*10/12/20 17:28*	*EPA 8082A*	
T4RB-23L (A0I0826-02)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1221	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1232	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1242	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1248	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1254	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1260	**2.27**	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	**Ja**
Aroclor 1262	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Aroclor 1268	ND	2.08	4.16	ug/kg dry	1	10/12/20 18:39	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 86 %*		*Limits: 60-125 %*	*1*	*10/12/20 18:39*	*EPA 8082A*	
T4RB-24U (A0I0826-03)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1221	ND	4.36	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1232	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1242	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1248	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1254	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1260	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1262	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1268	ND	2.18	4.36	ug/kg dry	1	10/12/20 19:14	EPA 8082A	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-24U (A0I0826-03)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 83 %*	*Limits: 60-125 %*		*1*	*10/12/20 19:14*	*EPA 8082A*	
T4RB-24L (A0I0826-04)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1221	ND	4.58	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1232	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1242	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1248	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1254	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1260	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1262	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1268	ND	2.29	4.58	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 92 %*	*Limits: 60-125 %*		*1*	*10/12/20 19:49*	*EPA 8082A*	
T4RB-25U (A0I0826-05)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1221	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1232	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1242	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1248	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1254	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1260	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1262	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Aroclor 1268	ND	2.02	4.04	ug/kg dry	1	10/12/20 20:25	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 87 %*	*Limits: 60-125 %*		*1*	*10/12/20 20:25*	*EPA 8082A*	
T4RB-25L (A0I0826-06)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1221	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1232	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1242	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1248	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1254	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1260	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-25L (A0I0826-06)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1262	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Aroclor 1268	ND	2.35	4.70	ug/kg dry	1	10/12/20 21:00	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 88 %*		*Limits: 60-125 %*	*1*	*10/12/20 21:00*	*EPA 8082A*	
T4RB-26U (A0I0826-07)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1221	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1232	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1242	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1248	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1254	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1260	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1262	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Aroclor 1268	ND	2.13	4.26	ug/kg dry	1	10/12/20 16:53	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 78 %*		*Limits: 60-125 %*	*1*	*10/12/20 16:53*	*EPA 8082A*	
T4RB-26L (A0I0826-08)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1221	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1232	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1242	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1248	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1254	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1260	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1262	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Aroclor 1268	ND	2.19	4.38	ug/kg dry	1	10/12/20 17:28	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 66 %*		*Limits: 60-125 %*	*1*	*10/12/20 17:28*	*EPA 8082A*	
DUP-1 (A0I0826-11)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1221	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1232	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1242	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-1 (A0I0826-11)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1248	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1254	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1260	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1262	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Aroclor 1268	ND	2.45	4.90	ug/kg dry	1	10/12/20 18:04	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 69 %*		*Limits: 60-125 %*	*1*	*10/12/20 18:04*	*EPA 8082A*	
T4RB-28U (A0I0826-12RE1)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.57	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1221	ND	2.57	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1232	ND	5.14	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1242	ND	2.57	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1248	ND	5.14	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1254	ND	5.52	5.52	ug/kg dry	1	10/14/20 09:14	EPA 8082A	R-02
Aroclor 1260	ND	5.14	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1262	ND	2.57	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Aroclor 1268	ND	2.57	5.14	ug/kg dry	1	10/14/20 09:14	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 77 %*		*Limits: 60-125 %*	*1*	*10/14/20 09:14*	*EPA 8082A*	
T4RB-1U-OS (A0I0826-16)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1221	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1232	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1242	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1248	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1254	**203**	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	**P-12**
Aroclor 1260	**175**	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	**P-12**
Aroclor 1262	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Aroclor 1268	ND	2.27	4.55	ug/kg dry	1	10/12/20 19:14	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 74 %*		*Limits: 60-125 %*	*1*	*10/12/20 19:14*	*EPA 8082A*	
T4RB-1L (A0I0826-18)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1016	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-1L (A0I0826-18)				**Matrix: Soil**		**Batch: 0100360**		**C-07**
Aroclor 1221	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1232	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1242	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1248	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1254	**62.3**	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	**P-12**
Aroclor 1260	**15.7**	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	**P-12**
Aroclor 1262	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Aroclor 1268	ND	2.56	5.11	ug/kg dry	1	10/12/20 19:49	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 60-125 %*	*1*	*10/12/20 19:49*	*EPA 8082A*	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23U (A0I0826-01RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
gamma-BHC (Lindane)	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
cis-Chlordane	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
trans-Chlordane	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
4,4'-DDD	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
4,4'-DDE	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
4,4'-DDT	**1.41**	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	**Ja**
Dieldrin	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
Endosulfan I	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
Endosulfan II	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
Endosulfan sulfate	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
Chlordane (Technical)	ND	31.9	63.8	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
cis-Nonachlor	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
2,4'-DDD	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
2,4'-DDE	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
2,4'-DDT	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
Oxychlordane	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
trans-Nonachlor	ND	1.06	2.13	ug/kg dry	1	10/16/20 12:19	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*59 %*	*Limits: 42-129 %*	*1*	*10/16/20 12:19*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*124 %*	*55-130 %*	*1*	*10/16/20 12:19*	*EPA 8081B*	
T4RB-23L (A0I0826-02RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
gamma-BHC (Lindane)	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
cis-Chlordane	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
trans-Chlordane	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
4,4'-DDD	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
4,4'-DDE	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
4,4'-DDT	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
Dieldrin	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
Endosulfan I	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
Endosulfan II	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
Endosulfan sulfate	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23L (A0I0826-02RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Chlordane (Technical)	ND	31.2	62.5	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
cis-Nonachlor	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
2,4'-DDD	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
2,4'-DDE	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
2,4'-DDT	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
Oxychlordane	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
trans-Nonachlor	ND	1.04	2.08	ug/kg dry	1	10/16/20 12:37	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*70 %*	*Limits: 42-129 %*	*1*	*10/16/20 12:37*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*123 %*	*55-130 %*	*1*	*10/16/20 12:37*	*EPA 8081B*	
T4RB-24U (A0I0826-03RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
gamma-BHC (Lindane)	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
cis-Chlordane	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
trans-Chlordane	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
4,4'-DDD	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
4,4'-DDE	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
4,4'-DDT	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Dieldrin	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Endosulfan I	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Endosulfan II	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Endosulfan sulfate	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Chlordane (Technical)	ND	32.4	64.8	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
cis-Nonachlor	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
2,4'-DDD	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
2,4'-DDE	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
2,4'-DDT	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Oxychlordane	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
trans-Nonachlor	ND	1.08	2.16	ug/kg dry	1	10/16/20 12:54	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*82 %*	*Limits: 42-129 %*	*1*	*10/16/20 12:54*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*123 %*	*55-130 %*	*1*	*10/16/20 12:54*	*EPA 8081B*	
T4RB-24L (A0I0826-04RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-24L (A0I0826-04RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
gamma-BHC (Lindane)	ND	2.37	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
cis-Chlordane	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
trans-Chlordane	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
4,4'-DDD	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
4,4'-DDE	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
4,4'-DDT	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Dieldrin	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Endosulfan I	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Endosulfan II	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Endosulfan sulfate	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Chlordane (Technical)	ND	35.5	71.1	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
cis-Nonachlor	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
2,4'-DDD	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
2,4'-DDE	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
2,4'-DDT	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Oxychlordane	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
trans-Nonachlor	ND	1.18	2.37	ug/kg dry	1	10/16/20 13:11	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*32 %*	*Limits: 42-129 %*	*1*	*10/16/20 13:11*	*EPA 8081B*	*S-06*
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*	*1*	*10/16/20 13:11*	*EPA 8081B*	
T4RB-25U (A0I0826-05RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
gamma-BHC (Lindane)	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
cis-Chlordane	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
trans-Chlordane	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
4,4'-DDD	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
4,4'-DDE	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
4,4'-DDT	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Dieldrin	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Endosulfan I	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Endosulfan II	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Endosulfan sulfate	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Chlordane (Technical)	ND	30.1	60.1	ug/kg dry	1	10/16/20 13:28	EPA 8081B	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-25U (A0I0826-05RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
cis-Nonachlor	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
2,4'-DDD	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
2,4'-DDE	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
2,4'-DDT	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Oxychlordane	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
trans-Nonachlor	ND	1.00	2.00	ug/kg dry	1	10/16/20 13:28	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*51 %*	*Limits: 42-129 %*	*1*	*10/16/20 13:28*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*119 %*	*55-130 %*	*1*	*10/16/20 13:28*	*EPA 8081B*	
T4RB-25L (A0I0826-06RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
gamma-BHC (Lindane)	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
cis-Chlordane	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
trans-Chlordane	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
4,4'-DDD	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
4,4'-DDE	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
4,4'-DDT	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Dieldrin	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Endosulfan I	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Endosulfan II	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Endosulfan sulfate	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Chlordane (Technical)	ND	36.0	71.9	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
cis-Nonachlor	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
2,4'-DDD	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
2,4'-DDE	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
2,4'-DDT	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Oxychlordane	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
trans-Nonachlor	ND	1.20	2.40	ug/kg dry	1	10/16/20 13:46	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*46 %*	*Limits: 42-129 %*	*1*	*10/16/20 13:46*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*100 %*	*55-130 %*	*1*	*10/16/20 13:46*	*EPA 8081B*	
T4RB-26U (A0I0826-07RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
gamma-BHC (Lindane)	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-26U (A0I0826-07RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
cis-Chlordane	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
trans-Chlordane	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
4,4'-DDD	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
4,4'-DDE	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
4,4'-DDT	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
Dieldrin	**1.65**	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	**Ja**
Endosulfan I	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
Endosulfan II	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
Endosulfan sulfate	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
Chlordane (Technical)	ND	31.7	63.5	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
cis-Nonachlor	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
2,4'-DDD	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
2,4'-DDE	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
2,4'-DDT	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
Oxychlordane	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
trans-Nonachlor	ND	1.06	2.12	ug/kg dry	1	10/16/20 14:03	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 59 %*	*Limits: 42-129 %*	*1*	*10/16/20 14:03*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*116 %*	*55-130 %*	*1*	*10/16/20 14:03*	*EPA 8081B*	
T4RB-26L (A0I0826-08RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
Aldrin	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
gamma-BHC (Lindane)	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
cis-Chlordane	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
trans-Chlordane	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
4,4'-DDD	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
4,4'-DDE	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
4,4'-DDT	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Dieldrin	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Endosulfan I	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Endosulfan II	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Endosulfan sulfate	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Chlordane (Technical)	ND	33.4	66.7	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
cis-Nonachlor	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-26L (A0I0826-08RE1)				**Matrix: Soil**		**Batch: 0100347**		**C-05**
2,4'-DDD	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
2,4'-DDE	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
2,4'-DDT	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Oxychlordane	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
trans-Nonachlor	ND	1.11	2.22	ug/kg dry	1	10/16/20 14:20	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*52 %*	*Limits: 42-129 %*	*1*	*10/16/20 14:20*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*112 %*	*55-130 %*	*1*	*10/16/20 14:20*	*EPA 8081B*	
DUP-1 (A0I0826-11RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
gamma-BHC (Lindane)	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
cis-Chlordane	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
trans-Chlordane	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
4,4'-DDD	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
4,4'-DDE	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
4,4'-DDT	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Dieldrin	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Endosulfan I	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Endosulfan II	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Endosulfan sulfate	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Chlordane (Technical)	ND	34.2	68.5	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
cis-Nonachlor	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
2,4'-DDD	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
2,4'-DDE	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
2,4'-DDT	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Oxychlordane	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
trans-Nonachlor	ND	1.14	2.28	ug/kg dry	1	10/17/20 22:55	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*36 %*	*Limits: 42-129 %*	*1*	*10/17/20 22:55*	*EPA 8081B*	*A-01, S-03*
Decachlorobiphenyl (Surr)			*88 %*	*55-130 %*	*1*	*10/17/20 22:55*	*EPA 8081B*	
T4RB-28U (A0I0826-12RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	**33.1**	1.23	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
gamma-BHC (Lindane)	ND	2.45	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
cis-Chlordane	ND	2.45	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-28U (A0I0826-12RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
trans-Chlordane	ND	2.45	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
4,4'-DDD	**21.8**	1.23	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
4,4'-DDE	**207**	1.23	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
Endosulfan I	ND	2.45	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
Endosulfan II	ND	4.29	4.29	ug/kg dry	1	10/17/20 23:30	EPA 8081B	R-02
Endosulfan sulfate	ND	10.7	10.7	ug/kg dry	1	10/17/20 23:30	EPA 8081B	R-02
Chlordane (Technical)	ND	36.8	73.5	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
cis-Nonachlor	ND	19.1	19.1	ug/kg dry	1	10/17/20 23:30	EPA 8081B	R-02
2,4'-DDD	ND	13.6	13.6	ug/kg dry	1	10/17/20 23:30	EPA 8081B	R-02
2,4'-DDE	ND	6.74	6.74	ug/kg dry	1	10/17/20 23:30	EPA 8081B	R-02
2,4'-DDT	**90.2**	1.23	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
Oxychlordane	ND	2.57	2.57	ug/kg dry	1	10/17/20 23:30	EPA 8081B	R-02
trans-Nonachlor	ND	2.45	2.45	ug/kg dry	1	10/17/20 23:30	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*44 %*	*Limits: 42-129 %*	*1*	*10/17/20 23:30*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*110 %*	*55-130 %*	*1*	*10/17/20 23:30*	*EPA 8081B*	
T4RB-28U (A0I0826-12RE2)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
4,4'-DDT	**306**	12.3	24.5	ug/kg dry	10	10/19/20 17:05	EPA 8081B	
Dieldrin	**967**	12.3	24.5	ug/kg dry	10	10/19/20 17:05	EPA 8081B	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23U (A0I0826-01RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Acenaphthylene	ND	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Anthracene	ND	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Benz(a)anthracene	**29.7**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Benzo(a)pyrene	**49.2**	8.68	17.4	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Benzo(b)fluoranthene	**60.9**	8.68	17.4	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Benzo(k)fluoranthene	**23.1**	8.68	17.4	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**38.2**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Chrysene	**35.1**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Dibenz(a,h)anthracene	**7.50**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Ja**
Fluoranthene	**46.1**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Fluorene	ND	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**32.4**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
2-Methylnaphthalene	ND	11.6	23.1	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Naphthalene	ND	11.6	23.1	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Phenanthrene	**19.7**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	
Pyrene	**46.8**	5.77	11.6	ug/kg dry	4	10/12/20 12:58	EPA 8270E	**Q-42**
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*75 %*	*Limits: 37-122 %*	*4*	*10/12/20 12:58*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*78 %*	*44-120 %*	*4*	*10/12/20 12:58*	*EPA 8270E*	
Phenol-d6 (Surr)			*68 %*	*33-122 %*	*4*	*10/12/20 12:58*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*86 %*	*54-127 %*	*4*	*10/12/20 12:58*	*EPA 8270E*	
2-Fluorophenol (Surr)			*70 %*	*35-120 %*	*4*	*10/12/20 12:58*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*76 %*	*39-132 %*	*4*	*10/12/20 12:58*	*EPA 8270E*	
T4RB-23L (A0I0826-02RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Acenaphthylene	ND	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Anthracene	ND	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Benz(a)anthracene	**2.70**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	**Ja**
Benzo(a)pyrene	**4.85**	2.14	4.29	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Benzo(b)fluoranthene	**6.74**	2.14	4.29	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Benzo(k)fluoranthene	**2.91**	2.14	4.29	ug/kg dry	1	10/13/20 13:37	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**4.20**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Chrysene	**3.42**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23L (A0I0826-02RE1)				**Matrix: Soil**		**Batch: 0100353**		
Dibenz(a,h)anthracene	ND	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Fluoranthene	**4.12**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Fluorene	ND	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**3.14**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
2-Methylnaphthalene	ND	2.86	5.71	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Naphthalene	ND	2.86	5.71	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Phenanthrene	**1.81**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	**Ja**
Pyrene	**4.06**	1.43	2.86	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	21.4	42.9	ug/kg dry	1	10/13/20 13:37	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*65 %*	*Limits: 37-122 %*	*1*	*10/13/20 13:37*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*62 %*	*44-120 %*	*1*	*10/13/20 13:37*	*EPA 8270E*	
Phenol-d6 (Surr)			*63 %*	*33-122 %*	*1*	*10/13/20 13:37*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*70 %*	*54-127 %*	*1*	*10/13/20 13:37*	*EPA 8270E*	
2-Fluorophenol (Surr)			*63 %*	*35-120 %*	*1*	*10/13/20 13:37*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*67 %*	*39-132 %*	*1*	*10/13/20 13:37*	*EPA 8270E*	
T4RB-24U (A0I0826-03RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Acenaphthylene	ND	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Anthracene	ND	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Benz(a)anthracene	**2.20**	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Benzo(a)pyrene	**3.69**	2.18	4.35	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Benzo(b)fluoranthene	**4.05**	2.18	4.35	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Benzo(k)fluoranthene	**2.35**	2.18	4.35	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**2.32**	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Chrysene	**1.87**	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Dibenz(a,h)anthracene	ND	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Fluoranthene	**2.46**	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
Fluorene	ND	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**2.01**	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**
2-Methylnaphthalene	ND	2.91	5.80	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Naphthalene	ND	2.91	5.80	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Phenanthrene	ND	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	
Pyrene	**2.60**	1.45	2.91	ug/kg dry	1	10/13/20 17:00	EPA 8270E	**Ja**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-24U (A0I0826-03RE1)				**Matrix: Soil**		**Batch: 0100353**		
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*83 %*	*Limits: 37-122 %*	*1*	*10/13/20 17:00*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*72 %*	*44-120 %*	*1*	*10/13/20 17:00*	*EPA 8270E*	
Phenol-d6 (Surr)			*74 %*	*33-122 %*	*1*	*10/13/20 17:00*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*77 %*	*54-127 %*	*1*	*10/13/20 17:00*	*EPA 8270E*	
2-Fluorophenol (Surr)			*84 %*	*35-120 %*	*1*	*10/13/20 17:00*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*74 %*	*39-132 %*	*1*	*10/13/20 17:00*	*EPA 8270E*	
T4RB-24L (A0I0826-04RE2)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Acenaphthylene	ND	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Anthracene	ND	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Benz(a)anthracene	**8.67**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Benzo(a)pyrene	**15.6**	9.40	18.8	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Benzo(b)fluoranthene	**17.8**	9.40	18.8	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Benzo(k)fluoranthene	**10.0**	9.40	18.8	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**10.6**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Chrysene	**9.11**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Dibenz(a,h)anthracene	ND	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Fluoranthene	**12.1**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Fluorene	ND	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**9.13**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
2-Methylnaphthalene	ND	12.5	25.0	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Naphthalene	ND	12.5	25.0	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Phenanthrene	**7.38**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	**Ja**
Pyrene	**14.0**	6.25	12.5	ug/kg dry	4	10/14/20 15:30	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*56 %*	*Limits: 37-122 %*	*4*	*10/14/20 15:30*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*64 %*	*44-120 %*	*4*	*10/14/20 15:30*	*EPA 8270E*	
Phenol-d6 (Surr)			*52 %*	*33-122 %*	*4*	*10/14/20 15:30*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*85 %*	*54-127 %*	*4*	*10/14/20 15:30*	*EPA 8270E*	
2-Fluorophenol (Surr)			*53 %*	*35-120 %*	*4*	*10/14/20 15:30*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*71 %*	*39-132 %*	*4*	*10/14/20 15:30*	*EPA 8270E*	
T4RB-25U (A0I0826-05RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Acenaphthylene	ND	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-25U (A0I0826-05RE1)				**Matrix: Soil**		**Batch: 0100353**		
Anthracene	ND	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Benz(a)anthracene	**4.94**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Benzo(a)pyrene	**8.49**	2.02	4.03	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Benzo(b)fluoranthene	**9.63**	2.02	4.03	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Benzo(k)fluoranthene	**4.05**	2.02	4.03	ug/kg dry	1	10/13/20 18:12	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**5.28**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Chrysene	**5.29**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Fluoranthene	**7.29**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Fluorene	ND	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**5.07**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
2-Methylnaphthalene	ND	2.69	5.37	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Naphthalene	ND	2.69	5.37	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Phenanthrene	**3.00**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Pyrene	**7.38**	1.34	2.69	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	20.2	40.3	ug/kg dry	1	10/13/20 18:12	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*78 %*	*Limits: 37-122 %*	*1*	*10/13/20 18:12*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*68 %*	*44-120 %*	*1*	*10/13/20 18:12*	*EPA 8270E*	
Phenol-d6 (Surr)			*67 %*	*33-122 %*	*1*	*10/13/20 18:12*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*	*1*	*10/13/20 18:12*	*EPA 8270E*	
2-Fluorophenol (Surr)			*73 %*	*35-120 %*	*1*	*10/13/20 18:12*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*71 %*	*39-132 %*	*1*	*10/13/20 18:12*	*EPA 8270E*	
T4RB-25L (A0I0826-06RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Acenaphthylene	ND	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Anthracene	ND	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Benz(a)anthracene	**3.51**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Benzo(a)pyrene	**5.94**	2.43	4.86	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Benzo(b)fluoranthene	**6.82**	2.43	4.86	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Benzo(k)fluoranthene	**3.21**	2.43	4.86	ug/kg dry	1	10/13/20 18:47	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**3.90**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Chrysene	**3.61**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-25L (A0I0826-06RE1)				**Matrix: Soil**		**Batch: 0100353**		
Fluoranthene	**5.24**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Fluorene	ND	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**3.55**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
2-Methylnaphthalene	ND	3.24	6.47	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Naphthalene	ND	3.24	6.47	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Phenanthrene	**2.67**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	**Ja**
Pyrene	**5.13**	1.61	3.24	ug/kg dry	1	10/13/20 18:47	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*76 %*	*Limits: 37-122 %*	*1*	*10/13/20 18:47*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*65 %*	*44-120 %*	*1*	*10/13/20 18:47*	*EPA 8270E*	
Phenol-d6 (Surr)			*66 %*	*33-122 %*	*1*	*10/13/20 18:47*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*71 %*	*54-127 %*	*1*	*10/13/20 18:47*	*EPA 8270E*	
2-Fluorophenol (Surr)			*74 %*	*35-120 %*	*1*	*10/13/20 18:47*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*1*	*10/13/20 18:47*	*EPA 8270E*	
T4RB-26U (A0I0826-07)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Acenaphthylene	ND	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Anthracene	**1.70**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	**Ja**
Benz(a)anthracene	**16.4**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Benzo(a)pyrene	**27.9**	2.16	4.32	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Benzo(b)fluoranthene	**31.4**	2.16	4.32	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Benzo(k)fluoranthene	**11.9**	2.16	4.32	ug/kg dry	1	10/13/20 19:23	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**18.5**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Chrysene	**19.1**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Dibenz(a,h)anthracene	**3.36**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Fluoranthene	**26.1**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Fluorene	ND	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**17.3**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
2-Methylnaphthalene	ND	2.88	5.75	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Naphthalene	ND	2.88	5.75	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Phenanthrene	**9.58**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Pyrene	**25.9**	1.43	2.88	ug/kg dry	1	10/13/20 19:23	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*73 %*	*Limits: 37-122 %*	*1*	*10/13/20 19:23*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*64 %*	*44-120 %*	*1*	*10/13/20 19:23*	*EPA 8270E*	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-26U (A0I0826-07)				**Matrix: Soil**		**Batch: 0100353**		
Surrogate: Phenol-d6 (Surr)		*Recovery:*	*65 %*	*Limits: 33-122 %*	*1*	*10/13/20 19:23*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*71 %*	*54-127 %*	*1*	*10/13/20 19:23*	*EPA 8270E*	
2-Fluorophenol (Surr)			*74 %*	*35-120 %*	*1*	*10/13/20 19:23*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*1*	*10/13/20 19:23*	*EPA 8270E*	
T4RB-26L (A0I0826-08)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Acenaphthylene	**2.23**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	**Ja**
Anthracene	**10.3**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Benz(a)anthracene	**61.8**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Benzo(a)pyrene	**65.6**	2.23	4.45	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Benzo(b)fluoranthene	**73.1**	2.23	4.45	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Benzo(k)fluoranthene	**26.6**	2.23	4.45	ug/kg dry	1	10/13/20 19:58	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**32.2**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Chrysene	**56.5**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Dibenz(a,h)anthracene	**6.66**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Fluoranthene	**91.8**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Fluorene	**1.65**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	**Ja**
Indeno(1,2,3-cd)pyrene	**31.8**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
2-Methylnaphthalene	ND	2.97	5.93	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Naphthalene	**3.89**	2.97	5.93	ug/kg dry	1	10/13/20 19:58	EPA 8270E	**Ja**
Phenanthrene	**11.9**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Pyrene	**90.0**	1.48	2.97	ug/kg dry	1	10/13/20 19:58	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*65 %*	*Limits: 37-122 %*	*1*	*10/13/20 19:58*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*58 %*	*44-120 %*	*1*	*10/13/20 19:58*	*EPA 8270E*	
Phenol-d6 (Surr)			*58 %*	*33-122 %*	*1*	*10/13/20 19:58*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*73 %*	*54-127 %*	*1*	*10/13/20 19:58*	*EPA 8270E*	
2-Fluorophenol (Surr)			*65 %*	*35-120 %*	*1*	*10/13/20 19:58*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*73 %*	*39-132 %*	*1*	*10/13/20 19:58*	*EPA 8270E*	
DUP-1 (A0I0826-11)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Acenaphthylene	ND	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Anthracene	ND	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Benz(a)anthracene	**4.97**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-1 (A0I0826-11)				**Matrix: Soil**		**Batch: 0100353**		
Benzo(a)pyrene	**9.80**	2.41	4.82	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Benzo(b)fluoranthene	**10.3**	2.41	4.82	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Benzo(k)fluoranthene	**4.66**	2.41	4.82	ug/kg dry	1	10/13/20 20:34	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**8.26**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Chrysene	**5.74**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Fluoranthene	**9.46**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Fluorene	ND	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**6.54**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
2-Methylnaphthalene	ND	3.22	6.42	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Naphthalene	ND	3.22	6.42	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Phenanthrene	**4.15**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Pyrene	**9.57**	1.60	3.22	ug/kg dry	1	10/13/20 20:34	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*79 %*	*Limits: 37-122 %*	*1*	*10/13/20 20:34*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*1*	*10/13/20 20:34*	*EPA 8270E*	
Phenol-d6 (Surr)			*71 %*	*33-122 %*	*1*	*10/13/20 20:34*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*72 %*	*54-127 %*	*1*	*10/13/20 20:34*	*EPA 8270E*	
2-Fluorophenol (Surr)			*79 %*	*35-120 %*	*1*	*10/13/20 20:34*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*79 %*	*39-132 %*	*1*	*10/13/20 20:34*	*EPA 8270E*	
T4RB-28U (A0I0826-12)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Acenaphthylene	ND	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Anthracene	ND	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Benz(a)anthracene	**236**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Benzo(a)pyrene	**387**	99.9	200	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Benzo(b)fluoranthene	**472**	99.9	200	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Benzo(k)fluoranthene	**194**	99.9	200	ug/kg dry	40	10/12/20 17:17	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**226**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Chrysene	**255**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Dibenz(a,h)anthracene	ND	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Fluoranthene	**346**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Fluorene	ND	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**219**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-28U (A0I0826-12)				**Matrix: Soil**		**Batch: 0100353**		
2-Methylnaphthalene	ND	133	266	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Naphthalene	ND	133	266	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Phenanthrene	**143**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Pyrene	**316**	66.5	133	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	999	2000	ug/kg dry	40	10/12/20 17:17	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*60 %*	*Limits: 37-122 %*	*40*	*10/12/20 17:17*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*67 %*	*44-120 %*	*40*	*10/12/20 17:17*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*45 %*	*33-122 %*	*40*	*10/12/20 17:17*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*77 %*	*54-127 %*	*40*	*10/12/20 17:17*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*49 %*	*35-120 %*	*40*	*10/12/20 17:17*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*85 %*	*39-132 %*	*40*	*10/12/20 17:17*	*EPA 8270E*	*S-05*

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ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23U (A0I0826-01)				**Matrix: Soil**				
Batch: 0100258								
Lead	**14.7**	0.114	0.228	mg/kg dry	10	10/09/20 18:44	EPA 6020A	
Mercury	ND	0.0456	0.0912	mg/kg dry	10	10/09/20 18:44	EPA 6020A	
T4RB-23U (A0I0826-01RE1)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**3.15**	0.570	1.14	mg/kg dry	10	10/12/20 16:29	EPA 6020A	
Cadmium	**0.149**	0.114	0.228	mg/kg dry	10	10/12/20 16:29	EPA 6020A	**Ja**
Copper	**16.1**	1.14	2.28	mg/kg dry	10	10/12/20 16:29	EPA 6020A	
Zinc	**57.0**	2.28	4.56	mg/kg dry	10	10/12/20 16:29	EPA 6020A	
T4RB-23L (A0I0826-02)				**Matrix: Soil**				
Batch: 0100258								
Lead	**6.78**	0.118	0.236	mg/kg dry	10	10/09/20 18:48	EPA 6020A	
Mercury	ND	0.0472	0.0944	mg/kg dry	10	10/09/20 18:48	EPA 6020A	
T4RB-23L (A0I0826-02RE1)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**2.99**	0.590	1.18	mg/kg dry	10	10/12/20 16:44	EPA 6020A	
Cadmium	ND	0.118	0.236	mg/kg dry	10	10/12/20 16:44	EPA 6020A	
Copper	**13.1**	1.18	2.36	mg/kg dry	10	10/12/20 16:44	EPA 6020A	
Zinc	**49.0**	2.36	4.72	mg/kg dry	10	10/12/20 16:44	EPA 6020A	
T4RB-24U (A0I0826-03)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**2.97**	0.597	1.19	mg/kg dry	10	10/09/20 18:53	EPA 6020A	
Cadmium	ND	0.119	0.239	mg/kg dry	10	10/09/20 18:53	EPA 6020A	
Copper	**16.5**	1.19	2.39	mg/kg dry	10	10/09/20 18:53	EPA 6020A	
Lead	**4.76**	0.119	0.239	mg/kg dry	10	10/09/20 18:53	EPA 6020A	
Mercury	ND	0.0477	0.0954	mg/kg dry	10	10/09/20 18:53	EPA 6020A	
Zinc	**45.7**	2.39	4.77	mg/kg dry	10	10/09/20 18:53	EPA 6020A	
T4RB-24L (A0I0826-04)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**4.04**	0.594	1.19	mg/kg dry	10	10/09/20 15:28	EPA 6020A	**Q-42**

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-24L (A0I0826-04)				**Matrix: Soil**				
Cadmium	ND	0.119	0.238	mg/kg dry	10	10/09/20 15:28	EPA 6020A	
Copper	**16.5**	1.19	2.38	mg/kg dry	10	10/09/20 15:28	EPA 6020A	
Lead	**6.19**	0.119	0.238	mg/kg dry	10	10/09/20 15:28	EPA 6020A	
Mercury	**0.117**	0.0475	0.0950	mg/kg dry	10	10/09/20 15:28	EPA 6020A	**Q-42**
Zinc	**53.1**	2.38	4.75	mg/kg dry	10	10/09/20 15:28	EPA 6020A	
T4RB-25U (A0I0826-05)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**2.99**	0.538	1.08	mg/kg dry	10	10/09/20 18:58	EPA 6020A	
Cadmium	ND	0.108	0.215	mg/kg dry	10	10/09/20 18:58	EPA 6020A	
Copper	**15.3**	1.08	2.15	mg/kg dry	10	10/09/20 18:58	EPA 6020A	
Lead	**5.19**	0.108	0.215	mg/kg dry	10	10/09/20 18:58	EPA 6020A	
Mercury	**0.0668**	0.0431	0.0861	mg/kg dry	10	10/09/20 18:58	EPA 6020A	**Ja**
Zinc	**43.9**	2.15	4.31	mg/kg dry	10	10/09/20 18:58	EPA 6020A	
T4RB-25L (A0I0826-06)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**7.00**	0.677	1.35	mg/kg dry	10	10/09/20 19:03	EPA 6020A	
Cadmium	**0.137**	0.135	0.271	mg/kg dry	10	10/09/20 19:03	EPA 6020A	**Ja**
Copper	**20.9**	1.35	2.71	mg/kg dry	10	10/09/20 19:03	EPA 6020A	
Lead	**10.8**	0.135	0.271	mg/kg dry	10	10/09/20 19:03	EPA 6020A	
Mercury	ND	0.0541	0.108	mg/kg dry	10	10/09/20 19:03	EPA 6020A	
Zinc	**68.7**	2.71	5.41	mg/kg dry	10	10/09/20 19:03	EPA 6020A	
T4RB-26U (A0I0826-07)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**3.16**	0.602	1.20	mg/kg dry	10	10/09/20 19:08	EPA 6020A	
Cadmium	ND	0.120	0.241	mg/kg dry	10	10/09/20 19:08	EPA 6020A	
Copper	**15.2**	1.20	2.41	mg/kg dry	10	10/09/20 19:08	EPA 6020A	
Lead	**4.48**	0.120	0.241	mg/kg dry	10	10/09/20 19:08	EPA 6020A	
Mercury	ND	0.0481	0.0963	mg/kg dry	10	10/09/20 19:08	EPA 6020A	
Zinc	**42.2**	2.41	4.81	mg/kg dry	10	10/09/20 19:08	EPA 6020A	
T4RB-26L (A0I0826-08)				**Matrix: Soil**				
Batch: 0100258								

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-26L (A0I0826-08)				**Matrix: Soil**				
Arsenic	**3.32**	0.578	1.16	mg/kg dry	10	10/09/20 19:13	EPA 6020A	
Cadmium	ND	0.116	0.231	mg/kg dry	10	10/09/20 19:13	EPA 6020A	
Copper	**14.5**	1.16	2.31	mg/kg dry	10	10/09/20 19:13	EPA 6020A	
Lead	**4.73**	0.116	0.231	mg/kg dry	10	10/09/20 19:13	EPA 6020A	
Mercury	ND	0.0462	0.0924	mg/kg dry	10	10/09/20 19:13	EPA 6020A	
Zinc	**44.8**	2.31	4.62	mg/kg dry	10	10/09/20 19:13	EPA 6020A	
DUP-1 (A0I0826-11)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**6.92**	0.624	1.25	mg/kg dry	10	10/09/20 19:18	EPA 6020A	
Cadmium	**0.167**	0.125	0.250	mg/kg dry	10	10/09/20 19:18	EPA 6020A	**Ja**
Copper	**21.5**	1.25	2.50	mg/kg dry	10	10/09/20 19:18	EPA 6020A	
Lead	**11.9**	0.125	0.250	mg/kg dry	10	10/09/20 19:18	EPA 6020A	
Mercury	ND	0.0499	0.0999	mg/kg dry	10	10/09/20 19:18	EPA 6020A	
Zinc	**72.9**	2.50	4.99	mg/kg dry	10	10/09/20 19:18	EPA 6020A	
T4RB-28U (A0I0826-12)				**Matrix: Soil**				
Batch: 0100258								
Arsenic	**2.97**	0.642	1.28	mg/kg dry	10	10/09/20 19:33	EPA 6020A	
Cadmium	**0.267**	0.128	0.257	mg/kg dry	10	10/09/20 19:33	EPA 6020A	
Copper	**25.5**	1.28	2.57	mg/kg dry	10	10/09/20 19:33	EPA 6020A	
Lead	**21.4**	0.128	0.257	mg/kg dry	10	10/09/20 19:33	EPA 6020A	
Mercury	**0.0933**	0.0513	0.103	mg/kg dry	10	10/09/20 19:33	EPA 6020A	**Ja**
Zinc	**41.3**	2.57	5.13	mg/kg dry	10	10/09/20 19:33	EPA 6020A	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23U (A0I0826-01)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**91.7**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-23L (A0I0826-02)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**92.7**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-24U (A0I0826-03)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**91.7**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-24L (A0I0826-04)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**84.4**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-25U (A0I0826-05)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**96.4**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-25L (A0I0826-06)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**81.4**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-26U (A0I0826-07)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**91.7**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-26L (A0I0826-08)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**88.2**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-27U (A0I0826-09)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**71.1**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-27L (A0I0826-10)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**81.1**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
DUP-1 (A0I0826-11)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**80.3**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-28U (A0I0826-12)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**77.6**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-28L (A0I0826-13)				**Matrix: Soil**		**Batch: 0100057**		

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-28L (A0I0826-13)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**90.1**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-29U (A0I0826-14)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**88.5**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-29L (A0I0826-15)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**87.1**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-1U-OS (A0I0826-16)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**86.0**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	
T4RB-1L (A0I0826-18)				**Matrix: Soil**		**Batch: 0100057**		
% Solids	**77.4**	---	1.00	%	1	10/05/20 08:51	EPA 8000D	

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Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Butyl Tins

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-23L (A0I0826-02)				**Matrix: Soil**		**Batch: BIJ0351**		
Batch: BIJ0351								
Tributyltin Ion	ND	0.445	3.82	ug/kg dry	1	10/20/20 16:51	EPA 8270E-SIM	U
Batch: BIJ0351								
Surrogate: Tripentyltin		*Recovery: 67.1 %*		*Limits: 30-160 %*	*1*	*10/20/20 16:51*	*EPA 8270E-SIM*	
Tripropyltin			*65.2 %*	*30-160 %*	*1*	*10/20/20 16:51*	*EPA 8270E-SIM*	
T4RB-25U (A0I0826-05)				**Matrix: Soil**		**Batch: BIJ0351**		
Batch: BIJ0351								
Tributyltin Ion	ND	0.446	3.82	ug/kg dry	1	10/20/20 17:08	EPA 8270E-SIM	U
Batch: BIJ0351								
Surrogate: Tripentyltin		*Recovery: 51.8 %*		*Limits: 30-160 %*	*1*	*10/20/20 17:08*	*EPA 8270E-SIM*	
Tripropyltin			*46.4 %*	*30-160 %*	*1*	*10/20/20 17:08*	*EPA 8270E-SIM*	
T4RB-28U (A0I0826-12)				**Matrix: Soil**		**Batch: BIJ0351**		
Batch: BIJ0351								
Tributyltin Ion	ND	0.446	3.83	ug/kg dry	1	10/20/20 17:24	EPA 8270E-SIM	U
Batch: BIJ0351								
Surrogate: Tripentyltin		*Recovery: 44.1 %*		*Limits: 30-160 %*	*1*	*10/20/20 17:24*	*EPA 8270E-SIM*	
Tripropyltin			*39.2 %*	*30-160 %*	*1*	*10/20/20 17:24*	*EPA 8270E-SIM*	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100178 - EPA 3546 (Fuels)							**Soil**					
Blank (0100178-BLK1)			Prepared: 10/06/20 12:45		Analyzed: 10/07/20 07:52							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100178-DUP1)			Prepared: 10/06/20 12:45		Analyzed: 10/07/20 09:00							
QC Source Sample: Non-SDG (A0I0615-01)												
Diesel	ND	12.7	25.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	25.4	50.7	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 74 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100178-DUP2)			Prepared: 10/06/20 12:45		Analyzed: 10/07/20 10:08							
QC Source Sample: T4RB-29L (A0I0826-15)												
NWTPH-Dx												
Diesel	ND	11.1	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	22.2	50.0	mg/kg dry	1	---	25.4	---	---	***	**30%**	Q-05
Surr: o-Terphenyl (Surr)			*Recovery: 83 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Batch 0100187 - EPA 3546 (Fuels)							**Soil**					
Blank (0100187-BLK1)			Prepared: 10/06/20 15:37		Analyzed: 10/07/20 14:33							
NWTPH-Dx												
Diesel	ND	8.33	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	16.7	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	16.7	33.3	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100187-DUP1)			Prepared: 10/06/20 15:37		Analyzed: 10/07/20 15:36							
QC Source Sample: T4RB-1U-OS (A0I0826-16)												
NWTPH-Dx												
Diesel	**158**	57.3	115	mg/kg dry	5	---	169	---	---	7	30%	F-11, F-15
Oil	**367**	115	229	mg/kg dry	5	---	412	---	---	12	30%	F-16
Mineral Oil	ND	115	229	mg/kg dry	5	---	ND	---	---	---	30%	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100187 - EPA 3546 (Fuels)							**Soil**					
Duplicate (0100187-DUP1)			Prepared: 10/06/20 15:37		Analyzed: 10/07/20 15:36							
QC Source Sample: T4RB-1U-OS (A0I0826-16)												
Surr: o-Terphenyl (Surr)			*Recovery: 105 %*	*Limits: 50-150 %*		*Dilution: 5x*						S-05
Duplicate (0100187-DUP2)			Prepared: 10/06/20 15:37		Analyzed: 10/08/20 02:19							
QC Source Sample: Non-SDG (A0J0071-02)												
Diesel	ND	11.7	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**108**	23.3	50.0	mg/kg dry	1	---	121	---	---	12	30%	
Mineral Oil	ND	23.3	46.6	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100311 - EPA 5035A							**Soil**					
Blank (0100311-BLK1)			Prepared: 10/09/20 09:00 Analyzed: 10/09/20 11:28									
5035A/8260D												
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
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	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100311 - EPA 5035A							**Soil**					
Blank (0100311-BLK1)			Prepared: 10/09/20 09:00 Analyzed: 10/09/20 11:28									
1,1,1,2-Tetrachloroethane	ND	16.7	33.3	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	---	---	---	---	---	---	
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	66.7	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*101 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*			*"*					
LCS (0100311-BS1)			Prepared: 10/09/20 09:00 Analyzed: 10/09/20 10:33									
5035A/8260D												
Bromobenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Bromochloromethane	883	25.0	50.0	ug/kg wet	50	1000	---	88	80-120%	---	---	
Bromodichloromethane	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Bromoform	906	50.0	100	ug/kg wet	50	1000	---	91	80-120%	---	---	
Bromomethane	954	500	500	ug/kg wet	50	1000	---	95	80-120%	---	---	
Carbon tetrachloride	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
Chlorobenzene	976	12.5	25.0	ug/kg wet	50	1000	---	98	80-120%	---	---	
Chloroethane	813	250	500	ug/kg wet	50	1000	---	81	80-120%	---	---	
Chloroform	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Chloromethane	809	125	250	ug/kg wet	50	1000	---	81	80-120%	---	---	
2-Chlorotoluene	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
4-Chlorotoluene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Dibromochloromethane	944	50.0	100	ug/kg wet	50	1000	---	94	80-120%	---	---	
1,2-Dibromo-3-chloropropane	902	125	250	ug/kg wet	50	1000	---	90	80-120%	---	---	
1,2-Dibromoethane (EDB)	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Dibromomethane	999	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2-Dichlorobenzene	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100311 - EPA 5035A							**Soil**					
LCS (0100311-BS1)			Prepared: 10/09/20 09:00		Analyzed: 10/09/20 10:33							
1,3-Dichlorobenzene	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
1,4-Dichlorobenzene	946	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Dichlorodifluoromethane	899	50.0	100	ug/kg wet	50	1000	---	90	80-120%	---	---	
1,1-Dichloroethane	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2-Dichloroethane (EDC)	993	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,1-Dichloroethene	940	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
cis-1,2-Dichloroethene	973	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
trans-1,2-Dichloroethene	988	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2-Dichloropropane	992	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,3-Dichloropropane	1020	25.0	50.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
2,2-Dichloropropane	1170	25.0	50.0	ug/kg wet	50	1000	---	117	80-120%	---	---	
1,1-Dichloropropene	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
cis-1,3-Dichloropropene	942	25.0	50.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
trans-1,3-Dichloropropene	920	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
Hexachlorobutadiene	949	50.0	100	ug/kg wet	50	1000	---	95	80-120%	---	---	
Methylene chloride	984	250	500	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,1,1,2-Tetrachloroethane	934	25.0	50.0	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1160	25.0	50.0	ug/kg wet	50	1000	---	116	80-120%	---	---	
Tetrachloroethene (PCE)	945	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
1,2,3-Trichlorobenzene	983	125	250	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,2,4-Trichlorobenzene	990	125	250	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,1,1-Trichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,1,2-Trichloroethane	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Trichloroethene (TCE)	996	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Trichlorofluoromethane	571	100	100	ug/kg wet	50	1000	---	**57**	**80-120%**	---	---	Q-55
1,2,3-Trichloropropane	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Vinyl chloride	893	12.5	25.0	ug/kg wet	50	1000	---	89	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*			*"*				
Duplicate (0100311-DUP1)			Prepared: 09/28/20 12:15		Analyzed: 10/09/20 21:26							

QC Source Sample: T4RB-23L (A0I0826-02)

5035A/8260D

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100311 - EPA 5035A							**Soil**					
Duplicate (0100311-DUP1)			Prepared: 09/28/20 12:15		Analyzed: 10/09/20 21:26							
QC Source Sample: T4RB-23L (A0I0826-02)												
Bromobenzene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
Bromochloromethane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	63.8	128	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	638	638	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	319	638	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	160	319	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	63.8	128	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	160	319	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	63.8	128	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	63.8	128	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	63.8	128	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	319	638	ug/kg dry	50	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100311 - EPA 5035A							**Soil**					
Duplicate (0100311-DUP1)			Prepared: 09/28/20 12:15		Analyzed: 10/09/20 21:26							
QC Source Sample: T4RB-23L (A0I0826-02)												
1,1,1,2-Tetrachloroethane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	160	319	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	160	319	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	63.8	128	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	31.9	63.8	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	16.0	31.9	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*99 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*101 %*		*79-120 %*				*"*			
Matrix Spike (0100311-MS1)			Prepared: 09/29/20 10:55		Analyzed: 10/09/20 22:20							
QC Source Sample: T4RB-28U (A0I0826-12)												
5035A/8260D												
Bromobenzene	2230	28.0	56.0	ug/kg dry	50	2240	ND	99	78-121%	---	---	
Bromochloromethane	2000	56.0	112	ug/kg dry	50	2240	ND	89	78-125%	---	---	
Bromodichloromethane	2320	56.0	112	ug/kg dry	50	2240	ND	103	75-127%	---	---	
Bromoform	2020	112	224	ug/kg dry	50	2240	ND	90	67-132%	---	---	
Bromomethane	2250	1120	1120	ug/kg dry	50	2240	ND	101	53-143%	---	---	
Carbon tetrachloride	2320	56.0	112	ug/kg dry	50	2240	ND	104	70-135%	---	---	
Chlorobenzene	2130	28.0	56.0	ug/kg dry	50	2240	ND	95	79-120%	---	---	
Chloroethane	2410	560	1120	ug/kg dry	50	2240	ND	107	59-139%	---	---	
Chloroform	2310	56.0	112	ug/kg dry	50	2240	ND	103	78-123%	---	---	
Chloromethane	1790	280	560	ug/kg dry	50	2240	ND	80	50-136%	---	---	
2-Chlorotoluene	2190	56.0	112	ug/kg dry	50	2240	ND	98	75-122%	---	---	
4-Chlorotoluene	2260	56.0	112	ug/kg dry	50	2240	ND	101	72-124%	---	---	
Dibromochloromethane	2100	112	224	ug/kg dry	50	2240	ND	94	74-126%	---	---	
1,2-Dibromo-3-chloropropane	2020	280	560	ug/kg dry	50	2240	ND	90	61-132%	---	---	
1,2-Dibromoethane (EDB)	2250	56.0	112	ug/kg dry	50	2240	ND	100	78-122%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100311 - EPA 5035A							**Soil**					
Matrix Spike (0100311-MS1)			Prepared: 09/29/20 10:55		Analyzed: 10/09/20 22:20							
QC Source Sample: T4RB-28U (A0I0826-12)												
Dibromomethane	2210	56.0	112	ug/kg dry	50	2240	ND	99	78-125%	---	---	
1,2-Dichlorobenzene	2230	28.0	56.0	ug/kg dry	50	2240	ND	99	78-121%	---	---	
1,3-Dichlorobenzene	2220	28.0	56.0	ug/kg dry	50	2240	ND	99	77-121%	---	---	
1,4-Dichlorobenzene	2050	28.0	56.0	ug/kg dry	50	2240	ND	91	75-120%	---	---	
Dichlorodifluoromethane	1960	112	224	ug/kg dry	50	2240	ND	87	29-149%	---	---	
1,1-Dichloroethane	2190	28.0	56.0	ug/kg dry	50	2240	ND	98	76-125%	---	---	
1,2-Dichloroethane (EDC)	2160	28.0	56.0	ug/kg dry	50	2240	ND	96	73-128%	---	---	
1,1-Dichloroethene	1980	28.0	56.0	ug/kg dry	50	2240	ND	88	70-131%	---	---	
cis-1,2-Dichloroethene	2170	28.0	56.0	ug/kg dry	50	2240	ND	97	77-123%	---	---	
trans-1,2-Dichloroethene	2170	28.0	56.0	ug/kg dry	50	2240	ND	97	74-125%	---	---	
1,2-Dichloropropane	2190	28.0	56.0	ug/kg dry	50	2240	ND	98	76-123%	---	---	
1,3-Dichloropropane	2220	56.0	112	ug/kg dry	50	2240	ND	99	77-121%	---	---	
2,2-Dichloropropane	2310	56.0	112	ug/kg dry	50	2240	ND	103	67-133%	---	---	
1,1-Dichloropropene	2210	56.0	112	ug/kg dry	50	2240	ND	98	76-125%	---	---	
cis-1,3-Dichloropropene	2100	56.0	112	ug/kg dry	50	2240	ND	94	74-126%	---	---	
trans-1,3-Dichloropropene	2020	112	224	ug/kg dry	50	2240	ND	90	71-130%	---	---	
Hexachlorobutadiene	2050	112	224	ug/kg dry	50	2240	ND	92	61-135%	---	---	
Methylene chloride	2090	560	1120	ug/kg dry	50	2240	ND	93	70-128%	---	---	
1,1,1,2-Tetrachloroethane	2010	56.0	112	ug/kg dry	50	2240	ND	90	78-125%	---	---	
1,1,2,2-Tetrachloroethane	2480	56.0	112	ug/kg dry	50	2240	ND	111	70-124%	---	---	
Tetrachloroethene (PCE)	1990	28.0	56.0	ug/kg dry	50	2240	ND	89	73-128%	---	---	
1,2,3-Trichlorobenzene	2140	280	560	ug/kg dry	50	2240	ND	95	66-130%	---	---	
1,2,4-Trichlorobenzene	2230	280	560	ug/kg dry	50	2240	ND	100	67-129%	---	---	
1,1,1-Trichloroethane	2310	28.0	56.0	ug/kg dry	50	2240	ND	103	73-130%	---	---	
1,1,2-Trichloroethane	2170	28.0	56.0	ug/kg dry	50	2240	ND	97	78-121%	---	---	
Trichloroethene (TCE)	2170	28.0	56.0	ug/kg dry	50	2240	ND	97	77-123%	---	---	
Trichlorofluoromethane	1620	112	224	ug/kg dry	50	2240	ND	72	62-140%	---	---	Q-54
1,2,3-Trichloropropane	2210	56.0	112	ug/kg dry	50	2240	ND	99	73-125%	---	---	
Vinyl chloride	2070	28.0	56.0	ug/kg dry	50	2240	ND	93	56-135%	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 100 %*	*Limits: 80-120 %*	*Dilution: 1x*	
Toluene-d8 (Surr)	*99 %*	*80-120 %*	*"*	
4-Bromofluorobenzene (Surr)	*100 %*	*79-120 %*	*"*	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100360 - EPA 3546							**Soil**					
Blank (0100360-BLK1)			Prepared: 10/12/20 07:15		Analyzed: 10/12/20 16:53							**C-07**
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B
Aroclor 1232	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B-02
Aroclor 1242	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1262	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1268	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 97 %*		*Limits: 60-125 %*			*Dilution: 1x*				
LCS (0100360-BS1)			Prepared: 10/12/20 07:15		Analyzed: 10/12/20 17:11							**C-07**
EPA 8082A												
Aroclor 1016	178	2.00	4.00	ug/kg wet	1	250	---	71	47-134%	---	---	
Aroclor 1260	220	2.00	4.00	ug/kg wet	1	250	---	88	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 94 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Duplicate (0100360-DUP1)			Prepared: 10/12/20 07:15		Analyzed: 10/12/20 18:04							**C-07**
QC Source Sample: T4RB-23U (A0I0826-01)												
EPA 8082A												
Aroclor 1016	ND	2.14	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	8.86	8.86	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Aroclor 1232	ND	4.70	4.70	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Aroclor 1242	ND	4.27	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	2.14	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	ND	2.14	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1260	**2.76**	2.14	4.27	ug/kg dry	1	---	3.40	---	---	21	30%	Ja
Aroclor 1262	ND	2.14	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1268	ND	2.14	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 75 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Matrix Spike (0100360-MS1)			Prepared: 10/12/20 07:15		Analyzed: 10/12/20 20:25							**C-07**

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100360 - EPA 3546							**Soil**					
Matrix Spike (0100360-MS1)			Prepared: 10/12/20 07:15		Analyzed: 10/12/20 20:25							**C-07**
QC Source Sample: T4RB-1L (A0I0826-18)												
EPA 8082A												
Aroclor 1016	281	2.58	5.15	ug/kg dry	1	322	ND	87	47-134%	---	---	
Aroclor 1260	254	2.58	5.15	ug/kg dry	1	322	15.7	74	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 76 %*		*Limits: 60-125 %*		*Dilution: 1x*					

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100347 - EPA 3546							**Soil**					
Blank (0100347-BLK1)			Prepared: 10/09/20 07:17		Analyzed: 10/15/20 17:26							**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 74 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*107 %*		*55-130 %*				*"*			
LCS (0100347-BS1)			Prepared: 10/09/20 07:17		Analyzed: 10/15/20 17:43							**C-05**
EPA 8081B												
Aldrin	42.5	1.00	2.00	ug/kg wet	1	50.0	---	85	45-136%	---	---	
gamma-BHC (Lindane)	46.4	1.00	2.00	ug/kg wet	1	50.0	---	93	49-135%	---	---	
cis-Chlordane	46.4	1.00	2.00	ug/kg wet	1	50.0	---	93	54-133%	---	---	
trans-Chlordane	47.7	1.00	2.00	ug/kg wet	1	50.0	---	95	53-135%	---	---	
4,4'-DDD	52.8	1.00	2.00	ug/kg wet	1	50.0	---	106	56-139%	---	---	
4,4'-DDE	47.5	1.00	2.00	ug/kg wet	1	50.0	---	95	56-134%	---	---	
4,4'-DDT	63.6	1.00	2.00	ug/kg wet	1	50.0	---	127	50-141%	---	---	
Dieldrin	53.8	1.00	2.00	ug/kg wet	1	50.0	---	108	56-136%	---	---	
Endosulfan I	50.2	1.00	2.00	ug/kg wet	1	50.0	---	100	53-132%	---	---	
Endosulfan II	55.1	1.00	2.00	ug/kg wet	1	50.0	---	110	53-134%	---	---	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100347 - EPA 3546							**Soil**					
LCS (0100347-BS1)			Prepared: 10/09/20 07:17		Analyzed: 10/15/20 17:43							**C-05**
Endosulfan sulfate	57.9	1.00	2.00	ug/kg wet	1	50.0	---	116	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*110 %*		*55-130 %*		*"*					
LCS (0100347-BS2)			Prepared: 10/09/20 10:40		Analyzed: 10/15/20 18:00							**C-05**
EPA 8081B												
cis-Nonachlor	48.5	1.00	2.00	ug/kg wet	1	50.0	---	97	68-121%	---	---	
2,4'-DDD	47.2	1.00	2.00	ug/kg wet	1	50.0	---	94	58-128%	---	---	
2,4'-DDE	35.9	1.00	2.00	ug/kg wet	1	50.0	---	72	49-125%	---	---	
2,4'-DDT	51.4	1.00	2.00	ug/kg wet	1	50.0	---	103	66-145%	---	---	
Oxychlordane	35.1	1.00	2.00	ug/kg wet	1	50.0	---	70	56-120%	---	---	
trans-Nonachlor	37.2	1.00	2.00	ug/kg wet	1	50.0	---	74	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 69 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*114 %*		*55-130 %*		*"*					
Duplicate (0100347-DUP1)			Prepared: 10/09/20 07:17		Analyzed: 10/15/20 19:26							**C-05**
QC Source Sample: Non-SDG (A0I0799-02RE1)												
Aldrin	ND	0.973	1.95	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	0.973	1.95	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	3.99	3.99	ug/kg dry	1	---	ND	---	---	---	30%	R-02
trans-Chlordane	ND	3.11	3.11	ug/kg dry	1	---	ND	---	---	---	30%	R-02
4,4'-DDD	**29.4**	0.973	1.95	ug/kg dry	1	---	27.5	---	---	7	30%	
4,4'-DDE	**153**	0.973	1.95	ug/kg dry	1	---	145	---	---	5	30%	
4,4'-DDT	**217**	0.973	1.95	ug/kg dry	1	---	187	---	---	15	30%	
Dieldrin	**37.3**	0.973	1.95	ug/kg dry	1	---	35.7	---	---	5	30%	
Endosulfan I	ND	0.973	1.95	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	2.63	2.63	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Endosulfan sulfate	ND	2.43	2.43	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Chlordane (Technical)	ND	29.2	58.4	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	24.7	24.7	ug/kg dry	1	---	ND	---	---	---	30%	R-02
2,4'-DDD	ND	13.6	13.6	ug/kg dry	1	---	ND	---	---	---	30%	R-02
2,4'-DDE	ND	5.15	5.15	ug/kg dry	1	---	ND	---	---	---	30%	R-02
2,4'-DDT	**24.0**	0.973	1.95	ug/kg dry	1	---	21.6	---	---	11	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100347 - EPA 3546							**Soil**					
Duplicate (0100347-DUP1)			Prepared: 10/09/20 07:17		Analyzed: 10/15/20 19:26							**C-05**
QC Source Sample: Non-SDG (A0I0799-02RE1)												
Oxychlordane	ND	1.95	1.95	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	**4.80**	0.973	1.95	ug/kg dry	1	---	ND	---	---		**30%**	Q-05, R-02
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 43 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*94 %*		*55-130 %*			*"*				
Matrix Spike (0100347-MS1)			Prepared: 10/09/20 07:17		Analyzed: 10/15/20 22:52							**C-05**
QC Source Sample: Non-SDG (A0J0010-02RE1)												
EPA 8081B												
Aldrin	26.0	0.969	1.94	ug/kg dry	1	48.4	ND	54	45-136%	---	---	
gamma-BHC (Lindane)	27.8	0.969	1.94	ug/kg dry	1	48.4	ND	57	49-135%	---	---	
cis-Chlordane	38.4	1.94	1.94	ug/kg dry	1	48.4	ND	79	54-133%	---	---	
trans-Chlordane	32.6	0.969	1.94	ug/kg dry	1	48.4	ND	67	53-135%	---	---	
4,4'-DDD	43.3	2.32	2.32	ug/kg dry	1	48.4	ND	89	56-139%	---	---	R-02
4,4'-DDE	180	0.969	1.94	ug/kg dry	1	48.4	144	76	56-134%	---	---	
4,4'-DDT	162	0.969	1.94	ug/kg dry	1	48.4	107	114	50-141%	---	---	
Dieldrin	57.6	0.969	1.94	ug/kg dry	1	48.4	19.4	79	56-136%	---	---	
Endosulfan I	38.3	0.969	1.94	ug/kg dry	1	48.4	ND	79	53-132%	---	---	
Endosulfan II	46.4	0.969	1.94	ug/kg dry	1	48.4	ND	96	53-134%	---	---	
Endosulfan sulfate	50.8	0.969	1.94	ug/kg dry	1	48.4	ND	105	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*100 %*		*55-130 %*			*"*				
Matrix Spike (0100347-MS2)			Prepared: 10/09/20 10:40		Analyzed: 10/15/20 23:09							**C-05**
QC Source Sample: Non-SDG (A0J0010-02RE1)												
EPA 8081B												
cis-Nonachlor	56.6	1.97	1.97	ug/kg dry	1	49.3	3.21	108	68-121%	---	---	
2,4'-DDD	48.3	0.985	1.97	ug/kg dry	1	49.3	ND	98	58-128%	---	---	
2,4'-DDE	48.0	1.97	1.97	ug/kg dry	1	49.3	ND	98	49-125%	---	---	
2,4'-DDT	82.7	0.985	1.97	ug/kg dry	1	49.3	24.2	119	66-145%	---	---	
Oxychlordane	42.6	0.985	1.97	ug/kg dry	1	49.3	ND	86	56-120%	---	---	
trans-Nonachlor	50.2	0.985	1.97	ug/kg dry	1	49.3	3.12	96	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 62 %*		*Limits: 42-129 %*			*Dilution: 1x*				

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100347 - EPA 3546							**Soil**					
Matrix Spike (0100347-MS2)				Prepared: 10/09/20 10:40		Analyzed: 10/15/20 23:09						**C-05**
QC Source Sample: Non-SDG (A0J0010-02RE1)												
Surr: Decachlorobiphenyl (Surr)				*Recovery: 114 %*		*Limits: 55-130 %*						*Dilution: 1x*

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100400-BLK1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 21:10								**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 22:20								**C-05**
EPA 8081B												
Aldrin	27.6	1.00	2.00	ug/kg wet	1	50.0	---	55	45-136%	---	---	
gamma-BHC (Lindane)	30.2	1.00	2.00	ug/kg wet	1	50.0	---	60	49-135%	---	---	Q-41
cis-Chlordane	40.4	1.00	2.00	ug/kg wet	1	50.0	---	81	54-133%	---	---	
trans-Chlordane	39.2	1.00	2.00	ug/kg wet	1	50.0	---	78	53-135%	---	---	
4,4'-DDD	54.1	1.00	2.00	ug/kg wet	1	50.0	---	108	56-139%	---	---	
4,4'-DDE	45.9	1.00	2.00	ug/kg wet	1	50.0	---	92	56-134%	---	---	
4,4'-DDT	51.7	1.00	2.00	ug/kg wet	1	50.0	---	103	50-141%	---	---	
Dieldrin	40.6	1.00	2.00	ug/kg wet	1	50.0	---	81	56-136%	---	---	
Endosulfan I	41.9	1.00	2.00	ug/kg wet	1	50.0	---	84	53-132%	---	---	
Endosulfan II	55.0	1.00	2.00	ug/kg wet	1	50.0	---	110	53-134%	---	---	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 22:20							**C-05**
Endosulfan sulfate	61.5	1.00	2.00	ug/kg wet	1	50.0	---	123	55-136%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*112 %*	*55-130 %*			*"*					
LCS (0100400-BS2)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 22:38							**C-05**
EPA 8081B												
cis-Nonachlor	50.0	1.00	2.00	ug/kg wet	1	50.0	---	100	68-121%	---	---	
2,4'-DDD	48.5	1.00	2.00	ug/kg wet	1	50.0	---	97	58-128%	---	---	
2,4'-DDE	38.2	1.00	2.00	ug/kg wet	1	50.0	---	76	49-125%	---	---	
2,4'-DDT	54.0	1.00	2.00	ug/kg wet	1	50.0	---	108	66-145%	---	---	
Oxychlordane	35.8	1.00	2.00	ug/kg wet	1	50.0	---	72	56-120%	---	---	
trans-Nonachlor	38.9	1.00	2.00	ug/kg wet	1	50.0	---	78	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 56 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							**C-05**
QC Source Sample: DUP-1 (A0I0826-11RE1)												
Aldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Dieldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	34.3	68.6	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							**C-05**
QC Source Sample: DUP-1 (A0I0826-11RE1)												
Oxychlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 44 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*95 %*		*55-130 %*				*"*			
Matrix Spike (0100400-MS1)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:06							**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
EPA 8081B												
Aldrin	52.1	9.92	19.8	ug/kg dry	5	49.6	ND	105	45-136%	---	---	
gamma-BHC (Lindane)	66.9	19.8	19.8	ug/kg dry	5	49.6	ND	135	49-135%	---	---	
cis-Chlordane	62.6	9.92	19.8	ug/kg dry	5	49.6	ND	126	54-133%	---	---	
trans-Chlordane	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-135%	---	---	
4,4'-DDD	73.3	19.8	19.8	ug/kg dry	5	49.6	ND	**148**	**56-139%**	---	---	Q-02
4,4'-DDE	74.6	9.92	19.8	ug/kg dry	5	49.6	25.8	98	56-134%	---	---	
4,4'-DDT	349	9.92	19.8	ug/kg dry	5	49.6	268	**165**	**50-141%**	---	---	Q-03
Dieldrin	52.8	9.92	19.8	ug/kg dry	5	49.6	ND	106	56-136%	---	---	
Endosulfan I	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-132%	---	---	
Endosulfan II	56.4	9.92	19.8	ug/kg dry	5	49.6	ND	114	53-134%	---	---	
Endosulfan sulfate	78.8	31.7	31.7	ug/kg dry	5	49.6	ND	**159**	**55-136%**	---	---	Q-41, R-02
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*		*Limits: 42-129 %*				*Dilution: 5x*			
Decachlorobiphenyl (Surr)			*347 %*		*55-130 %*				*"*			S-04
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:23							**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
EPA 8081B												
cis-Nonachlor	66.7	19.9	19.9	ug/kg dry	5	49.7	ND	**134**	**68-121%**	---	---	Q-02
2,4'-DDD	55.1	9.94	19.9	ug/kg dry	5	49.7	ND	111	58-128%	---	---	
2,4'-DDE	54.9	9.94	19.9	ug/kg dry	5	49.7	ND	110	49-125%	---	---	
2,4'-DDT	93.0	9.94	19.9	ug/kg dry	5	49.7	43.3	100	66-145%	---	---	
Oxychlordane	56.9	9.94	19.9	ug/kg dry	5	49.7	ND	114	56-120%	---	---	
trans-Nonachlor	48.9	9.94	19.9	ug/kg dry	5	49.7	ND	98	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*		*Limits: 42-129 %*				*Dilution: 5x*			

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56 Analyzed: 10/18/20 00:23									**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 340 %*	*Limits: 55-130 %*		*Dilution: 5x*						S-04

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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 0100353 - EPA 3546							**Soil**					
Blank (0100353-BLK1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:12									
EPA 8270E												
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	---	---	---	---	---	---	Q-30
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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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100353 - EPA 3546							**Soil**					
Blank (0100353-BLK1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:12									
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 83 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*75 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*78 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*83 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*78 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*74 %*		*39-132 %*			*"*				
LCS (0100353-BS1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:55									
EPA 8270E												
Acenaphthene	441	2.66	5.34	ug/kg wet	2	533	---	83	40-123%	---	---	
Acenaphthylene	464	2.66	5.34	ug/kg wet	2	533	---	87	32-132%	---	---	
Anthracene	431	2.66	5.34	ug/kg wet	2	533	---	81	47-123%	---	---	
Benz(a)anthracene	440	2.66	5.34	ug/kg wet	2	533	---	82	49-126%	---	---	
Benzo(a)pyrene	452	4.00	8.00	ug/kg wet	2	533	---	85	45-129%	---	---	
Benzo(b)fluoranthene	448	4.00	8.00	ug/kg wet	2	533	---	84	45-132%	---	---	
Benzo(k)fluoranthene	432	4.00	8.00	ug/kg wet	2	533	---	81	47-132%	---	---	
Benzo(g,h,i)perylene	431	2.66	5.34	ug/kg wet	2	533	---	81	43-134%	---	---	
Chrysene	438	2.66	5.34	ug/kg wet	2	533	---	82	50-124%	---	---	
Dibenz(a,h)anthracene	415	2.66	5.34	ug/kg wet	2	533	---	78	45-134%	---	---	
Fluoranthene	448	2.66	5.34	ug/kg wet	2	533	---	84	50-127%	---	---	
Fluorene	433	2.66	5.34	ug/kg wet	2	533	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	398	2.66	5.34	ug/kg wet	2	533	---	75	45-133%	---	---	
1-Methylnaphthalene	458	5.34	10.7	ug/kg wet	2	533	---	86	40-120%	---	---	
2-Methylnaphthalene	471	5.34	10.7	ug/kg wet	2	533	---	88	38-122%	---	---	
Naphthalene	428	5.34	10.7	ug/kg wet	2	533	---	80	35-123%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100353 - EPA 3546							**Soil**					
LCS (0100353-BS1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 10:55							
Phenanthrene	408	2.66	5.34	ug/kg wet	2	533	---	77	50-121%	---	---	
Pyrene	456	2.66	5.34	ug/kg wet	2	533	---	86	47-127%	---	---	
Carbazole	231	4.00	8.00	ug/kg wet	2	533	---	**43**	**50-123%**	---	---	Q-30
Dibenzofuran	432	2.66	5.34	ug/kg wet	2	533	---	81	44-120%	---	---	
2-Chlorophenol	420	13.3	26.6	ug/kg wet	2	533	---	79	34-121%	---	---	
4-Chloro-3-methylphenol	525	26.6	53.4	ug/kg wet	2	533	---	99	45-122%	---	---	
2,4-Dichlorophenol	490	13.3	26.6	ug/kg wet	2	533	---	92	40-122%	---	---	
2,4-Dimethylphenol	506	13.3	26.6	ug/kg wet	2	533	---	95	30-127%	---	---	
2,4-Dinitrophenol	537	66.6	133	ug/kg wet	2	533	---	101	10-137%	---	---	
4,6-Dinitro-2-methylphenol	469	66.6	133	ug/kg wet	2	533	---	88	29-132%	---	---	
2-Methylphenol	460	6.66	13.3	ug/kg wet	2	533	---	86	32-122%	---	---	
3+4-Methylphenol(s)	465	6.66	13.3	ug/kg wet	2	533	---	87	34-120%	---	---	
2-Nitrophenol	464	26.6	53.4	ug/kg wet	2	533	---	87	36-123%	---	---	
4-Nitrophenol	473	26.6	53.4	ug/kg wet	2	533	---	89	30-132%	---	---	
Pentachlorophenol (PCP)	440	26.6	53.4	ug/kg wet	2	533	---	82	25-133%	---	---	
Phenol	439	5.34	10.7	ug/kg wet	2	533	---	82	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	448	13.3	26.6	ug/kg wet	2	533	---	84	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	462	13.3	26.6	ug/kg wet	2	533	---	87	40-120%	---	---	
2,4,5-Trichlorophenol	456	13.3	26.6	ug/kg wet	2	533	---	85	41-124%	---	---	
2,4,6-Trichlorophenol	455	13.3	26.6	ug/kg wet	2	533	---	85	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	496	40.0	80.0	ug/kg wet	2	533	---	93	51-133%	---	---	
Butyl benzyl phthalate	495	26.6	53.4	ug/kg wet	2	533	---	93	48-132%	---	---	
Diethylphthalate	433	26.6	53.4	ug/kg wet	2	533	---	81	50-124%	---	---	
Dimethylphthalate	442	26.6	53.4	ug/kg wet	2	533	---	83	48-124%	---	---	
Di-n-butylphthalate	463	26.6	53.4	ug/kg wet	2	533	---	87	51-128%	---	---	
Di-n-octyl phthalate	483	26.6	53.4	ug/kg wet	2	533	---	91	45-140%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 79 %*		*Limits: 37-122 %*			*Dilution: 2x*				
2-Fluorobiphenyl (Surr)			*79 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*80 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*80 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*77 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*81 %*		*39-132 %*			*"*				
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 13:42							

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100353 - EPA 3546							**Soil**					
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 13:42							
QC Source Sample: T4RB-23U (A0I0826-01RE1)												
EPA 8270E												
Acenaphthene	ND	5.78	11.6	ug/kg dry	4	---	ND	---	---	---	30%	
Acenaphthylene	ND	5.78	11.6	ug/kg dry	4	---	ND	---	---	---	30%	
Anthracene	ND	5.78	11.6	ug/kg dry	4	---	ND	---	---	---	30%	
Benz(a)anthracene	**20.6**	5.78	11.6	ug/kg dry	4	---	29.7	---	---	**36**	**30%**	Q-04
Benzo(a)pyrene	**34.4**	8.69	17.4	ug/kg dry	4	---	49.2	---	---	**35**	**30%**	Q-04
Benzo(b)fluoranthene	**41.3**	8.69	17.4	ug/kg dry	4	---	60.9	---	---	**38**	**30%**	Q-04
Benzo(k)fluoranthene	**16.4**	8.69	17.4	ug/kg dry	4	---	23.1	---	---	**34**	**30%**	Q-05, Ja
Benzo(g,h,i)perylene	**26.3**	5.78	11.6	ug/kg dry	4	---	38.2	---	---	**37**	**30%**	Q-04
Chrysene	**22.5**	5.78	11.6	ug/kg dry	4	---	35.1	---	---	**44**	**30%**	Q-04
Dibenz(a,h)anthracene	ND	5.78	11.6	ug/kg dry	4	---	7.50	---	---	***	**30%**	Q-05
Fluoranthene	**29.1**	5.78	11.6	ug/kg dry	4	---	46.1	---	---	**45**	**30%**	Q-04
Fluorene	ND	5.78	11.6	ug/kg dry	4	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**22.3**	5.78	11.6	ug/kg dry	4	---	32.4	---	---	**37**	**30%**	Q-04
1-Methylnaphthalene	ND	11.6	23.2	ug/kg dry	4	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	11.6	23.2	ug/kg dry	4	---	ND	---	---	---	30%	
Naphthalene	ND	11.6	23.2	ug/kg dry	4	---	ND	---	---	---	30%	
Phenanthrene	**12.0**	5.78	11.6	ug/kg dry	4	---	19.7	---	---	**48**	**30%**	Q-05
Pyrene	**30.1**	5.78	11.6	ug/kg dry	4	---	46.8	---	---	**43**	**30%**	Q-04
Carbazole	ND	8.69	17.4	ug/kg dry	4	---	ND	---	---	---	30%	Q-30
Dibenzofuran	ND	5.78	11.6	ug/kg dry	4	---	ND	---	---	---	30%	
2-Chlorophenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	145	290	ug/kg dry	4	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	145	290	ug/kg dry	4	---	ND	---	---	---	30%	
2-Methylphenol	ND	14.5	29.0	ug/kg dry	4	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	14.5	29.0	ug/kg dry	4	---	ND	---	---	---	30%	
2-Nitrophenol	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
4-Nitrophenol	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Phenol	ND	11.6	23.2	ug/kg dry	4	---	23.2	---	---	***	**30%**	Q-05

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100353 - EPA 3546							**Soil**					
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 13:42									
QC Source Sample: T4RB-23U (A0I0826-01RE1)												
2,3,4,6-Tetrachlorophenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
2,3,5,6-Tetrachlorophenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	29.0	57.8	ug/kg dry	4	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	86.9	174	ug/kg dry	4	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Diethylphthalate	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Dimethylphthalate	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	57.8	116	ug/kg dry	4	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*			*Limits: 37-122 %*				*Dilution: 4x*		
2-Fluorobiphenyl (Surr)			*60 %*			*44-120 %*				*"*		
Phenol-d6 (Surr)			*55 %*			*33-122 %*				*"*		
p-Terphenyl-d14 (Surr)			*66 %*			*54-127 %*				*"*		
2-Fluorophenol (Surr)			*59 %*			*35-120 %*				*"*		
2,4,6-Tribromophenol (Surr)			*62 %*			*39-132 %*				*"*		
Matrix Spike (0100353-MS1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 15:49									
QC Source Sample: Non-SDG (A0J0265-03RE2)												
EPA 8270E												
Acenaphthene	417	2.64	5.30	ug/kg wet	2	529	ND	79	40-123%	---	---	
Acenaphthylene	444	2.64	5.30	ug/kg wet	2	529	ND	84	32-132%	---	---	
Anthracene	428	2.64	5.30	ug/kg wet	2	529	ND	81	47-123%	---	---	
Benz(a)anthracene	427	2.64	5.30	ug/kg wet	2	529	ND	81	49-126%	---	---	
Benzo(a)pyrene	431	3.97	7.94	ug/kg wet	2	529	ND	81	45-129%	---	---	
Benzo(b)fluoranthene	435	3.97	7.94	ug/kg wet	2	529	ND	82	45-132%	---	---	
Benzo(k)fluoranthene	406	3.97	7.94	ug/kg wet	2	529	ND	77	47-132%	---	---	
Benzo(g,h,i)perylene	393	2.64	5.30	ug/kg wet	2	529	ND	74	43-134%	---	---	
Chrysene	431	2.64	5.30	ug/kg wet	2	529	ND	81	50-124%	---	---	
Dibenz(a,h)anthracene	394	2.64	5.30	ug/kg wet	2	529	ND	74	45-134%	---	---	
Fluoranthene	432	2.64	5.30	ug/kg wet	2	529	2.87	81	50-127%	---	---	
Fluorene	412	2.64	5.30	ug/kg wet	2	529	ND	78	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	368	2.64	5.30	ug/kg wet	2	529	ND	69	45-133%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100353 - EPA 3546							**Soil**					
Matrix Spike (0100353-MS1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 15:49							
QC Source Sample: Non-SDG (A0J0265-03RE2)												
1-Methylnaphthalene	433	5.30	10.6	ug/kg wet	2	529	ND	82	40-120%	---	---	
2-Methylnaphthalene	444	5.30	10.6	ug/kg wet	2	529	ND	84	38-122%	---	---	
Naphthalene	397	5.30	10.6	ug/kg wet	2	529	5.39	74	35-123%	---	---	
Phenanthrene	405	2.64	5.30	ug/kg wet	2	529	3.51	76	50-121%	---	---	
Pyrene	437	2.64	5.30	ug/kg wet	2	529	ND	82	47-127%	---	---	
Carbazole	403	3.97	7.94	ug/kg wet	2	529	ND	76	50-123%	---	---	Q-30
Dibenzofuran	412	2.64	5.30	ug/kg wet	2	529	ND	78	44-120%	---	---	
2-Chlorophenol	389	13.2	26.4	ug/kg wet	2	529	ND	73	34-121%	---	---	
4-Chloro-3-methylphenol	445	26.4	53.0	ug/kg wet	2	529	ND	84	45-122%	---	---	
2,4-Dichlorophenol	424	13.2	26.4	ug/kg wet	2	529	ND	80	40-122%	---	---	
2,4-Dimethylphenol	325	13.2	26.4	ug/kg wet	2	529	ND	61	30-127%	---	---	
2,4-Dinitrophenol	552	66.1	132	ug/kg wet	2	529	ND	104	10-137%	---	---	
4,6-Dinitro-2-methylphenol	427	66.1	132	ug/kg wet	2	529	ND	81	29-132%	---	---	
2-Methylphenol	365	6.61	13.2	ug/kg wet	2	529	ND	69	32-122%	---	---	
3+4-Methylphenol(s)	382	6.61	13.2	ug/kg wet	2	529	ND	72	34-120%	---	---	
2-Nitrophenol	445	26.4	53.0	ug/kg wet	2	529	ND	84	36-123%	---	---	
4-Nitrophenol	394	26.4	53.0	ug/kg wet	2	529	ND	74	30-132%	---	---	
Pentachlorophenol (PCP)	490	26.4	53.0	ug/kg wet	2	529	ND	93	25-133%	---	---	
Phenol	382	5.30	10.6	ug/kg wet	2	529	ND	72	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	420	13.2	26.4	ug/kg wet	2	529	ND	79	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	435	13.2	26.4	ug/kg wet	2	529	ND	82	40-120%	---	---	
2,4,5-Trichlorophenol	424	13.2	26.4	ug/kg wet	2	529	ND	80	41-124%	---	---	
2,4,6-Trichlorophenol	412	13.2	26.4	ug/kg wet	2	529	ND	78	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	581	39.7	79.4	ug/kg wet	2	529	40.8	102	51-133%	---	---	
Butyl benzyl phthalate	521	26.4	53.0	ug/kg wet	2	529	ND	98	48-132%	---	---	
Diethylphthalate	418	26.4	53.0	ug/kg wet	2	529	ND	79	50-124%	---	---	
Dimethylphthalate	428	26.4	53.0	ug/kg wet	2	529	ND	81	48-124%	---	---	
Di-n-butylphthalate	462	26.4	53.0	ug/kg wet	2	529	ND	87	51-128%	---	---	
Di-n-octyl phthalate	548	26.4	53.0	ug/kg wet	2	529	ND	104	45-140%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 77 %*	*Limits: 37-122 %*	*Dilution: 2x*
2-Fluorobiphenyl (Surr)	*72 %*	*44-120 %*	*"*
Phenol-d6 (Surr)	*70 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*79 %*	*54-127 %*	*"*

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100353 - EPA 3546							**Soil**					
Matrix Spike (0100353-MS1)				Prepared: 10/10/20 09:20		Analyzed: 10/12/20 15:49						
QC Source Sample: Non-SDG (A0J0265-03RE2)												
Surr: 2-Fluorophenol (Surr)			*Recovery: 64 %*	*Limits: 35-120 %*		*Dilution: 2x*						
2,4,6-Tribromophenol (Surr)			*73 %*	*39-132 %*		*"*						

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QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100258 - EPA 3051A							**Soil**					
Blank (0100258-BLK1)			Prepared: 10/08/20 08:34		Analyzed: 10/09/20 15:18							
EPA 6020A												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (0100258-BS1)			Prepared: 10/08/20 08:34		Analyzed: 10/09/20 15:23							
EPA 6020A												
Arsenic	46.5	0.500	1.00	mg/kg wet	10	50.0	---	93	80-120%	---	---	
Cadmium	47.8	0.100	0.200	mg/kg wet	10	50.0	---	96	80-120%	---	---	
Copper	52.3	1.00	2.00	mg/kg wet	10	50.0	---	105	80-120%	---	---	
Lead	49.3	0.100	0.200	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Mercury	1.00	0.0400	0.0800	mg/kg wet	10	1.00	---	100	80-120%	---	---	
Zinc	51.3	2.00	4.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Duplicate (0100258-DUP1)			Prepared: 10/08/20 08:34		Analyzed: 10/09/20 15:33							
QC Source Sample: T4RB-24L (A0I0826-04)												
EPA 6020A												
Arsenic	**3.06**	0.627	1.25	mg/kg dry	10	---	4.04	---	---	**28**	**20%**	Q-05
Cadmium	ND	0.125	0.251	mg/kg dry	10	---	ND	---	---	---	20%	
Copper	**14.0**	1.25	2.51	mg/kg dry	10	---	16.5	---	---	16	20%	
Lead	**5.93**	0.125	0.251	mg/kg dry	10	---	6.19	---	---	4	20%	
Mercury	ND	0.0501	0.100	mg/kg dry	10	---	0.117	---	---	***	**20%**	Q-05
Zinc	**43.8**	2.51	5.01	mg/kg dry	10	---	53.1	---	---	19	20%	
Matrix Spike (0100258-MS1)			Prepared: 10/08/20 08:34		Analyzed: 10/09/20 15:37							
QC Source Sample: T4RB-24L (A0I0826-04)												
EPA 6020A												
Arsenic	55.0	0.593	1.19	mg/kg dry	10	59.3	4.04	86	75-125%	---	---	
Cadmium	53.6	0.119	0.237	mg/kg dry	10	59.3	ND	90	75-125%	---	---	
Copper	73.2	1.19	2.37	mg/kg dry	10	59.3	16.5	96	75-125%	---	---	

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100258 - EPA 3051A							**Soil**					
Matrix Spike (0100258-MS1)			Prepared: 10/08/20 08:34		Analyzed: 10/09/20 15:37							
QC Source Sample: T4RB-24L (A0I0826-04)												
Lead	60.5	0.119	0.237	mg/kg dry	10	59.3	6.19	92	75-125%	---	---	
Mercury	1.13	0.0474	0.0948	mg/kg dry	10	1.19	0.117	85	75-125%	---	---	
Zinc	105	2.37	4.74	mg/kg dry	10	59.3	53.1	88	75-125%	---	---	

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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 0100057 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100057-DUP1)			Prepared: 10/02/20 09:11		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0H0224-03)												
% Solids	**85.3**	---	1.00	%	1	---	85.2	---	---	0.1	10%	
Duplicate (0100057-DUP2)			Prepared: 10/02/20 09:11		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0I0783-24)												
% Solids	**96.1**	---	1.00	%	1	---	96.2	---	---	0.07	10%	
Duplicate (0100057-DUP3)			Prepared: 10/02/20 09:11		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0I0786-07)												
% Solids	**76.4**	---	1.00	%	1	---	76.9	---	---	0.7	10%	
Duplicate (0100057-DUP4)			Prepared: 10/02/20 09:11		Analyzed: 10/05/20 08:51							
QC Source Sample: T4RB-28L (A0I0826-13)												
EPA 8000D												
% Solids	**89.9**	---	1.00	%	1	---	90.1	---	---	0.2	10%	
Duplicate (0100057-DUP5)			Prepared: 10/02/20 09:11		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0I0833-08)												
% Solids	**76.2**	---	1.00	%	1	---	79.0	---	---	4	10%	
Duplicate (0100057-DUP6)			Prepared: 10/02/20 18:21		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0J0024-01)												
% Solids	**78.4**	---	1.00	%	1	---	78.1	---	---	0.4	10%	
Duplicate (0100057-DUP7)			Prepared: 10/02/20 18:21		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0J0024-10)												
% Solids	**80.6**	---	1.00	%	1	---	79.8	---	---	0.9	10%	
Duplicate (0100057-DUP8)			Prepared: 10/02/20 18:21		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0J0083-01)												
% Solids	**86.0**	---	1.00	%	1	---	85.1	---	---	1	10%	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

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 0100057 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100057-DUP9)			Prepared: 10/02/20 18:21		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0J0097-10)												
% Solids	**93.3**	---	1.00	%	1	---	93.0	---	---	0.3	10%	
Duplicate (0100057-DUPA)			Prepared: 10/02/20 18:21		Analyzed: 10/05/20 08:51							
QC Source Sample: Non-SDG (A0J0097-20)												
% Solids	**87.5**	---	1.00	%	1	---	88.8	---	---	2	10%	

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

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Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0351 - EPA 3546 (Microwave)							**Solid**					
Blank (BIJ0351-BLK1)			Prepared: 10/12/20 11:20 Analyzed: 10/20/20 15:45									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.450	3.86	ug/kg wet	1	---	---	---	---	---	---	U
Surr: Tripentyltin			*Recovery: 81.5 %*	*Limits: 30-160 %*			*Dilution: 1x*					
Tripropyltin			*68.7 %*	*30-160 %*			*"*					
LCS (BIJ0351-BS1)			Prepared: 10/12/20 11:20 Analyzed: 10/20/20 16:01									
EPA 8270E-SIM												
Tributyltin Ion	36.8	0.450	3.86	ug/kg wet	1	44.554	---	82.6	30-160%	---	---	
Surr: Tripentyltin			*Recovery: 86.2 %*	*Limits: 30-160 %*			*Dilution: 1x*					
Tripropyltin			*74.9 %*	*30-160 %*			*"*					

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100178							
A0I0826-01	Soil	NWTPH-Dx	09/28/20 11:50	10/06/20 12:45	10.26g/5mL	10g/5mL	0.98
A0I0826-02	Soil	NWTPH-Dx	09/28/20 12:15	10/06/20 12:45	10.58g/5mL	10g/5mL	0.95
A0I0826-03	Soil	NWTPH-Dx	09/28/20 12:35	10/06/20 12:45	10.85g/5mL	10g/5mL	0.92
A0I0826-04	Soil	NWTPH-Dx	09/28/20 12:50	10/06/20 12:45	10.11g/5mL	10g/5mL	0.99
A0I0826-05	Soil	NWTPH-Dx	09/28/20 13:30	10/06/20 12:45	10.62g/5mL	10g/5mL	0.94
A0I0826-06	Soil	NWTPH-Dx	09/28/20 13:40	10/06/20 12:45	10.71g/5mL	10g/5mL	0.93
A0I0826-07	Soil	NWTPH-Dx	09/28/20 14:40	10/06/20 12:45	10.8g/5mL	10g/5mL	0.93
A0I0826-08	Soil	NWTPH-Dx	09/28/20 14:30	10/06/20 12:45	10.27g/5mL	10g/5mL	0.97
A0I0826-09	Soil	NWTPH-Dx	09/28/20 15:35	10/06/20 12:45	10.15g/5mL	10g/5mL	0.99
A0I0826-10	Soil	NWTPH-Dx	09/28/20 15:20	10/06/20 12:45	10.32g/5mL	10g/5mL	0.97
A0I0826-11	Soil	NWTPH-Dx	09/28/20 13:40	10/06/20 12:45	10.04g/5mL	10g/5mL	1.00
A0I0826-12	Soil	NWTPH-Dx	09/29/20 10:55	10/06/20 12:45	10.55g/5mL	10g/5mL	0.95
A0I0826-13	Soil	NWTPH-Dx	09/29/20 10:25	10/06/20 12:45	10.41g/5mL	10g/5mL	0.96
A0I0826-14RE1	Soil	NWTPH-Dx	09/29/20 11:30	10/06/20 12:45	10.29g/5mL	10g/5mL	0.97
A0I0826-15	Soil	NWTPH-Dx	09/29/20 11:50	10/06/20 12:45	10.31g/5mL	10g/5mL	0.97
Batch: 0100187							
A0I0826-16	Soil	NWTPH-Dx	09/29/20 13:00	10/06/20 15:37	10.09g/5mL	10g/5mL	0.99
A0I0826-18	Soil	NWTPH-Dx	09/29/20 13:45	10/06/20 15:37	10.55g/5mL	10g/5mL	0.95

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100311							
A0I0826-02	Soil	5035A/8260D	09/28/20 12:15	09/28/20 12:15	4.37g/5mL	5g/5mL	1.14
A0I0826-05	Soil	5035A/8260D	09/28/20 13:30	09/28/20 13:30	4.26g/5mL	5g/5mL	1.17
A0I0826-12	Soil	5035A/8260D	09/29/20 10:55	09/29/20 10:55	3.3g/5mL	5g/5mL	1.52

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100360							
A0I0826-01	Soil	EPA 8082A	09/28/20 11:50	10/12/20 07:15	10.28g/2mL	10g/2mL	0.97
A0I0826-02	Soil	EPA 8082A	09/28/20 12:15	10/12/20 07:15	10.36g/2mL	10g/2mL	0.97
A0I0826-03	Soil	EPA 8082A	09/28/20 12:35	10/12/20 07:15	10.01g/2mL	10g/2mL	1.00

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0I0826-04	Soil	EPA 8082A	09/28/20 12:50	10/12/20 07:15	10.36g/2mL	10g/2mL	0.97
A0I0826-05	Soil	EPA 8082A	09/28/20 13:30	10/12/20 07:15	10.28g/2mL	10g/2mL	0.97
A0I0826-06	Soil	EPA 8082A	09/28/20 13:40	10/12/20 07:15	10.46g/2mL	10g/2mL	0.96
A0I0826-07	Soil	EPA 8082A	09/28/20 14:40	10/12/20 07:15	10.25g/2mL	10g/2mL	0.98
A0I0826-08	Soil	EPA 8082A	09/28/20 14:30	10/12/20 07:15	10.37g/2mL	10g/2mL	0.96
A0I0826-11	Soil	EPA 8082A	09/28/20 13:40	10/12/20 07:15	10.17g/2mL	10g/2mL	0.98
A0I0826-12RE1	Soil	EPA 8082A	09/29/20 10:55	10/12/20 07:15	10.03g/2mL	10g/2mL	1.00
A0I0826-16	Soil	EPA 8082A	09/29/20 13:00	10/12/20 07:15	10.22g/2mL	10g/2mL	0.98
A0I0826-18	Soil	EPA 8082A	09/29/20 13:45	10/12/20 07:15	10.11g/2mL	10g/2mL	0.99

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100347							
A0I0826-01RE1	Soil	EPA 8081B	09/28/20 11:50	10/09/20 10:41	10.25g/10mL	10g/5mL	1.95
A0I0826-02RE1	Soil	EPA 8081B	09/28/20 12:15	10/09/20 10:41	10.36g/10mL	10g/5mL	1.93
A0I0826-03RE1	Soil	EPA 8081B	09/28/20 12:35	10/09/20 10:41	10.1g/10mL	10g/5mL	1.98
A0I0826-04RE1	Soil	EPA 8081B	09/28/20 12:50	10/09/20 10:41	10.01g/10mL	10g/5mL	2.00
A0I0826-05RE1	Soil	EPA 8081B	09/28/20 13:30	10/09/20 10:41	10.36g/10mL	10g/5mL	1.93
A0I0826-06RE1	Soil	EPA 8081B	09/28/20 13:40	10/09/20 10:41	10.25g/10mL	10g/5mL	1.95
A0I0826-07RE1	Soil	EPA 8081B	09/28/20 14:40	10/09/20 10:41	10.31g/10mL	10g/5mL	1.94
A0I0826-08RE1	Soil	EPA 8081B	09/28/20 14:30	10/09/20 10:41	10.2g/10mL	10g/5mL	1.96

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100400							
A0I0826-11RE1	Soil	EPA 8081B	09/28/20 13:40	10/10/20 09:56	10.92g/10mL	10g/5mL	1.83
A0I0826-12RE1	Soil	EPA 8081B	09/29/20 10:55	10/10/20 09:56	10.51g/10mL	10g/5mL	1.90
A0I0826-12RE2	Soil	EPA 8081B	09/29/20 10:55	10/10/20 09:56	10.51g/10mL	10g/5mL	1.90

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100353							
A0I0826-01RE1	Soil	EPA 8270E	09/28/20 11:50	10/10/20 09:20	15.08g/2mL	15g/2mL	1.00

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0I0826-02RE1	Soil	EPA 8270E	09/28/20 12:15	10/10/20 09:20	15.09g/2mL	15g/2mL	0.99
A0I0826-03RE1	Soil	EPA 8270E	09/28/20 12:35	10/10/20 09:20	15.03g/2mL	15g/2mL	1.00
A0I0826-04RE2	Soil	EPA 8270E	09/28/20 12:50	10/10/20 09:20	15.14g/2mL	15g/2mL	0.99
A0I0826-05RE1	Soil	EPA 8270E	09/28/20 13:30	10/10/20 09:20	15.45g/2mL	15g/2mL	0.97
A0I0826-06RE1	Soil	EPA 8270E	09/28/20 13:40	10/10/20 09:20	15.18g/2mL	15g/2mL	0.99
A0I0826-07	Soil	EPA 8270E	09/28/20 14:40	10/10/20 09:20	15.16g/2mL	15g/2mL	0.99
A0I0826-08	Soil	EPA 8270E	09/28/20 14:30	10/10/20 09:20	15.29g/2mL	15g/2mL	0.98
A0I0826-11	Soil	EPA 8270E	09/28/20 13:40	10/10/20 09:20	15.52g/2mL	15g/2mL	0.97
A0I0826-12	Soil	EPA 8270E	09/29/20 10:55	10/10/20 09:20	15.47g/2mL	15g/2mL	0.97

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100258							
A0I0826-01	Soil	EPA 6020A	09/28/20 11:50	10/08/20 08:34	0.478g/50mL	0.5g/50mL	1.05
A0I0826-01RE1	Soil	EPA 6020A	09/28/20 11:50	10/08/20 08:34	0.478g/50mL	0.5g/50mL	1.05
A0I0826-02	Soil	EPA 6020A	09/28/20 12:15	10/08/20 08:34	0.457g/50mL	0.5g/50mL	1.09
A0I0826-02RE1	Soil	EPA 6020A	09/28/20 12:15	10/08/20 08:34	0.457g/50mL	0.5g/50mL	1.09
A0I0826-03	Soil	EPA 6020A	09/28/20 12:35	10/08/20 08:34	0.457g/50mL	0.5g/50mL	1.09
A0I0826-04	Soil	EPA 6020A	09/28/20 12:50	10/08/20 08:34	0.499g/50mL	0.5g/50mL	1.00
A0I0826-05	Soil	EPA 6020A	09/28/20 13:30	10/08/20 08:34	0.482g/50mL	0.5g/50mL	1.04
A0I0826-06	Soil	EPA 6020A	09/28/20 13:40	10/08/20 08:34	0.454g/50mL	0.5g/50mL	1.10
A0I0826-07	Soil	EPA 6020A	09/28/20 14:40	10/08/20 08:34	0.453g/50mL	0.5g/50mL	1.10
A0I0826-08	Soil	EPA 6020A	09/28/20 14:30	10/08/20 08:34	0.491g/50mL	0.5g/50mL	1.02
A0I0826-11	Soil	EPA 6020A	09/28/20 13:40	10/08/20 08:34	0.499g/50mL	0.5g/50mL	1.00
A0I0826-12	Soil	EPA 6020A	09/29/20 10:55	10/08/20 08:34	0.502g/50mL	0.5g/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100057							
A0I0826-01	Soil	EPA 8000D	09/28/20 11:50	10/02/20 09:11			NA
A0I0826-02	Soil	EPA 8000D	09/28/20 12:15	10/02/20 09:11			NA
A0I0826-03	Soil	EPA 8000D	09/28/20 12:35	10/02/20 09:11			NA
A0I0826-04	Soil	EPA 8000D	09/28/20 12:50	10/02/20 09:11			NA

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0I0826-05	Soil	EPA 8000D	09/28/20 13:30	10/02/20 09:11			NA
A0I0826-06	Soil	EPA 8000D	09/28/20 13:40	10/02/20 09:11			NA
A0I0826-07	Soil	EPA 8000D	09/28/20 14:40	10/02/20 09:11			NA
A0I0826-08	Soil	EPA 8000D	09/28/20 14:30	10/02/20 09:11			NA
A0I0826-09	Soil	EPA 8000D	09/28/20 15:35	10/02/20 09:11			NA
A0I0826-10	Soil	EPA 8000D	09/28/20 15:20	10/02/20 09:11			NA
A0I0826-11	Soil	EPA 8000D	09/28/20 13:40	10/02/20 09:11			NA
A0I0826-12	Soil	EPA 8000D	09/29/20 10:55	10/02/20 09:11			NA
A0I0826-13	Soil	EPA 8000D	09/29/20 10:25	10/02/20 09:11			NA
A0I0826-14	Soil	EPA 8000D	09/29/20 11:30	10/02/20 09:11			NA
A0I0826-15	Soil	EPA 8000D	09/29/20 11:50	10/02/20 09:11			NA
A0I0826-16	Soil	EPA 8000D	09/29/20 13:00	10/02/20 09:11			NA
A0I0826-18	Soil	EPA 8000D	09/29/20 13:45	10/02/20 09:11			NA

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Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Butyl Tins

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0351							
A0I0826-02	Soil	EPA 8270E-SIM	09/28/20 12:15	10/12/20 11:20	5.45g/0.5mL	5g/0.5mL	0.92
A0I0826-05	Soil	EPA 8270E-SIM	09/28/20 13:30	10/12/20 11:20	5.27g/0.5mL	5g/0.5mL	0.95
A0I0826-12	Soil	EPA 8270E-SIM	09/29/20 10:55	10/12/20 11:20	6.58g/0.5mL	5g/0.5mL	0.76

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QUALIFIER DEFINITIONS

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

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A-01	Surrogate for sample duplicate passes acceptance criteria. See duplicate results.
B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
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-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
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-15	Results for diesel are estimated due to overlap from the reported oil result.
F-16	Results for oil are estimated due to overlap from the reported diesel result.
F-17	No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
Ja	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.
Q-02	Spike recovery is outside of established control limits due to matrix interference.
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-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
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-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -23%. 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.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-03	Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.

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S-04 Surrogate recovery is outside of established control limits due to a 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.

Analytical Resources, Inc.

U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

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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.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

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

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

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

Soil and Sediment Samples:

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

Sampling and Preservation Notes:

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

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

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

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

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LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



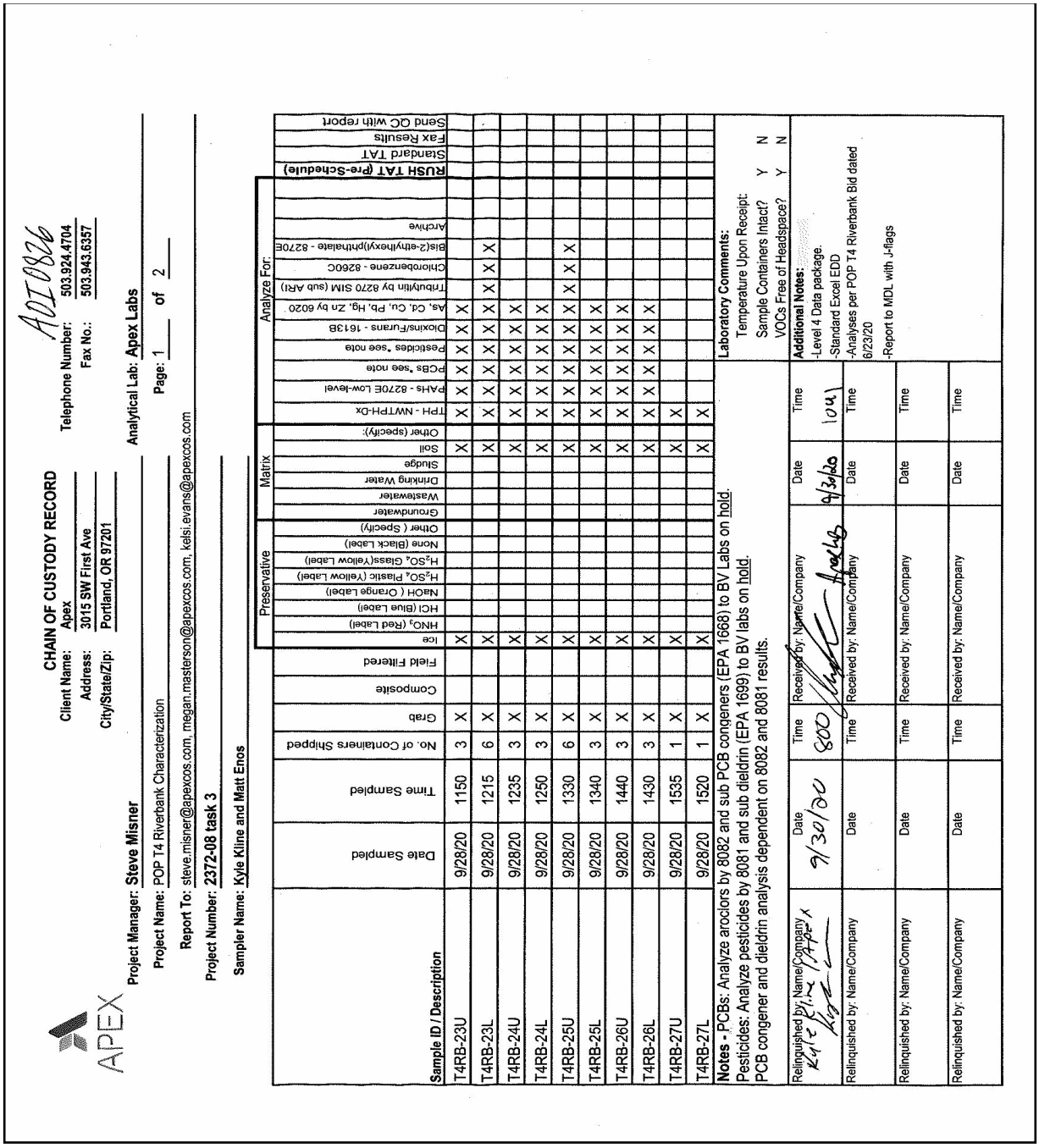
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CHAIN OF CUSTODY RECORD

A0I0826

Client Name: Apex — Telephone Number: 503.924.4704
Address: 3015 SW First Ave — Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 — Page: 1 of 2

Analytical Lab: Apex Labs

Project Manager: Steve Misner
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-23U	9/28/20	1150	3	X			X												X		X	X	X	X	X	X	X						
T4RB-23L	9/28/20	1215	6	X			X												X		X	X	X	X	X	X	X	X	X				
T4RB-24U	9/28/20	1235	3	X			X												X		X	X	X	X	X	X	X						
T4RB-24L	9/28/20	1250	3	X			X												X		X	X	X	X	X	X	X						
T4RB-25U	9/28/20	1330	6	X			X												X		X	X	X	X	X	X	X	X	X				
T4RB-25L	9/28/20	1340	3	X			X												X		X	X	X	X	X	X	X						
T4RB-26U	9/28/20	1440	3	X			X												X		X	X	X	X	X	X	X						
T4RB-26L	9/28/20	1430	3	X			X												X		X	X	X	X	X	X	X						
T4RB-27U	9/28/20	1535	1	X			X												X		X	X	X										
T4RB-27L	9/28/20	1520	1	X			X												X		X	X	X										

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline / Apex	9/30/20	800		9/30/20	1041
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

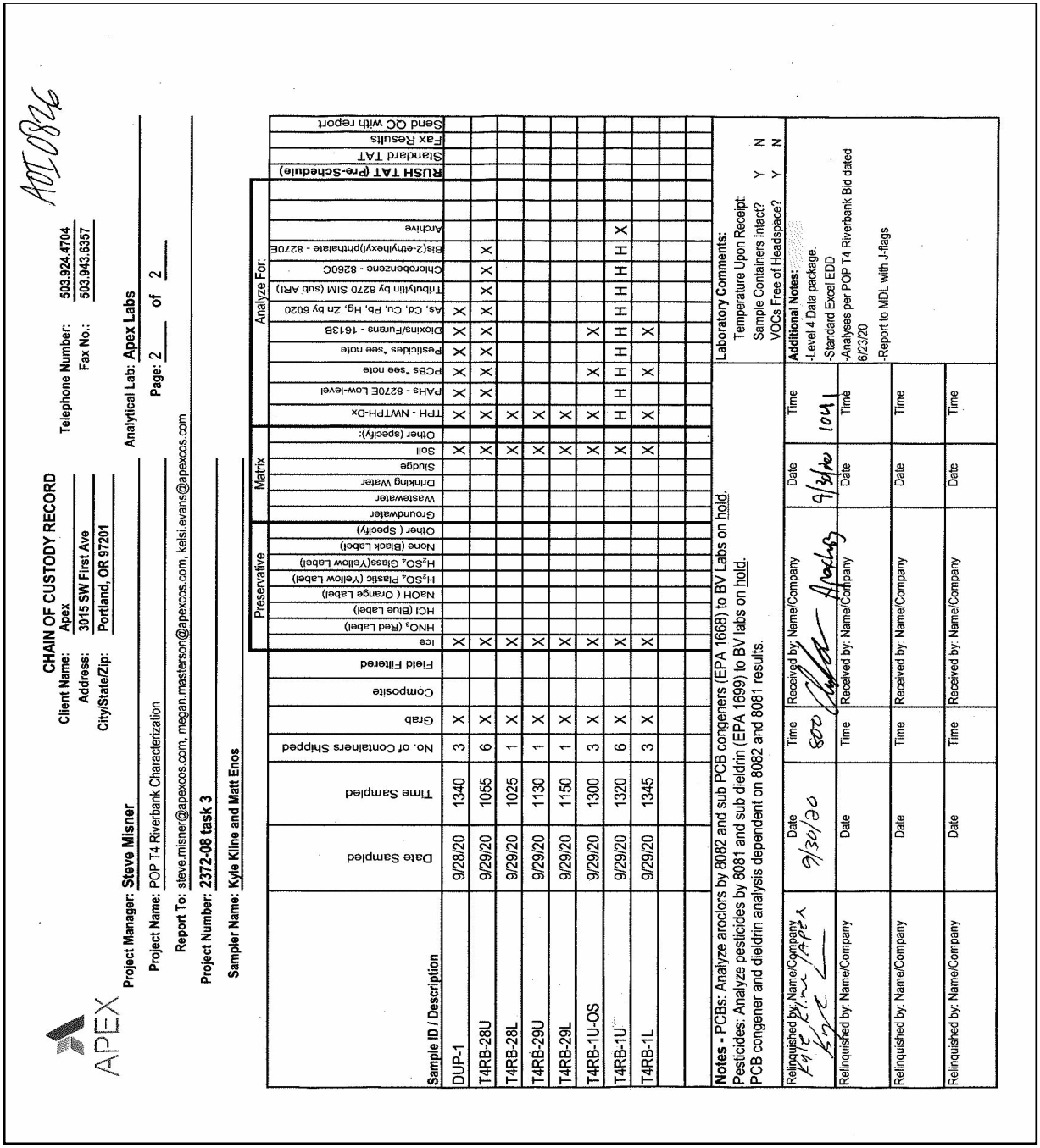
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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**



APEX LABORATORIES

CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 | Analytical Lab: Apex Labs

Project Manager: Steve Misner | Page: 2 of 2
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

A0I0826

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ART)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
DUP-1	9/28/20	1340	3	X			X												X		X	X	X	X	X	X	X						
T4RB-28U	9/29/20	1055	6	X			X												X		X	X	X	X	X	X	X	X	X				
T4RB-28L	9/29/20	1025	1	X			X												X		X						X						
T4RB-29U	9/29/20	1130	1	X			X												X		X						X						
T4RB-29L	9/29/20	1150	1	X			X												X		X						X						
T4RB-1U-OS	9/29/20	1300	3	X			X												X		X		X										
T4RB-1U	9/29/20	1320	6	X			X												X		H	H	H	H	H	H	H	H	X				
T4RB-1L	9/29/20	1345	3	X			X												X		X		X										

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline / Apex	9/30/20	800		9/30/20	1041
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0I0826 - 11 06 20 1536**

APEX LABS COOLER RECEIPT FORM

Client: ApexCo Element WO#: A0 I0826

Project/Project #: Pop T4 Riverbank Characterization 2732-08 task 3

Delivery Info:

Date/time received: 9/30/20 @ 1041 By: CFH

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

Cooler Inspection Date/time inspected: 9/30/20 @ 1210 By: CFH

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.6	2.2					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	N/A	Y					
Ice type: (Gel/Real/Other)	Real →						
Condition:	Good →						

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

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

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

Samples Inspection: Date/time inspected: 9/30/20 @ 13:00 By: [illegible]

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

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

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

Comments ___

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

Comments: ___

Additional information: ___

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

21 October 2020

Darwin Thomas
Apex Laboratories LLC
12232 SW Garden Place
Tigard, OR 97223

RE: A0I0826

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20J0057	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

SUBCONTRACT ORDER

Apex Laboratories

ARI Job #: 20J0057 9/30/20 **A0I0826**

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

UKK 10/5/20

Sample Name: A0I0826-02 **Soil** **Sampled: 09/28/20 12:15** (T4RB-23L)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/20/20 17:00	10/12/20 12:15	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0I0826-05 **Soil** **Sampled: 09/28/20 13:30** (T4RB-25U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/20/20 17:00	10/12/20 13:30	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0I0826-12 **Soil** **Sampled: 09/29/20 10:55** (T4RB-28U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/20/20 17:00	10/13/20 10:55	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Standard TAT

Released By	Date	Received By	Date
10/5/20		UPS (Shipper)	
UPS (Shipper)		10/6/2020	
Released By	Date	Received By	Date

Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A0I0826-02	20J0057-01	Solid	28-Sep-2020 12:15	06-Oct-2020 09:40
A0I0826-05	20J0057-02	Solid	28-Sep-2020 13:30	06-Oct-2020 09:40
A0I0826-12	20J0057-03	Solid	29-Sep-2020 10:55	06-Oct-2020 09:40

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Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received 06-Oct-2020 09:40 under ARI work order 20J0057. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The samples were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex Labs | Project Name: AOI0826

COC No(s): _____ NA | Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20J0057 | Tracking No: 12X47 20R 0190837533 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 0940	4.3					

If cooler temperature is out of compliance fill out form 00070F | Temp Gun ID#: DOO52O6

Cooler Accepted by: SC Date: 10/6/2020 Time: 0940

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO SC
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Trash Bags		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: SC Date: 10/6/2020 Time: 1022 Labels checked by: SC

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

A0I0826-02

20J0057-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/28/2020 12:15

Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 16:51

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0057-01 A 01
	Preparation Batch: BIJ0351	Sample Size: 5.45 g (wet)	Dry Weight:5.05 g
	Prepared: 10/12/2020	Final Volume: 0.5 mL	% Solids: 92.67
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0057-01 A 01
	Cleanup Batch: CIJ0170	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.445	3.82	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*67.1*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*65.2*	*%*	

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Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

A0I0826-05

20J0057-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/28/2020 13:30
Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 17:08

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0057-02 A 01
	Preparation Batch: BIJ0351	Sample Size: 5.27 g (wet)	Dry Weight:5.05 g
	Prepared: 10/12/2020	Final Volume: 0.5 mL	% Solids: 95.81
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0057-02 A 01
	Cleanup Batch: CIJ0170	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.446	3.82	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*51.8*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*46.4*	*%*	

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Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

A0I0826-12

20J0057-03 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/29/2020 10:55
Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 17:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0057-03 A 01
	Preparation Batch: BIJ0351	Sample Size: 6.58 g (wet)	Dry Weight:5.04 g
	Prepared: 10/12/2020	Final Volume: 0.5 mL	% Solids: 76.63
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0057-03 A 01
	Cleanup Batch: CIJ0170	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.446	3.83	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*44.1*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*39.2*	*%*	

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Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

Butyl Tins - Quality Control

Batch BIJ0351 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0351-BLK1)					Prepared: 12-Oct-2020 Analyzed: 20-Oct-2020 15:45						
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Surrogate: Tripentyltin	36.8			ug/kg	*45.2*		*81.5*	*30-160*			
Surrogate: Tripropyltin	30.0			ug/kg	*43.7*		*68.7*	*30-160*			
LCS (BIJ0351-BS1)					Prepared: 12-Oct-2020 Analyzed: 20-Oct-2020 16:01						
Tributyltin Ion	36.8	0.450	3.86	ug/kg	44.6		82.6	30-160			
Surrogate: Tripentyltin	38.9			ug/kg	*45.2*		*86.2*	*30-160*			
Surrogate: Tripropyltin	32.7			ug/kg	*43.7*		*74.9*	*30-160*			

Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Butyltin Ion	WADOE
Butyltin Ion	
Butyltin Ion	WADOE
Butyltin Ion	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Apex Laboratories LLC	Project: A0I0826	
12232 SW Garden Place	Project Number: A0I0826	**Reported:**
Tigard OR, 97223	Project Manager: Darwin Thomas	21-Oct-2020 13:11

Notes and Definitions

*	Flagged value is not within established control limits.
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Your Project #: A0I0826
Your C.O.C. #: na

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2021/02/24
Report #: R6530984
Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C0Q2499
Received: 2020/10/07, 12:28

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	7	2020/10/20	2020/11/02	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	5	2020/10/20	2020/11/03	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	2	2020/10/20	2020/11/03	BRL SOP-00406	EPA M8290A / M1613
Moisture	12	N/A	2020/10/15	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides in Soil by GCTQ	1	2021/01/14	2021/01/17	BRL SOP-00014	EPA Method 1699m
OC Pesticides in Soil by GCTQ	1	2020/12/23	2020/12/23	BRL SOP-00014	EPA Method 1699m
PCB Congeners in Soil (1668C) (2)	1	2021/01/14	2021/02/10	BRL SOP-00408	EPA 1668C m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(2) Soils are reported on a dry weight basis unless otherwise specified.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bureauveritas.com
Phone# (905) 817-5700

==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NVE703			NVE703	NVE704	NVE705	NVE706			
Sampling Date		2020/09/28 11:50			2020/09/28 11:50	2020/09/28 12:15	2020/09/28 12:35	2020/09/28 12:50			
COC Number		na			na	na	na	na			
	UNITS	T4RB-23U	RDL	MDL	T4RB-23U Lab-Dup	T4RB-23L	T4RB-24U	T4RB-24L	RDL	MDL	QC Batch
Moisture	%	9.7	1.0	0.50	10	15	16	15	1.0	0.50	7002150
Dieldrin	ng/g	0.036 U (1)	0.053	0.036	0.054 U (1)	N/A	N/A	N/A	0.054	0.054	7150233
Surrogate Recovery (%)											
13C10-cis Nonachlor	%	29 (2)	N/A	N/A	26 (2)	N/A	N/A	N/A	N/A	N/A	7150233
13C10-Heptachlor	%	85	N/A	N/A	84	N/A	N/A	N/A	N/A	N/A	7150233
13C10-Heptachlor Epoxide	%	68	N/A	N/A	65	N/A	N/A	N/A	N/A	N/A	7150233
13C10-Oxychlordane	%	67	N/A	N/A	64	N/A	N/A	N/A	N/A	N/A	7150233
13C10-trans Nonachlor	%	49	N/A	N/A	48	N/A	N/A	N/A	N/A	N/A	7150233
13C12-Endrin	%	40	N/A	N/A	37	N/A	N/A	N/A	N/A	N/A	7150233
13C12-Endrin Ketone	%	15 (2)	N/A	N/A	13 (2)	N/A	N/A	N/A	N/A	N/A	7150233
13C6-beta BHC	%	78	N/A	N/A	93	N/A	N/A	N/A	N/A	N/A	7150233
13C6-d6-gamma BHC (Lindane)	%	90	N/A	N/A	94	N/A	N/A	N/A	N/A	N/A	7150233
13C-Methoxychlor	%	35	N/A	N/A	36	N/A	N/A	N/A	N/A	N/A	7150233
13C-pp-DDD	%	26	N/A	N/A	23	N/A	N/A	N/A	N/A	N/A	7150233
13C-pp-DDE	%	41 (3)	N/A	N/A	38 (3)	N/A	N/A	N/A	N/A	N/A	7150233
13C-pp-DDT	%	15	N/A	N/A	14	N/A	N/A	N/A	N/A	N/A	7150233
C13-Hexachlorobenzene	%	96	N/A	N/A	98	N/A	N/A	N/A	N/A	N/A	7150233

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(3) Dieldrin surrogate 13C-pp-DDE was below surrogate criteria due to matrix interferences.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NVE707	NVE707	NVE708	NVE709	NVE710	NVE711			
Sampling Date		2020/09/28 13:30	2020/09/28 13:30	2020/09/28 13:40	2020/09/28 14:40	2020/09/28 14:30	2020/09/28 13:40			
COC Number		na	na	na	na	na	na			
	UNITS	T4RB-25U	T4RB-25U Lab-Dup	T4RB-25L	T4RB-26U	T4RB-26L	DUP-1	RDL	MDL	QC Batch
Moisture	%	9.3	N/A	23	16	18	22	1.0	0.50	7002150
Dieldrin	ng/g	0.025 U	0.025 U	N/A	N/A	N/A	N/A	0.052	0.025	7124581
Surrogate Recovery (%)										
13C10-cis Nonachlor	%	86	75	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C10-Heptachlor	%	78	87	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C10-Heptachlor Epoxide	%	76	78	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C10-Oxychlordane	%	75	79	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C10-trans Nonachlor	%	90	84	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C12-Endrin	%	83	75	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C12-Endrin Ketone	%	77	61	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C6-beta BHC	%	81	78	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C6-d6-gamma BHC (Lindane)	%	76	70	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C-Methoxychlor	%	71	66	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C-pp-DDD	%	76	68	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C-pp-DDE	%	75	71	N/A	N/A	N/A	N/A	N/A	N/A	7124581
13C-pp-DDT	%	62	50	N/A	N/A	N/A	N/A	N/A	N/A	7124581
C13-Hexachlorobenzene	%	53	60	N/A	N/A	N/A	N/A	N/A	N/A	7124581

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

BV Labs ID		NVE712	NVE713	NVE714			
Sampling Date		2020/09/28 10:55	2020/09/29 13:00	2020/09/29 13:45			
COC Number		na	na	na			
	UNITS	T4RB-28U	T4RB-1U-OS	T4RB-1L	RDL	MDL	QC Batch
Moisture	%	24	21	23	1.0	0.50	7002150

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE703							
Sampling Date		2020/09/28 11:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-23U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.103 U	0.103	0.999	0.0400	1.00	0.103	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.294 J	0.109	5.00	0.0400	1.00	0.294	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.375 J	0.112	5.00	0.0400	0.100	0.0375	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	2.93 J	0.113	5.00	0.0400	0.100	0.293	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	1.44 J	0.119	5.00	0.0400	0.100	0.144	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	171	0.117	5.00	0.0400	0.0100	1.71	N/A	7030322
Octa CDD *	pg/g	2190	0.106	9.99	0.0799	0.000300	0.657	N/A	7030322
Total Tetra CDD *	pg/g	0.121 J	0.103	0.999	0.0400	N/A	N/A	1	7030322
Total Penta CDD *	pg/g	0.808 J	0.109	5.00	0.0400	N/A	N/A	3	7030322
Total Hexa CDD *	pg/g	18.7	0.116	5.00	0.0400	N/A	N/A	7	7030322
Total Hepta CDD *	pg/g	384	0.117	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.333 J	0.112	0.999	0.0400	0.100	0.0333	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.480 J	0.111	5.00	0.0400	0.0300	0.0144	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	2.45 J	0.102	5.00	0.0400	0.300	0.735	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	9.84	0.106	5.00	0.0400	0.100	0.984	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	2.29 J	0.109	5.00	0.0400	0.100	0.229	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	1.59 J	0.103	5.00	0.0400	0.100	0.159	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.110 U	0.110	5.00	0.0400	0.100	0.0110	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	24.2	0.115	5.00	0.0400	0.0100	0.242	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.61 J	0.111	5.00	0.0400	0.0100	0.0261	N/A	7030322
Octa CDF **	pg/g	94.8	0.113	9.99	0.0799	0.000300	0.0284	N/A	7030322
Total Tetra CDF **	pg/g	8.54	0.112	0.999	0.0400	N/A	N/A	6	7030322
Total Penta CDF **	pg/g	65.3	0.106	5.00	0.0400	N/A	N/A	9	7030322
Total Hexa CDF **	pg/g	78.3	0.107	5.00	0.0400	N/A	N/A	9	7030322
Total Hepta CDF **	pg/g	107	0.113	5.00	0.0400	N/A	N/A	3	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	5.70	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE703							
Sampling Date		2020/09/28 11:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-23U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE704							
Sampling Date		2020/09/28 12:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-23L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.110 U	0.110	0.999	0.0400	1.00	0.110	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.114 U	0.114	5.00	0.0400	1.00	0.114	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.227 J	0.115	5.00	0.0400	0.100	0.0227	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	3.83 J	0.116	5.00	0.0400	0.100	0.383	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.958 J	0.122	5.00	0.0400	0.100	0.0958	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	126	0.104	5.00	0.0400	0.0100	1.26	N/A	7030322
Octa CDD *	pg/g	1140	0.104	9.99	0.0799	0.000300	0.342	N/A	7030322
Total Tetra CDD *	pg/g	0.110 U	0.110	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.114 U	0.114	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	13.0	0.119	5.00	0.0400	N/A	N/A	5	7030322
Total Hepta CDD *	pg/g	229	0.104	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.213 J	0.105	0.999	0.0400	0.100	0.0213	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.930 J	0.116	5.00	0.0400	0.0300	0.0279	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	4.66 J	0.106	5.00	0.0400	0.300	1.40	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	25.9	0.107	5.00	0.0400	0.100	2.59	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	3.69 J	0.110	5.00	0.0400	0.100	0.369	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	1.31 J	0.103	5.00	0.0400	0.100	0.131	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.172 U (1)	0.172	5.00	0.0400	0.100	0.0172	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	40.5	0.104	5.00	0.0400	0.0100	0.405	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	5.28	0.100	5.00	0.0400	0.0100	0.0528	N/A	7030322
Octa CDF **	pg/g	117	0.116	9.99	0.0799	0.000300	0.0351	N/A	7030322
Total Tetra CDF **	pg/g	0.757 J	0.105	0.999	0.0400	N/A	N/A	4	7030322
Total Penta CDF **	pg/g	39.9	0.111	5.00	0.0400	N/A	N/A	8	7030322
Total Hexa CDF **	pg/g	123	0.107	5.00	0.0400	N/A	N/A	10	7030322
Total Hepta CDF **	pg/g	180	0.102	5.00	0.0400	N/A	N/A	4	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	7.38	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE704							
Sampling Date		2020/09/28 12:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-23L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE705							
Sampling Date		2020/09/28 12:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-24U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.118 U	0.118	0.999	0.0400	1.00	0.118	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.110 U	0.110	5.00	0.0400	1.00	0.110	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.105 U	0.105	5.00	0.0400	0.100	0.0105	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	1.80 J	0.106	5.00	0.0400	0.100	0.180	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.359 J	0.112	5.00	0.0400	0.100	0.0359	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	71.8	0.104	5.00	0.0400	0.0100	0.718	N/A	7030322
Octa CDD *	pg/g	811	0.111	9.99	0.0799	0.000300	0.243	N/A	7030322
Total Tetra CDD *	pg/g	0.118 U	0.118	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.110 U	0.110	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	5.48	0.109	5.00	0.0400	N/A	N/A	4	7030322
Total Hepta CDD *	pg/g	119	0.104	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.107 U	0.107	0.999	0.0400	0.100	0.0107	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.372 J	0.114	5.00	0.0400	0.0300	0.0112	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	1.70 J	0.104	5.00	0.0400	0.300	0.510	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	9.21	0.116	5.00	0.0400	0.100	0.921	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	1.32 J	0.119	5.00	0.0400	0.100	0.132	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.443 U (1)	0.443	5.00	0.0400	0.100	0.0443	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.120 U	0.120	5.00	0.0400	0.100	0.0120	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	19.4	0.118	5.00	0.0400	0.0100	0.194	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.34 J	0.114	5.00	0.0400	0.0100	0.0234	N/A	7030322
Octa CDF **	pg/g	74.9	0.111	9.99	0.0799	0.000300	0.0225	N/A	7030322
Total Tetra CDF **	pg/g	0.107 U	0.107	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDF **	pg/g	13.5	0.109	5.00	0.0400	N/A	N/A	8	7030322
Total Hexa CDF **	pg/g	52.8	0.117	5.00	0.0400	N/A	N/A	7	7030322
Total Hepta CDF **	pg/g	105	0.116	5.00	0.0400	N/A	N/A	3	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	3.30	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE705							
Sampling Date		2020/09/28 12:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-24U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	63	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	59	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	63	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE706							
Sampling Date		2020/09/28 12:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-24L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.112 U	0.112	1.00	0.0400	1.00	0.112	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.108 U	0.108	5.00	0.0400	1.00	0.108	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.300 J	0.106	5.00	0.0400	0.100	0.0300	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	19.9	0.106	5.00	0.0400	0.100	1.99	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	1.98 J	0.113	5.00	0.0400	0.100	0.198	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	450	0.114	5.00	0.0400	0.0100	4.50	N/A	7030322
Octa CDD *	pg/g	3330	0.107	10.0	0.0800	0.000300	0.999	N/A	7030322
Total Tetra CDD *	pg/g	0.112 U	0.112	1.00	0.0400	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.108 U	0.108	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	48.1	0.110	5.00	0.0400	N/A	N/A	5	7030322
Total Hepta CDD *	pg/g	731	0.114	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	1.10	0.103	1.00	0.0400	0.100	0.110	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	5.24	0.116	5.00	0.0400	0.0300	0.157	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	32.0	0.106	5.00	0.0400	0.300	9.60	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	154	0.103	5.00	0.0400	0.100	15.4	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	22.1	0.106	5.00	0.0400	0.100	2.21	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	7.70	0.0997	5.00	0.0400	0.100	0.770	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.927 J	0.107	5.00	0.0400	0.100	0.0927	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	209	0.107	5.00	0.0400	0.0100	2.09	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	23.4	0.103	5.00	0.0400	0.0100	0.234	N/A	7030322
Octa CDF **	pg/g	697	0.114	10.0	0.0800	0.000300	0.209	N/A	7030322
Total Tetra CDF **	pg/g	2.35	0.103	1.00	0.0400	N/A	N/A	4	7030322
Total Penta CDF **	pg/g	246	0.111	5.00	0.0400	N/A	N/A	11	7030322
Total Hexa CDF **	pg/g	709	0.104	5.00	0.0400	N/A	N/A	13	7030322
Total Hepta CDF **	pg/g	1020	0.105	5.00	0.0400	N/A	N/A	4	7030322
Confirmation 2,3,7,8-Tetra CDF **	pg/g	1.23	0.12	1.0	0.18	0.100	0.123	N/A	7037564
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	38.8	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE706							
Sampling Date		2020/09/28 12:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-24L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322
Confirmation C13-2378 TetraCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7037564

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE707							
Sampling Date		2020/09/28 13:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-25U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.114 U	0.114	0.999	0.0400	1.00	0.114	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.120 U	0.120	5.00	0.0400	1.00	0.120	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.112 U	0.112	5.00	0.0400	0.100	0.0112	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	0.331 J	0.113	5.00	0.0400	0.100	0.0331	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.170 J	0.120	5.00	0.0400	0.100	0.0170	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	10.5	0.106	5.00	0.0400	0.0100	0.105	N/A	7030322
Octa CDD *	pg/g	101	0.117	9.99	0.0799	0.000300	0.0303	N/A	7030322
Total Tetra CDD *	pg/g	0.114 U	0.114	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.120 U	0.120	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	0.851 J	0.117	5.00	0.0400	N/A	N/A	3	7030322
Total Hepta CDD *	pg/g	19.1	0.106	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.108 U	0.108	0.999	0.0400	0.100	0.0108	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.116 U	0.116	5.00	0.0400	0.0300	0.00348	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	0.397 J	0.106	5.00	0.0400	0.300	0.119	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	1.63 J	0.108	5.00	0.0400	0.100	0.163	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	0.286 J	0.110	5.00	0.0400	0.100	0.0286	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.144 J	0.104	5.00	0.0400	0.100	0.0144	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.111 U	0.111	5.00	0.0400	0.100	0.0111	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	3.19 J	0.102	5.00	0.0400	0.0100	0.0319	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.406 J	0.0984	5.00	0.0400	0.0100	0.00406	N/A	7030322
Octa CDF **	pg/g	14.1	0.115	9.99	0.0799	0.000300	0.00423	N/A	7030322
Total Tetra CDF **	pg/g	0.108 U	0.108	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDF **	pg/g	2.34 J	0.111	5.00	0.0400	N/A	N/A	4	7030322
Total Hexa CDF **	pg/g	7.88	0.108	5.00	0.0400	N/A	N/A	8	7030322
Total Hepta CDF **	pg/g	15.3	0.100	5.00	0.0400	N/A	N/A	3	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.821	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE707							
Sampling Date		2020/09/28 13:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-25U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE708							
Sampling Date		2020/09/28 13:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-25L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.113 U	0.113	0.998	0.0399	1.00	0.113	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.120 U	0.120	4.99	0.0399	1.00	0.120	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.156 J	0.102	4.99	0.0399	0.100	0.0156	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	2.09 J	0.102	4.99	0.0399	0.100	0.209	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.740 J	0.108	4.99	0.0399	0.100	0.0740	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	64.3	0.111	4.99	0.0399	0.0100	0.643	N/A	7030322
Octa CDD *	pg/g	611	0.112	9.98	0.0799	0.000300	0.183	N/A	7030322
Total Tetra CDD *	pg/g	0.144 U (1)	0.144	0.998	0.0399	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.151 J	0.120	4.99	0.0399	N/A	N/A	1	7030322
Total Hexa CDD *	pg/g	8.58	0.105	4.99	0.0399	N/A	N/A	5	7030322
Total Hepta CDD *	pg/g	117	0.111	4.99	0.0399	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.151 J	0.112	0.998	0.0399	0.100	0.0151	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.591 J	0.119	4.99	0.0399	0.0300	0.0177	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	3.53 J	0.109	4.99	0.0399	0.300	1.06	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	20.0	0.104	4.99	0.0399	0.100	2.00	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	2.81 J	0.107	4.99	0.0399	0.100	0.281	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.994 J	0.101	4.99	0.0399	0.100	0.0994	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.112 U (1)	0.112	4.99	0.0399	0.100	0.0112	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	21.8	0.108	4.99	0.0399	0.0100	0.218	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.91 J	0.104	4.99	0.0399	0.0100	0.0291	N/A	7030322
Octa CDF **	pg/g	40.3	0.116	9.98	0.0799	0.000300	0.0121	N/A	7030322
Total Tetra CDF **	pg/g	0.151 J	0.112	0.998	0.0399	N/A	N/A	1	7030322
Total Penta CDF **	pg/g	27.1	0.114	4.99	0.0399	N/A	N/A	9	7030322
Total Hexa CDF **	pg/g	83.0	0.105	4.99	0.0399	N/A	N/A	11	7030322
Total Hepta CDF **	pg/g	85.6	0.106	4.99	0.0399	N/A	N/A	4	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	5.10	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE708							
Sampling Date		2020/09/28 13:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-25L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE708							
Sampling Date		2020/09/28 13:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-25L Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.105 U	0.105	1.00	0.0400	1.00	0.105	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.111 U	0.111	5.00	0.0400	1.00	0.111	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.140 J	0.107	5.00	0.0400	0.100	0.0140	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	2.63 J	0.108	5.00	0.0400	0.100	0.263	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.623 J	0.114	5.00	0.0400	0.100	0.0623	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	70.8	0.113	5.00	0.0400	0.0100	0.708	N/A	7030322
Octa CDD *	pg/g	638	0.114	10.0	0.0800	0.000300	0.191	N/A	7030322
Total Tetra CDD *	pg/g	0.150 J	0.105	1.00	0.0400	N/A	N/A	1	7030322
Total Penta CDD *	pg/g	0.111 U	0.111	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	9.19	0.111	5.00	0.0400	N/A	N/A	6	7030322
Total Hepta CDD *	pg/g	127	0.113	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.199 U (1)	0.199	1.00	0.0400	0.100	0.0199	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.874 J	0.111	5.00	0.0400	0.0300	0.0262	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	4.94 J	0.101	5.00	0.0400	0.300	1.48	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	27.6	0.112	5.00	0.0400	0.100	2.76	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	3.76 J	0.115	5.00	0.0400	0.100	0.376	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	1.45 J	0.108	5.00	0.0400	0.100	0.145	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.177 J	0.116	5.00	0.0400	0.100	0.0177	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	30.4	0.117	5.00	0.0400	0.0100	0.304	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	3.79 J	0.113	5.00	0.0400	0.0100	0.0379	N/A	7030322
Octa CDF **	pg/g	47.3	0.114	10.0	0.0800	0.000300	0.0142	N/A	7030322
Total Tetra CDF **	pg/g	0.185 J	0.109	1.00	0.0400	N/A	N/A	1	7030322
Total Penta CDF **	pg/g	38.2 (2)	0.106	5.00	0.0400	N/A	N/A	8	7030322
Total Hexa CDF **	pg/g	114 (2)	0.113	5.00	0.0400	N/A	N/A	12	7030322
Total Hepta CDF **	pg/g	113 (2)	0.115	5.00	0.0400	N/A	N/A	4	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	6.64	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(2) %RPD exceeds method criteria, possibly due to sample heterogeneity

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE708							
Sampling Date		2020/09/28 13:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-25L Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE709							
Sampling Date		2020/09/28 14:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-26U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.115 U	0.115	0.999	0.0400	1.00	0.115	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.105 U	0.105	5.00	0.0400	1.00	0.105	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.110 U	0.110	5.00	0.0400	0.100	0.0110	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	0.382 J	0.111	5.00	0.0400	0.100	0.0382	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.234 J	0.117	5.00	0.0400	0.100	0.0234	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	16.0	0.107	5.00	0.0400	0.0100	0.160	N/A	7030322
Octa CDD *	pg/g	184	0.108	9.99	0.0800	0.000300	0.0552	N/A	7030322
Total Tetra CDD *	pg/g	0.115 U	0.115	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.105 U	0.105	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	2.41 J	0.114	5.00	0.0400	N/A	N/A	5	7030322
Total Hepta CDD *	pg/g	34.9	0.107	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.107 U	0.107	0.999	0.0400	0.100	0.0107	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.118 U	0.118	5.00	0.0400	0.0300	0.00354	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	0.158 J	0.108	5.00	0.0400	0.300	0.0474	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	0.638 J	0.108	5.00	0.0400	0.100	0.0638	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	0.111 U	0.111	5.00	0.0400	0.100	0.0111	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.105 U	0.105	5.00	0.0400	0.100	0.0105	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.112 U	0.112	5.00	0.0400	0.100	0.0112	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	2.90 J	0.111	5.00	0.0400	0.0100	0.0290	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.201 U (1)	0.201	5.00	0.0400	0.0100	0.00201	N/A	7030322
Octa CDF **	pg/g	19.4	0.113	9.99	0.0800	0.000300	0.00582	N/A	7030322
Total Tetra CDF **	pg/g	0.107 U	0.107	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDF **	pg/g	0.612 J	0.112	5.00	0.0400	N/A	N/A	2	7030322
Total Hexa CDF **	pg/g	3.86 J	0.109	5.00	0.0400	N/A	N/A	4	7030322
Total Hepta CDF **	pg/g	14.1	0.109	5.00	0.0400	N/A	N/A	2	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.703	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE709							
Sampling Date		2020/09/28 14:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-26U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE710							
Sampling Date		2020/09/28 14:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-26L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.111 U	0.111	0.998	0.0399	1.00	0.111	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.116 U	0.116	4.99	0.0399	1.00	0.116	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.111 U	0.111	4.99	0.0399	0.100	0.0111	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	0.588 J	0.112	4.99	0.0399	0.100	0.0588	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.185 J	0.118	4.99	0.0399	0.100	0.0185	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	29.8	0.119	4.99	0.0399	0.0100	0.298	N/A	7030322
Octa CDD *	pg/g	325	0.118	9.98	0.0799	0.000300	0.0975	N/A	7030322
Total Tetra CDD *	pg/g	0.111 U	0.111	0.998	0.0399	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.116 U	0.116	4.99	0.0399	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	2.64 J	0.115	4.99	0.0399	N/A	N/A	4	7030322
Total Hepta CDD *	pg/g	58.7	0.119	4.99	0.0399	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.110 U	0.110	0.998	0.0399	0.100	0.0110	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.116 U	0.116	4.99	0.0399	0.0300	0.00348	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	0.106 U	0.106	4.99	0.0399	0.300	0.0318	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	0.235 J	0.101	4.99	0.0399	0.100	0.0235	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	0.104 U	0.104	4.99	0.0399	0.100	0.0104	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.0979 U	0.0979	4.99	0.0399	0.100	0.00979	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.105 U	0.105	4.99	0.0399	0.100	0.0105	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	6.14	0.118	4.99	0.0399	0.0100	0.0614	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.369 J	0.114	4.99	0.0399	0.0100	0.00369	N/A	7030322
Octa CDF **	pg/g	55.3	0.105	9.98	0.0799	0.000300	0.0166	N/A	7030322
Total Tetra CDF **	pg/g	0.110 U	0.110	0.998	0.0399	N/A	N/A	0	7030322
Total Penta CDF **	pg/g	0.162 J	0.111	4.99	0.0399	N/A	N/A	1	7030322
Total Hexa CDF **	pg/g	4.81 J	0.102	4.99	0.0399	N/A	N/A	4	7030322
Total Hepta CDF **	pg/g	35.3	0.116	4.99	0.0399	N/A	N/A	3	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.893	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE710							
Sampling Date		2020/09/28 14:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-26L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE711							
Sampling Date		2020/09/28 13:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.103 U	0.103	1.00	0.0400	1.00	0.103	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.107 U	0.107	5.00	0.0400	1.00	0.107	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.104 U	0.104	5.00	0.0400	0.100	0.0104	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	1.50 J	0.105	5.00	0.0400	0.100	0.150	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	0.563 J	0.111	5.00	0.0400	0.100	0.0563	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	43.6	0.114	5.00	0.0400	0.0100	0.436	N/A	7030322
Octa CDD *	pg/g	402	0.115	10.0	0.0800	0.000300	0.121	N/A	7030322
Total Tetra CDD *	pg/g	0.125 J	0.103	1.00	0.0400	N/A	N/A	1	7030322
Total Penta CDD *	pg/g	0.107 U	0.107	5.00	0.0400	N/A	N/A	0	7030322
Total Hexa CDD *	pg/g	6.07	0.108	5.00	0.0400	N/A	N/A	5	7030322
Total Hepta CDD *	pg/g	80.1	0.114	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.133 U (1)	0.133	1.00	0.0400	0.100	0.0133	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.444 J	0.118	5.00	0.0400	0.0300	0.0133	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	2.57 J	0.108	5.00	0.0400	0.300	0.771	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	14.8	0.108	5.00	0.0400	0.100	1.48	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	2.08 J	0.110	5.00	0.0400	0.100	0.208	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.797 J	0.104	5.00	0.0400	0.100	0.0797	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.111 U	0.111	5.00	0.0400	0.100	0.0111	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	16.2	0.113	5.00	0.0400	0.0100	0.162	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.36 J	0.110	5.00	0.0400	0.0100	0.0236	N/A	7030322
Octa CDF **	pg/g	29.7	0.114	10.0	0.0800	0.000300	0.00891	N/A	7030322
Total Tetra CDF **	pg/g	0.133 U (2)	0.133	1.00	0.0400	N/A	N/A	0	7030322
Total Penta CDF **	pg/g	20.7	0.113	5.00	0.0400	N/A	N/A	8	7030322
Total Hexa CDF **	pg/g	60.1	0.108	5.00	0.0400	N/A	N/A	8	7030322
Total Hepta CDF **	pg/g	65.2	0.112	5.00	0.0400	N/A	N/A	4	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	3.75	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE711							
Sampling Date		2020/09/28 13:40							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE712							
Sampling Date		2020/09/28 10:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-28U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.106 U	0.106	1.00	0.0400	1.00	0.106	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.430 J	0.113	5.00	0.0400	1.00	0.430	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.702 J	0.105	5.00	0.0400	0.100	0.0702	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	3.32 J	0.105	5.00	0.0400	0.100	0.332	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	3.20 J	0.111	5.00	0.0400	0.100	0.320	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	128	0.117	5.00	0.0400	0.0100	1.28	N/A	7030322
Octa CDD *	pg/g	1370	0.109	10.0	0.0800	0.000300	0.411	N/A	7030322
Total Tetra CDD *	pg/g	0.915 J	0.106	1.00	0.0400	N/A	N/A	2	7030322
Total Penta CDD *	pg/g	1.44 J	0.113	5.00	0.0400	N/A	N/A	5	7030322
Total Hexa CDD *	pg/g	25.5	0.109	5.00	0.0400	N/A	N/A	7	7030322
Total Hepta CDD *	pg/g	277	0.117	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.691 J	0.117	1.00	0.0400	0.100	0.0691	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.629 J	0.109	5.00	0.0400	0.0300	0.0189	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	2.16 J	0.0994	5.00	0.0400	0.300	0.648	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	10.5	0.101	5.00	0.0400	0.100	1.05	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	1.67 J	0.104	5.00	0.0400	0.100	0.167	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.857 J	0.0982	5.00	0.0400	0.100	0.0857	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.112 J	0.105	5.00	0.0400	0.100	0.0112	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	22.2	0.112	5.00	0.0400	0.0100	0.222	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.25 J	0.109	5.00	0.0400	0.0100	0.0225	N/A	7030322
Octa CDF **	pg/g	72.2	0.107	10.0	0.0800	0.000300	0.0217	N/A	7030322
Total Tetra CDF **	pg/g	7.01	0.117	1.00	0.0400	N/A	N/A	13	7030322
Total Penta CDF **	pg/g	20.9	0.104	5.00	0.0400	N/A	N/A	7	7030322
Total Hexa CDF **	pg/g	50.6	0.102	5.00	0.0400	N/A	N/A	11	7030322
Total Hepta CDF **	pg/g	84.7	0.110	5.00	0.0400	N/A	N/A	3	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	5.27	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE712							
Sampling Date		2020/09/28 10:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-28U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE713							
Sampling Date		2020/09/29 13:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U-OS	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	3.28	0.119	0.998	0.0399	1.00	3.28	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	2.31 J	0.120	4.99	0.0399	1.00	2.31	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	3.45 J	0.100	4.99	0.0399	0.100	0.345	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	18.4	0.101	4.99	0.0399	0.100	1.84	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	15.7 (1)	0.106	4.99	0.0399	0.100	1.57	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	778	0.123	4.99	0.0399	0.0100	7.78	N/A	7030322
Octa CDD *	pg/g	11100 (2)	2.03	200	0.0799	0.000300	3.33	N/A	7030322
Total Tetra CDD *	pg/g	18.2	0.119	0.998	0.0399	N/A	N/A	11	7030322
Total Penta CDD *	pg/g	19.4	0.120	4.99	0.0399	N/A	N/A	11	7030322
Total Hexa CDD *	pg/g	131	0.104	4.99	0.0399	N/A	N/A	7	7030322
Total Hepta CDD *	pg/g	1510	0.123	4.99	0.0399	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	11.3 U (3)	11.3	0.998	0.0399	0.100	1.13	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	2.21 J	0.120	4.99	0.0399	0.0300	0.0663	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	4.53 J	0.110	4.99	0.0399	0.300	1.36	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	16.2 (1)	0.117	4.99	0.0399	0.100	1.62	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	6.46	0.120	4.99	0.0399	0.100	0.646	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	6.47	0.114	4.99	0.0399	0.100	0.647	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.326 J	0.121	4.99	0.0399	0.100	0.0326	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	153	0.104	4.99	0.0399	0.0100	1.53	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	13.6	0.100	4.99	0.0399	0.0100	0.136	N/A	7030322
Octa CDF **	pg/g	681	0.128	9.98	0.0799	0.000300	0.204	N/A	7030322
Total Tetra CDF **	pg/g	72.1	0.129	0.998	0.0399	N/A	N/A	18	7030322
Total Penta CDF **	pg/g	155	0.115	4.99	0.0399	N/A	N/A	12	7030322
Total Hexa CDF **	pg/g	249	0.118	4.99	0.0399	N/A	N/A	12	7030322
Total Hepta CDF **	pg/g	649	0.102	4.99	0.0399	N/A	N/A	4	7030322
Confirmation 2,3,7,8-Tetra CDF **	pg/g	3.75	0.15	1.0	0.18	0.100	0.375	N/A	7037564

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / Merged Peak

(2) results obtained from 10x dilution and RDL is adjusted accordingly

(3) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE713							
Sampling Date		2020/09/29 13:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U-OS	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	27.1	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	72 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7030322
Confirmation C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7037564

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) results obtained from 10x dilution

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.115 U	0.115	0.999	0.0400	1.00	0.115	N/A	7030322
1,2,3,7,8-Penta CDD *	pg/g	0.285 J	0.108	5.00	0.0400	1.00	0.285	N/A	7030322
1,2,3,4,7,8-Hexa CDD *	pg/g	0.411 J	0.112	5.00	0.0400	0.100	0.0411	N/A	7030322
1,2,3,6,7,8-Hexa CDD *	pg/g	2.60 J	0.113	5.00	0.0400	0.100	0.260	N/A	7030322
1,2,3,7,8,9-Hexa CDD *	pg/g	1.59 J	0.119	5.00	0.0400	0.100	0.159	N/A	7030322
1,2,3,4,6,7,8-Hepta CDD *	pg/g	96.5	0.103	5.00	0.0400	0.0100	0.965	N/A	7030322
Octa CDD *	pg/g	938	0.110	9.99	0.0799	0.000300	0.281	N/A	7030322
Total Tetra CDD *	pg/g	0.115 U	0.115	0.999	0.0400	N/A	N/A	0	7030322
Total Penta CDD *	pg/g	0.285 J	0.108	5.00	0.0400	N/A	N/A	1	7030322
Total Hexa CDD *	pg/g	14.4	0.116	5.00	0.0400	N/A	N/A	7	7030322
Total Hepta CDD *	pg/g	180	0.103	5.00	0.0400	N/A	N/A	2	7030322
2,3,7,8-Tetra CDF **	pg/g	0.498 J	0.102	0.999	0.0400	0.100	0.0498	N/A	7030322
1,2,3,7,8-Penta CDF **	pg/g	0.116 U	0.116	5.00	0.0400	0.0300	0.00348	N/A	7030322
2,3,4,7,8-Penta CDF **	pg/g	0.286 J	0.106	5.00	0.0400	0.300	0.0858	N/A	7030322
1,2,3,4,7,8-Hexa CDF **	pg/g	1.24 J	0.110	5.00	0.0400	0.100	0.124	N/A	7030322
1,2,3,6,7,8-Hexa CDF **	pg/g	0.451 J	0.112	5.00	0.0400	0.100	0.0451	N/A	7030322
2,3,4,6,7,8-Hexa CDF **	pg/g	0.345 J	0.106	5.00	0.0400	0.100	0.0345	N/A	7030322
1,2,3,7,8,9-Hexa CDF **	pg/g	0.113 U	0.113	5.00	0.0400	0.100	0.0113	N/A	7030322
1,2,3,4,6,7,8-Hepta CDF **	pg/g	22.9	0.108	5.00	0.0400	0.0100	0.229	N/A	7030322
1,2,3,4,7,8,9-Hepta CDF **	pg/g	1.88 J	0.105	5.00	0.0400	0.0100	0.0188	N/A	7030322
Octa CDF **	pg/g	167	0.110	9.99	0.0799	0.000300	0.0501	N/A	7030322
Total Tetra CDF **	pg/g	2.99	0.102	0.999	0.0400	N/A	N/A	9	7030322
Total Penta CDF **	pg/g	7.06	0.111	5.00	0.0400	N/A	N/A	6	7030322
Total Hexa CDF **	pg/g	19.2	0.110	5.00	0.0400	N/A	N/A	8	7030322
Total Hepta CDF **	pg/g	110	0.107	5.00	0.0400	N/A	N/A	4	7030322
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	2.76	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234678 HeptaCDD *	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123478 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-1234789 HeptaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123678 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-123789 HexaCDF **	%	128	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-234678 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-23478 PentaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7030322
C13-OCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7030322

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00645	0.00012	0.0019	0.0026	N/A	N/A	N/A	7189553
3-MonoCB-(2)	ng/g	0.00093 J	0.00012	0.0019	0.0038	N/A	N/A	N/A	7189553
4-MonoCB-(3)	ng/g	0.00334 J	0.00012	0.0048	0.0035	N/A	N/A	N/A	7189553
22'-DiCB-(4)	ng/g	0.0619	0.00025	0.0048	0.0040	N/A	N/A	N/A	7189553
2,3-DiCB-(5)	ng/g	0.0014 U (1)	0.0014	0.0048	0.015	N/A	N/A	N/A	7189553
2,3'-DiCB-(6)	ng/g	0.0236	0.00021	0.0019	0.0034	N/A	N/A	N/A	7189553
2,4-DiCB-(7)	ng/g	0.00281	0.00020	0.0019	0.0064	N/A	N/A	N/A	7189553
2,4'-DiCB-(8)	ng/g	0.0416	0.00020	0.0048	0.016	N/A	N/A	N/A	7189553
2,5-DiCB-(9)	ng/g	0.00590	0.00022	0.0019	0.0019	N/A	N/A	N/A	7189553
2,6-DiCB-(10)	ng/g	0.00485	0.00024	0.0048	0.0042	N/A	N/A	N/A	7189553
3,3'-DiCB-(11)	ng/g	0.0140	0.00022	0.0095	0.034	N/A	N/A	N/A	7189553
DiCB-(12)+(13)	ng/g	0.00888	0.00021	0.0048	0.011	N/A	N/A	N/A	7189553
3,5-DiCB-(14)	ng/g	0.00022 U	0.00022	0.0019	0.0033	N/A	N/A	N/A	7189553
4,4'-DiCB-(15)	ng/g	0.339	0.00030	0.0048	0.0039	N/A	N/A	N/A	7189553
22'3-TriCB-(16)	ng/g	0.339	0.00051	0.0048	0.013	N/A	N/A	N/A	7189553
22'4-TriCB-(17)	ng/g	0.308	0.00039	0.0019	0.0040	N/A	N/A	N/A	7189553
TriCB-(18)+(30)	ng/g	0.669	0.00033	0.0048	0.0052	N/A	N/A	N/A	7189553
22'6-TriCB-(19)	ng/g	0.263	0.00037	0.0019	0.0052	N/A	N/A	N/A	7189553
TriCB-(20) + (28)	ng/g	0.921	0.00043	0.0048	0.0090	N/A	N/A	N/A	7189553
TriCB-(21)+(33)	ng/g	0.174	0.00042	0.0048	0.011	N/A	N/A	N/A	7189553
234'-TriCB-(22)	ng/g	0.131	0.00046	0.0019	0.0049	N/A	N/A	N/A	7189553
235-TriCB-(23)	ng/g	0.00049 U	0.00049	0.0019	0.0046	N/A	N/A	N/A	7189553
236-TriCB-(24)	ng/g	0.00027 U	0.00027	0.0019	0.0090	N/A	N/A	N/A	7189553
23'4-TriCB-(25)	ng/g	0.039 U (1)	0.039	0.0019	0.0064	N/A	N/A	N/A	7189553
TriCB-(26)+(29)	ng/g	0.0843	0.00045	0.0048	0.0087	N/A	N/A	N/A	7189553
23'6-TriCB-(27)	ng/g	0.118	0.00032	0.0019	0.0065	N/A	N/A	N/A	7189553
24'5-TriCB-(31)	ng/g	0.778	0.00042	0.0048	0.0038	N/A	N/A	N/A	7189553
24'6-TriCB-(32)	ng/g	0.484	0.00027	0.0019	0.0024	N/A	N/A	N/A	7189553
23'5'-TriCB-(34)	ng/g	0.00191	0.00045	0.0019	0.0060	N/A	N/A	N/A	7189553
33'4-TriCB-(35)	ng/g	0.00762	0.00046	0.0019	0.0042	N/A	N/A	N/A	7189553

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00041 U	0.00041	0.0019	0.0029	N/A	N/A	N/A	7189553
344'-TriCB-(37)	ng/g	0.428	0.00069	0.0019	0.0029	N/A	N/A	N/A	7189553
345-TriCB-(38)	ng/g	0.00117 J	0.00047	0.0019	0.0038	N/A	N/A	N/A	7189553
34'5-TriCB-(39)	ng/g	0.0111	0.00044	0.0019	0.0052	N/A	N/A	N/A	7189553
TetraCB-(40)+(41)+(71)	ng/g	2.47	0.00062	0.0095	0.016	N/A	N/A	N/A	7189553
22'34'-TetraCB-(42)	ng/g	1.41	0.00063	0.0048	0.014	N/A	N/A	N/A	7189553
22'35-TetraCB-(43)	ng/g	0.183	0.00079	0.0048	0.019	N/A	N/A	N/A	7189553
TetraCB-(44)+(47)+(65)	ng/g	4.96	0.00055	0.0095	0.041	N/A	N/A	N/A	7189553
TetraCB-(45)+(51)	ng/g	0.887	0.00062	0.0048	0.018	N/A	N/A	N/A	7189553
22'36'-TetraCB-(46)	ng/g	0.311	0.00070	0.0019	0.0090	N/A	N/A	N/A	7189553
22'45-TetraCB-(48)	ng/g	0.736	0.00062	0.0048	0.0042	N/A	N/A	N/A	7189553
TetraCB-(49)+TetraCB-(69)	ng/g	3.30	0.00052	0.0095	0.010	N/A	N/A	N/A	7189553
TetraCB-(50)+(53)	ng/g	0.803	0.00059	0.0095	0.013	N/A	N/A	N/A	7189553
22'55'-TetraCB-(52)	ng/g	7.02	0.00064	0.0048	0.016	N/A	N/A	N/A	7189553
22'66'-TetraCB-(54)	ng/g	0.0115	0.00023	0.0048	0.0096	N/A	N/A	N/A	7189553
233'4-TetraCB-(55)	ng/g	0.0014 U	0.0014	0.0048	0.011	N/A	N/A	N/A	7189553
233'4'-Tetra CB(56)	ng/g	1.39	0.0015	0.0048	0.0051	N/A	N/A	N/A	7189553
233'5-TetraCB-(57)	ng/g	0.0015 U	0.0015	0.0048	0.0056	N/A	N/A	N/A	7189553
233'5'-TetraCB-(58)	ng/g	0.0015 U	0.0015	0.0048	0.011	N/A	N/A	N/A	7189553
TetraCB-(59)+(62)+(75)	ng/g	0.259	0.00047	0.0095	0.014	N/A	N/A	N/A	7189553
2344'-TetraCB -(60)	ng/g	0.285	0.0015	0.0048	0.0053	N/A	N/A	N/A	7189553
TetraCB-(61)+(70)+(74)+(76)	ng/g	4.71	0.0014	0.019	0.022	N/A	N/A	N/A	7189553
234'5-TetraCB-(63)	ng/g	0.0428	0.0014	0.0048	0.0071	N/A	N/A	N/A	7189553
234'6-TetraCB-(64)	ng/g	1.78	0.00047	0.0048	0.0047	N/A	N/A	N/A	7189553
23'44'-TetraCB-(66)	ng/g	3.68	0.0015	0.0048	0.099	N/A	N/A	N/A	7189553
23'45-TetraCB-(67)	ng/g	0.0264	0.0013	0.0048	0.011	N/A	N/A	N/A	7189553
23'45'-TetraCB-(68)	ng/g	0.0117	0.0013	0.0048	0.0088	N/A	N/A	N/A	7189553
23'55'-TetraCB-(72)	ng/g	0.0227	0.0014	0.0048	0.0086	N/A	N/A	N/A	7189553
23'5'6-TetraCB-(73)	ng/g	0.0133	0.00043	0.0048	0.019	N/A	N/A	N/A	7189553
33'44'-TetraCB-(77)	ng/g	0.332	0.0017	0.0048	0.0063	0.000100	0.0000332	N/A	7189553
33'45-TetraCB-(78)	ng/g	0.0015 U	0.0015	0.0048	0.0065	N/A	N/A	N/A	7189553

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.0338	0.0014	0.0048	0.0058	N/A	N/A	N/A	7189553
33'55'-TetraCB-(80)	ng/g	0.0013 U	0.0013	0.0048	0.0061	N/A	N/A	N/A	7189553
344'5-TetraCB-(81)	ng/g	0.0049	0.0016	0.0048	0.0058	0.000300	0.00000147	N/A	7189553
22'33'4-PentaCB-(82)	ng/g	0.807	0.0011	0.0048	0.0048	N/A	N/A	N/A	7189553
PentaCB-(83)+(99)	ng/g	3.61	0.0010	0.0095	0.016	N/A	N/A	N/A	7189553
22'33'6-PentaCB-(84)	ng/g	1.71	0.0011	0.0019	0.0077	N/A	N/A	N/A	7189553
PentaCB-(85)+(116)+(117)	ng/g	0.987	0.00078	0.0095	0.027	N/A	N/A	N/A	7189553
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	4.55	0.00083	0.019	0.029	N/A	N/A	N/A	7189553
PentaCB-(88)+(91)	ng/g	0.976	0.0010	0.0048	0.013	N/A	N/A	N/A	7189553
22'346'-PentaCB-(89)	ng/g	0.0722	0.0011	0.0048	0.0080	N/A	N/A	N/A	7189553
PentaCB-(90)+(101)+(113)	ng/g	7.15	0.00087	0.019	0.011	N/A	N/A	N/A	7189553
22'355'-PentaCB-(92)	ng/g	1.25	0.0010	0.0048	0.0044	N/A	N/A	N/A	7189553
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.242	0.00096	0.019	0.024	N/A	N/A	N/A	7189553
22'356'-PentaCB-(94)	ng/g	0.0299	0.0011	0.0048	0.0063	N/A	N/A	N/A	7189553
22'35'6-PentaCB-(95)	ng/g	5.75	0.00095	0.0048	0.0088	N/A	N/A	N/A	7189553
22'366'-PentaCB-(96)	ng/g	0.0448	0.00048	0.0048	0.010	N/A	N/A	N/A	7189553
22'45'6-PentaCB-(103)	ng/g	0.0300	0.00091	0.0048	0.0061	N/A	N/A	N/A	7189553
22'466'-PentaCB-(104)	ng/g	0.00042 J	0.00038	0.0048	0.0056	N/A	N/A	N/A	7189553
233'44'-PentaCB-(105)	ng/g	2.06	0.0011	0.0048	0.0044	0.0000300	0.0000618	N/A	7189553
233'45-PentaCB-(106)	ng/g	0.00098 U	0.00098	0.0048	0.0036	N/A	N/A	N/A	7189553
233'4'5-PentaCB-(107)	ng/g	0.366	0.00097	0.0048	0.017	N/A	N/A	N/A	7189553
PentaCB-(108)+(124)	ng/g	0.237	0.00096	0.0095	0.011	N/A	N/A	N/A	7189553
PentaCB-(110)+(115)	ng/g	8.92	0.00083	0.0095	0.012	N/A	N/A	N/A	7189553
233'55'-PentaCB-(111)	ng/g	0.00077 U	0.00077	0.0048	0.0056	N/A	N/A	N/A	7189553
233'56-PentaCB-(112)	ng/g	0.00076 U	0.00076	0.0048	0.0078	N/A	N/A	N/A	7189553
2344'5-PentaCB-(114)	ng/g	0.0704	0.0011	0.0048	0.0042	0.0000300	0.00000211	N/A	7189553
23'44'5-PentaCB-(118)	ng/g	5.33	0.0011	0.00095	0.0066	0.0000300	0.000160	N/A	7189553
23'455'-PentaCB-(120)	ng/g	0.00340 J	0.00076	0.0048	0.0064	N/A	N/A	N/A	7189553
23'45'6-PentaCB-(121)	ng/g	0.00076 U	0.00076	0.0048	0.0063	N/A	N/A	N/A	7189553
233'4'5'-PentaCB-(122)	ng/g	0.0712	0.0011	0.0048	0.0066	N/A	N/A	N/A	7189553
23'44'5'-PentaCB-(123)	ng/g	0.0745	0.0012	0.0048	0.014	0.0000300	0.00000224	N/A	7189553

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'5-PentaCB-(126)	ng/g	0.0082	0.0011	0.0048	0.0030	0.100	0.000820	N/A	7189553
33'455'-PentaCB-(127)	ng/g	0.00856	0.00096	0.0048	0.0032	N/A	N/A	N/A	7189553
HexaCB-(128)+(166)	ng/g	1.16	0.0032	0.0095	0.021	N/A	N/A	N/A	7189553
HexaCB-(129)+(138)+(163)	ng/g	8.14	0.0034	0.019	0.037	N/A	N/A	N/A	7189553
22'33'45'-HexaCB-(130)	ng/g	0.472	0.0042	0.0048	0.0051	N/A	N/A	N/A	7189553
22'33'46-HexaCB-(131)	ng/g	0.0973	0.0041	0.0048	0.0099	N/A	N/A	N/A	7189553
22'33'46'-HexaCB-(132)	ng/g	2.68	0.0041	0.0048	0.0087	N/A	N/A	N/A	7189553
22'33'55'-HexaCB-(133)	ng/g	0.0723	0.0040	0.0048	0.010	N/A	N/A	N/A	7189553
HexaCB-(134)+(143)	ng/g	0.213	0.0040	0.0095	0.017	N/A	N/A	N/A	7189553
HexaCB-(135)+(151)	ng/g	2.32	0.00080	0.019	0.014	N/A	N/A	N/A	7189553
22'33'66'-HexaCB-(136)	ng/g	0.928	0.00060	0.0048	0.0083	N/A	N/A	N/A	7189553
22'344'5-HexaCB-(137)	ng/g	0.408	0.0043	0.0095	0.030	N/A	N/A	N/A	7189553
HexaCB-(139)+(140)	ng/g	0.115	0.0035	0.0095	0.016	N/A	N/A	N/A	7189553
22'3455'-HexaCB-(141)	ng/g	1.36	0.0036	0.0048	0.012	N/A	N/A	N/A	7189553
22'3456-HexaCB-(142)	ng/g	0.0041 U	0.0041	0.0048	0.0088	N/A	N/A	N/A	7189553
22'345'6-HexaCB-(144)	ng/g	0.384	0.00086	0.0048	0.0072	N/A	N/A	N/A	7189553
22'3466'-HexaCB-(145)	ng/g	0.00205 J	0.00062	0.0048	0.0082	N/A	N/A	N/A	7189553
22'34'55'-HexaCB-(146)	ng/g	0.869	0.0033	0.0048	0.010	N/A	N/A	N/A	7189553
HexaCB-(147)+(149)	ng/g	4.92	0.0035	0.0095	0.019	N/A	N/A	N/A	7189553
22'34'56'-HexaCB-(148)	ng/g	0.00276 J	0.00081	0.0048	0.0084	N/A	N/A	N/A	7189553
22'34'66'-HexaCB-(150)	ng/g	0.00469 J	0.00058	0.0048	0.0061	N/A	N/A	N/A	7189553
22'3566'-HexaCB-(152)	ng/g	0.00503	0.00060	0.0048	0.013	N/A	N/A	N/A	7189553
HexaCB-(153)+(168)	ng/g	6.10	0.0030	0.0095	0.013	N/A	N/A	N/A	7189553
22'44'56'-HexaCB-(154)	ng/g	0.0299	0.00069	0.0048	0.012	N/A	N/A	N/A	7189553
22'44'66'-HexaCB-(155)	ng/g	0.00038 U	0.00038	0.0048	0.0087	N/A	N/A	N/A	7189553
HexaCB-(156)+(157)	ng/g	0.835	0.0011	0.0095	0.0086	0.0000300	0.0000251	N/A	7189553
233'44'6-HexaCB-(158)	ng/g	0.813	0.0027	0.0048	0.0072	N/A	N/A	N/A	7189553
233'455'-HexaCB-(159)	ng/g	0.0337	0.00089	0.0048	0.0082	N/A	N/A	N/A	7189553
233'456-HexaCB-(160)	ng/g	0.0029 U	0.0029	0.0048	0.017	N/A	N/A	N/A	7189553
233'45'6-HexaCB-(161)	ng/g	0.0029 U	0.0029	0.0048	0.011	N/A	N/A	N/A	7189553
233'4'55'-HexaCB-(162)	ng/g	0.0167	0.00087	0.0048	0.0083	N/A	N/A	N/A	7189553

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Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'5'6-HexaCB-(164)	ng/g	0.535	0.0026	0.0048	0.017	N/A	N/A	N/A	7189553
233'55'6-HexaCB-(165)	ng/g	0.0031 U	0.0031	0.0048	0.010	N/A	N/A	N/A	7189553
23'44'55'-HexaCB-(167)	ng/g	0.300	0.0011	0.0048	0.0056	0.0000300	0.00000900	N/A	7189553
33'44'55'-HexaCB-(169)	ng/g	0.0011 U	0.0011	0.0048	0.024	0.0300	0.0000330	N/A	7189553
22'33'44'5-HeptaCB-(170)	ng/g	1.22	0.00066	0.0048	0.0042	N/A	N/A	N/A	7189553
HeptaCB-(171)+(173)	ng/g	0.424	0.00079	0.0095	0.011	N/A	N/A	N/A	7189553
22'33'455'-HeptaCB-(172)	ng/g	0.197	0.00084	0.0048	0.0080	N/A	N/A	N/A	7189553
22'33'456'-HeptaCB-(174)	ng/g	1.23	0.00076	0.0048	0.014	N/A	N/A	N/A	7189553
22'33'45'6-HeptaCB-(175)	ng/g	0.0704	0.00085	0.0048	0.0092	N/A	N/A	N/A	7189553
22'33'466'-HeptaCB-(176)	ng/g	0.160	0.00066	0.0048	0.0098	N/A	N/A	N/A	7189553
22'33'45'6'-HeptaCB-(177)	ng/g	0.713	0.00082	0.0048	0.0078	N/A	N/A	N/A	7189553
22'33'55'6-HeptaCB-(178)	ng/g	0.219	0.00090	0.0048	0.010	N/A	N/A	N/A	7189553
22'33'566'-HeptaCB-(179)	ng/g	0.493	0.00063	0.0048	0.0086	N/A	N/A	N/A	7189553
HeptaCB-(180)+(193)	ng/g	2.57	0.00064	0.0095	0.0085	N/A	N/A	N/A	7189553
22'344'56-HeptaCB-(181)	ng/g	0.0208	0.00077	0.0048	0.0080	N/A	N/A	N/A	7189553
22'344'56'-HeptaCB-(182)	ng/g	0.00083 U	0.00083	0.0048	0.0092	N/A	N/A	N/A	7189553
22'344'5'6-HeptaCB-(183)	ng/g	1.04	0.00082	0.0048	0.028	N/A	N/A	N/A	7189553
22'344'66'-HeptaCB-(184)	ng/g	0.00062 U	0.00062	0.0048	0.010	N/A	N/A	N/A	7189553
22'3455'6-HeptaCB-(185)	ng/g	0.00068 U	0.00068	0.0048	0.022	N/A	N/A	N/A	7189553
22'34566'-HeptaCB-(186)	ng/g	0.00066 U	0.00066	0.0048	0.0086	N/A	N/A	N/A	7189553
22'34'55'6-HeptaCB-(187)	ng/g	1.48	0.00081	0.0048	0.011	N/A	N/A	N/A	7189553
22'34'566'-HeptaCB-(188)	ng/g	0.00186 J	0.00069	0.0048	0.0047	N/A	N/A	N/A	7189553
233'44'55'-HeptaCB-(189)	ng/g	0.0448	0.00080	0.0048	0.0041	0.0000300	0.00000134	N/A	7189553
233'44'56-HeptaCB-(190)	ng/g	0.235	0.00062	0.0048	0.0041	N/A	N/A	N/A	7189553
233'44'5'6-HeptaCB-(191)	ng/g	0.0447	0.00062	0.0048	0.0045	N/A	N/A	N/A	7189553
233'455'6-HeptaCB-(192)	ng/g	0.00065 U	0.00065	0.0048	0.0090	N/A	N/A	N/A	7189553
22'33'44'55'-OctaCB-(194)	ng/g	0.451	0.0011	0.0048	0.0095	N/A	N/A	N/A	7189553
22'33'44'56-OctaCB-(195)	ng/g	0.192	0.0011	0.0048	0.0094	N/A	N/A	N/A	7189553
22'33'44'56'-OctaCB-(196)	ng/g	0.301	0.00077	0.0048	0.016	N/A	N/A	N/A	7189553
22'33'44'66'OctaCB-(197)	ng/g	0.0204	0.00060	0.0048	0.044	N/A	N/A	N/A	7189553
OctaCB-(198)+(199)	ng/g	0.678	0.00075	0.0095	0.014	N/A	N/A	N/A	7189553

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BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'4566'-OctaCB-(200)	ng/g	0.0676	0.00051	0.0048	0.032	N/A	N/A	N/A	7189553
22'33'45'66'-OctaCB-(201)	ng/g	0.0823	0.00056	0.0048	0.017	N/A	N/A	N/A	7189553
22'33'55'66'-OctaCB-(202)	ng/g	0.145	0.00055	0.0095	0.0081	N/A	N/A	N/A	7189553
22'344'55'6-OctaCB-(203)	ng/g	0.455	0.00070	0.0048	0.011	N/A	N/A	N/A	7189553
22'344'566'-OctaCB-(204)	ng/g	0.00057 U	0.00057	0.0048	0.021	N/A	N/A	N/A	7189553
233'44'55'6-OctaCB-(205)	ng/g	0.0202	0.0011	0.0048	0.0096	N/A	N/A	N/A	7189553
22'33'44'55'6-NonaCB-(206)	ng/g	0.335	0.00059	0.0048	0.0077	N/A	N/A	N/A	7189553
22'33'44'566'-NonaCB-(207)	ng/g	0.0365	0.00049	0.0048	0.0081	N/A	N/A	N/A	7189553
22'33'455'66'-NonaCB-(208)	ng/g	0.0856	0.00060	0.0048	0.0073	N/A	N/A	N/A	7189553
DecaCB-(209)	ng/g	0.0646	0.00079	0.0048	0.012	N/A	N/A	N/A	7189553
Total PCB	ng/g	130	N/A	N/A	N/A	N/A	N/A	N/A	7189553
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.00115	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'33'44'55'6-NonaCB-(206)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'33'44'5-HeptaCB-(170)	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'33'455'66'-NonaCB-(208)	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'33'55'66'-OctaCB-(202)	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'33'55'6-HeptaCB-(178)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'344'55'-HeptaCB-(180)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'34'566'-HeptaCB-(188)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'44'66'-HexaCB-(155)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'466'-PentaCB-(104)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'66'-TetraCB-(54)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'6-TriCB-(19)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-22'-DiCB-(4)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-233'44'55'6-OctaCB-(205)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-233'44'55'-HeptaCB-(189)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-233'44'-PentaCB-(105)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-233'55'-PentaCB-(111)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-23'44'55'-HexaCB-(167)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7189553

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		NVE714							
Sampling Date		2020/09/29 13:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-2344'5-PentaCB-(114)	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-23'44'5-PentaCB-(118)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-2'344'5-PentaCB-(123)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-2-MonoCB-(1)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-33'44'55'-HexaCB-(169)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-33'44'5-PentaCB-(126)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-33'44'-TetraCB-(77)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-344'5-TetraCB-(81)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-344'-TriCB-(37)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-44'-DiCB-(15)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-4-MonoCB-(3)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-DecaCB-(209)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7189553
C13-HexaCB-(156)+(157)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7189553

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE703
Sample ID: T4RB-23U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal
OC Pesticides in Soil by GCTQ	GCTQ/MS	7150233	2021/01/14	2021/01/17	Wenhui (Susie) Shi

BV Labs ID: NVE703 Dup
Sample ID: T4RB-23U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal
OC Pesticides in Soil by GCTQ	GCTQ/MS	7150233	2021/01/14	2021/01/17	Wenhui (Susie) Shi

BV Labs ID: NVE704
Sample ID: T4RB-23L
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE705
Sample ID: T4RB-24U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE706
Sample ID: T4RB-24L
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7037564	2020/10/20	2020/11/03	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE707
Sample ID: T4RB-25U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal
OC Pesticides in Soil by GCTQ	GCTQ/MS	7124581	2020/12/23	2020/12/23	Wenhui (Susie) Shi

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE707 Dup
Sample ID: T4RB-25U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
OC Pesticides in Soil by GCTQ	GCTQ/MS	7124581	2020/12/23	2020/12/23	Wenhui (Susie) Shi

BV Labs ID: NVE708
Sample ID: T4RB-25L
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE708 Dup
Sample ID: T4RB-25L
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero

BV Labs ID: NVE709
Sample ID: T4RB-26U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/03	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE710
Sample ID: T4RB-26L
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/03	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE711
Sample ID: DUP-1
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/02	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE712
Sample ID: T4RB-28U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/03	Angel Guerrero

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE712
Sample ID: T4RB-28U
Matrix: Soil

Collected: 2020/09/28
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE713
Sample ID: T4RB-1U-OS
Matrix: Soil

Collected: 2020/09/29
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/03	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7037564	2020/10/20	2020/11/03	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE714
Sample ID: T4RB-1L
Matrix: Soil

Collected: 2020/09/29
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7030322	2020/10/20	2020/11/03	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal
PCB Congeners in Soil (1668C)	HRMS/MS	7189553	2021/01/14	2021/02/10	Angel Guerrero

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.7°C

Revised Report (2021/02/24): Straight run reported to achieve lower RDL as per client request.

Revised Report (2021/02/19): Addditional analysis, Dieldrin and PCB, added as per client request.

Sample NVE703 [T4RB-23U] : OCTQ-S Analysis: Sample was extracted pass hold time.

Straight run was reported instead of 5x dilution becuase client requested lower DL. For post CCV after the striaght run, surrogate 13C-ppDDE failed below surrogate criteria due to dirty straight samples injected. Native recovery passed in post CCV.

The straight sample, sample duplicate and matrix spike also had the surrogate 13C-pp-DDE below criteria due to matrix interferences.

SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

PCB Congeners in Soil (1668C): Some of the Native Standard recoveries in the matix spike are outside method criteria, possibly due to the nature of the matrix and heterogenity.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7002150	MYG	RPD - Sample/Sample Dup	Moisture	2020/10/15	4.0		%	20
7030322	AGU	Matrix Spike(NVE711)	37CL4 2378 Tetra CDD	2020/11/01		80	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/01		80	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/01		89	%	28 - 143
			C13-123478 HexaCDD	2020/11/01		76	%	32 - 141
			C13-123478 HexaCDF	2020/11/01		81	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/01		87	%	26 - 138
			C13-123678 HexaCDD	2020/11/01		82	%	28 - 130
			C13-123678 HexaCDF	2020/11/01		76	%	26 - 123
			C13-12378 PentaCDD	2020/11/01		76	%	25 - 181
			C13-12378 PentaCDF	2020/11/01		68	%	24 - 185
			C13-123789 HexaCDF	2020/11/01		105	%	29 - 147
			C13-234678 HexaCDF	2020/11/01		85	%	28 - 136
			C13-23478 PentaCDF	2020/11/01		81	%	21 - 178
			C13-2378 TetraCDD	2020/11/01		72	%	25 - 164
			C13-2378 TetraCDF	2020/11/01		77	%	24 - 169
			C13-OCDD	2020/11/01		71	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/01		104	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/01		106	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/01		110	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/01		108	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/01		144	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/01		122	%	70 - 140
			Octa CDD	2020/11/01		168 (1)	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/01		102	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/01		110	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/01		107	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/01		111	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/01		105	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/01		108	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/01		103	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/01		106	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/01		113	%	78 - 138
			Octa CDF	2020/11/01		119	%	63 - 170
7030322	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/11/01		78	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/01		71	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/01		85	%	28 - 143
			C13-123478 HexaCDD	2020/11/01		70	%	32 - 141
			C13-123478 HexaCDF	2020/11/01		73	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/01		78	%	26 - 138
			C13-123678 HexaCDD	2020/11/01		76	%	28 - 130
			C13-123678 HexaCDF	2020/11/01		70	%	26 - 123
			C13-12378 PentaCDD	2020/11/01		70	%	25 - 181
			C13-12378 PentaCDF	2020/11/01		62	%	24 - 185
			C13-123789 HexaCDF	2020/11/01		93	%	29 - 147
			C13-234678 HexaCDF	2020/11/01		77	%	28 - 136
			C13-23478 PentaCDF	2020/11/01		76	%	21 - 178
			C13-2378 TetraCDD	2020/11/01		67	%	25 - 164
			C13-2378 TetraCDF	2020/11/01		72	%	24 - 169
			C13-OCDD	2020/11/01		65	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/01		101	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/01		107	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/01		109	%	70 - 164

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/11/01		104	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/01		146	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/01		110	%	70 - 140
			Octa CDD	2020/11/01		101	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/01		102	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/01		110	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/01		102	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/01		105	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/01		101	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/01		105	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/01		100	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/01		98	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/01		107	%	78 - 138
			Octa CDF	2020/11/01		108	%	63 - 170
7030322	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/11/02		60	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/02		67	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/02		74	%	28 - 143
			C13-123478 HexaCDD	2020/11/02		63	%	32 - 141
			C13-123478 HexaCDF	2020/11/02		65	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/02		73	%	26 - 138
			C13-123678 HexaCDD	2020/11/02		69	%	28 - 130
			C13-123678 HexaCDF	2020/11/02		64	%	26 - 123
			C13-12378 PentaCDD	2020/11/02		62	%	25 - 181
			C13-12378 PentaCDF	2020/11/02		57	%	24 - 185
			C13-123789 HexaCDF	2020/11/02		84	%	29 - 147
			C13-234678 HexaCDF	2020/11/02		69	%	28 - 136
			C13-23478 PentaCDF	2020/11/02		70	%	21 - 178
			C13-2378 TetraCDD	2020/11/02		58	%	25 - 164
			C13-2378 TetraCDF	2020/11/02		66	%	24 - 169
			C13-OCDD	2020/11/02		56	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/02	0.105 U, EDL=0.105		pg/g	
			1,2,3,7,8-Penta CDD	2020/11/02	0.102 U, EDL=0.102		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/11/02	0.108 U, EDL=0.108		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/11/02	0.109 U, EDL=0.109		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/11/02	0.115 U, EDL=0.115		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/11/02	0.119 U, EDL=0.119		pg/g	
			Octa CDD	2020/11/02	0.145 J, EDL=0.107		pg/g	
			Total Tetra CDD	2020/11/02	0.105 U, EDL=0.105		pg/g	
			Total Penta CDD	2020/11/02	0.102 U, EDL=0.102		pg/g	
			Total Hexa CDD	2020/11/02	0.112 U, EDL=0.112		pg/g	
			Total Hepta CDD	2020/11/02	0.119 U, EDL=0.119		pg/g	
			2,3,7,8-Tetra CDF	2020/11/02	0.0916 U, EDL=0.0916		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2020/11/02	0.107 U, EDL=0.107		pg/g	
			2,3,4,7,8-Penta CDF	2020/11/02	0.0983 U, EDL=0.0983		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/11/02	0.0754 U, EDL=0.0754		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/11/02	0.0774 U, EDL=0.0774		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/11/02	0.0731 U, EDL=0.0731		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/11/02	0.0781 U, EDL=0.0781		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/11/02	0.0956 U, EDL=0.0956		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/11/02	0.0925 U, EDL=0.0925		pg/g	
			Octa CDF	2020/11/02	0.106 U, EDL=0.106		pg/g	
			Total Tetra CDF	2020/11/02	0.0916 U, EDL=0.0916		pg/g	
			Total Penta CDF	2020/11/02	0.103 U, EDL=0.103		pg/g	
			Total Hexa CDF	2020/11/02	0.0760 U, EDL=0.0760		pg/g	
			Total Hepta CDF	2020/11/02	0.0940 U, EDL=0.0940		pg/g	
7030322	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/11/02	NC		%	25
			1,2,3,7,8-Penta CDD	2020/11/02	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/11/02	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/11/02	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/11/02	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/11/02	9.7		%	25
			Octa CDD	2020/11/02	4.3		%	25
			Total Tetra CDD	2020/11/02	NC		%	25
			Total Penta CDD	2020/11/02	NC		%	25
			Total Hexa CDD	2020/11/02	6.8		%	25
			Total Hepta CDD	2020/11/02	8.4		%	25
			2,3,7,8-Tetra CDF	2020/11/02	NC (2)		%	25
			1,2,3,7,8-Penta CDF	2020/11/02	NC		%	25
			2,3,4,7,8-Penta CDF	2020/11/02	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/11/02	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/11/02	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/11/02	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/11/02	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/11/02	NC		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/11/02	NC		%	25
			Octa CDF	2020/11/02	16		%	25
			Total Tetra CDF	2020/11/02	NC		%	25
			Total Penta CDF	2020/11/02	34 (3)		%	25
			Total Hexa CDF	2020/11/02	31 (3)		%	25
			Total Hepta CDF	2020/11/02	27 (3)		%	25
7037564	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/11/03	0.11 U, EDL=0.11		pg/g	
			Confirmation C13-2378 TetraCDF	2020/11/03		80	%	40 - 135

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7037564	AGU	RPD - Sample/Sample Dup	Confirmation 2,3,7,8-Tetra CDF	2020/11/03	16		%	100
7124581	WSS	Matrix Spike(NVE707)	13C10-cis Nonachlor	2020/12/23		86	%	36 - 139
			13C10-Heptachlor	2020/12/23		95	%	5 - 120
			13C10-Heptachlor Epoxide	2020/12/23		83	%	27 - 137
			13C10-Oxychlordane	2020/12/23		84	%	23 - 135
			13C10-trans Nonachlor	2020/12/23		91	%	14 - 136
			13C12-Endrin	2020/12/23		85	%	35 - 155
			13C12-Endrin Ketone	2020/12/23		70	%	35 - 155
			13C6-beta BHC	2020/12/23		76	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2020/12/23		65	%	11 - 120
			13C-Methoxychlor	2020/12/23		76	%	5 - 120
			13C-pp-DDD	2020/12/23		76	%	5 - 120
			13C-pp-DDE	2020/12/23		75	%	47 - 160
			13C-pp-DDT	2020/12/23		60	%	5 - 120
			C13-Hexachlorobenzene	2020/12/23		58	%	5 - 120
			Dieldrin	2020/12/23		119	%	50 - 200
7124581	WSS	Spiked Blank	13C10-cis Nonachlor	2020/12/23		93	%	36 - 139
			13C10-Heptachlor	2020/12/23		79	%	5 - 120
			13C10-Heptachlor Epoxide	2020/12/23		77	%	27 - 137
			13C10-Oxychlordane	2020/12/23		75	%	23 - 135
			13C10-trans Nonachlor	2020/12/23		89	%	14 - 136
			13C12-Endrin	2020/12/23		87	%	35 - 155
			13C12-Endrin Ketone	2020/12/23		93	%	35 - 155
			13C6-beta BHC	2020/12/23		83	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2020/12/23		80	%	11 - 120
			13C-Methoxychlor	2020/12/23		95	%	5 - 120
			13C-pp-DDD	2020/12/23		85	%	5 - 120
			13C-pp-DDE	2020/12/23		76	%	47 - 160
			13C-pp-DDT	2020/12/23		84	%	5 - 120
			C13-Hexachlorobenzene	2020/12/23		53	%	5 - 120
			Dieldrin	2020/12/23		112	%	50 - 200
7124581	WSS	Method Blank	13C10-cis Nonachlor	2020/12/23		98	%	36 - 139
			13C10-Heptachlor	2020/12/23		85	%	5 - 120
			13C10-Heptachlor Epoxide	2020/12/23		79	%	27 - 137
			13C10-Oxychlordane	2020/12/23		83	%	23 - 135
			13C10-trans Nonachlor	2020/12/23		91	%	14 - 136
			13C12-Endrin	2020/12/23		88	%	35 - 155
			13C12-Endrin Ketone	2020/12/23		101	%	35 - 155
			13C6-beta BHC	2020/12/23		82	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2020/12/23		83	%	11 - 120
			13C-Methoxychlor	2020/12/23		81	%	5 - 120
			13C-pp-DDD	2020/12/23		90	%	5 - 120
			13C-pp-DDE	2020/12/23		75	%	47 - 160
			13C-pp-DDT	2020/12/23		83	%	5 - 120
			C13-Hexachlorobenzene	2020/12/23		56	%	5 - 120
			Dieldrin	2020/12/23	0.024 U, MDL=0.024		ng/g	
7124581	WSS	RPD - Sample/Sample Dup	Dieldrin	2020/12/23	NC		%	25
7150233	WSS	Matrix Spike(NVE703)	13C10-cis Nonachlor	2021/01/17		26 (4)	%	36 - 139
			13C10-Heptachlor	2021/01/17		98	%	5 - 120
			13C10-Heptachlor Epoxide	2021/01/17		63	%	27 - 137
			13C10-Oxychlordane	2021/01/17		65	%	23 - 135
			13C10-trans Nonachlor	2021/01/17		37	%	14 - 136

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			13C12-Endrin	2021/01/17		36	%	35 - 155
			13C12-Endrin Ketone	2021/01/17		11 (4)	%	35 - 155
			13C6-beta BHC	2021/01/17		84	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2021/01/17		112	%	11 - 120
			13C-Methoxychlor	2021/01/17		34	%	5 - 120
			13C-pp-DDD	2021/01/17		22	%	5 - 120
			13C-pp-DDE	2021/01/17		37 (5)	%	47 - 160
			13C-pp-DDT	2021/01/17		12	%	5 - 120
			C13-Hexachlorobenzene	2021/01/17		99	%	5 - 120
			Dieldrin	2021/01/17		112	%	50 - 200
7150233	WSS	Spiked Blank	13C10-cis Nonachlor	2021/01/16		132	%	36 - 139
			13C10-Heptachlor	2021/01/16		94	%	5 - 120
			13C10-Heptachlor Epoxide	2021/01/16		111	%	27 - 137
			13C10-Oxychlordane	2021/01/16		114	%	23 - 135
			13C10-trans Nonachlor	2021/01/16		125	%	14 - 136
			13C12-Endrin	2021/01/16		143	%	35 - 155
			13C12-Endrin Ketone	2021/01/16		141	%	35 - 155
			13C6-beta BHC	2021/01/16		114	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2021/01/16		86	%	11 - 120
			13C-Methoxychlor	2021/01/16		155 (4)	%	5 - 120
			13C-pp-DDD	2021/01/16		141 (4)	%	5 - 120
			13C-pp-DDE	2021/01/16		130	%	47 - 160
			13C-pp-DDT	2021/01/16		133 (4)	%	5 - 120
			C13-Hexachlorobenzene	2021/01/16		82	%	5 - 120
			Dieldrin	2021/01/16		101	%	50 - 200
7150233	WSS	Method Blank	13C10-cis Nonachlor	2021/01/16		78	%	36 - 139
			13C10-Heptachlor	2021/01/16		74	%	5 - 120
			13C10-Heptachlor Epoxide	2021/01/16		74	%	27 - 137
			13C10-Oxychlordane	2021/01/16		73	%	23 - 135
			13C10-trans Nonachlor	2021/01/16		78	%	14 - 136
			13C12-Endrin	2021/01/16		85	%	35 - 155
			13C12-Endrin Ketone	2021/01/16		74	%	35 - 155
			13C6-beta BHC	2021/01/16		76	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2021/01/16		74	%	11 - 120
			13C-Methoxychlor	2021/01/16		67	%	5 - 120
			13C-pp-DDD	2021/01/16		80	%	5 - 120
			13C-pp-DDE	2021/01/16		80	%	47 - 160
			13C-pp-DDT	2021/01/16		63	%	5 - 120
			C13-Hexachlorobenzene	2021/01/16		59	%	5 - 120
			Dieldrin	2021/01/16	0.024 U, MDL=0.024		ng/g	
7150233	WSS	RPD - Sample/Sample Dup	Dieldrin	2021/01/17	NC (6)		%	25
7189553	HSO	Matrix Spike(NVE714)	C13-2,44'-TriCB-(28)	2021/02/10		55	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/10		91	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/10		100	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/10		103	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/10		111	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/10		106	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/10		101	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/10		101	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/10		102	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/10		96	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/10		100	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'6-TriCB-(19)	2021/02/10		92	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/10		85	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/10		91	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/10		85	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/10		75	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/10		93	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/10		78	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/10		77	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/10		77	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/10		78	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/10		60	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/10		70	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/10		72	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/10		81	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/10		80	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/10		80	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/10		84	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/10		71	%	15 - 150
			C13-DecaCB-(209)	2021/02/10		96	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/10		80	%	25 - 150
			2-MonoCB-(1)	2021/02/10		89	%	48 - 136
			3-MonoCB-(2)	2021/02/10		109	%	30 - 170
			4-MonoCB-(3)	2021/02/10		94	%	58 - 137
			22'-DiCB-(4)	2021/02/10		50 (4)	%	57 - 140
			2,3-DiCB-(5)	2021/02/10		88	%	30 - 170
			2,3'-DiCB-(6)	2021/02/10		79	%	30 - 170
			2,4-DiCB-(7)	2021/02/10		72	%	30 - 170
			2,4'-DiCB-(8)	2021/02/10		19 (4)	%	30 - 170
			2,5-DiCB-(9)	2021/02/10		99	%	30 - 170
			2,6-DiCB-(10)	2021/02/10		74	%	30 - 170
			3,3'-DiCB-(11)	2021/02/10		111	%	30 - 170
			DiCB-(12)+(13)	2021/02/10		97	%	30 - 170
			3,5-DiCB-(14)	2021/02/10		104	%	30 - 170
			4,4'-DiCB-(15)	2021/02/10		NC	%	64 - 148
			22'3-TriCB-(16)	2021/02/10		NC	%	30 - 170
			22'4-TriCB-(17)	2021/02/10		NC	%	30 - 170
			TriCB-(18)+(30)	2021/02/10		NC	%	30 - 170
			22'6-TriCB-(19)	2021/02/10		NC	%	74 - 125
			TriCB-(20) + (28)	2021/02/10		NC	%	30 - 170
			TriCB-(21)+(33)	2021/02/10		NC	%	30 - 170
			234'-TriCB-(22)	2021/02/10		NC	%	30 - 170
			235-TriCB-(23)	2021/02/10		89	%	30 - 170
			236-TriCB-(24)	2021/02/10		52	%	30 - 170
			23'4-TriCB-(25)	2021/02/10		112	%	30 - 170
			TriCB-(26)+(29)	2021/02/10		25 (4)	%	30 - 170
			23'6-TriCB-(27)	2021/02/10		NC	%	30 - 170
			24'5-TriCB-(31)	2021/02/10		NC	%	30 - 170
			24'6-TriCB-(32)	2021/02/10		NC	%	30 - 170
			23'5'-TriCB-(34)	2021/02/10		85	%	30 - 170
			33'4-TriCB-(35)	2021/02/10		77	%	30 - 170
			33'5-TriCB-(36)	2021/02/10		114	%	30 - 170
			344'-TriCB-(37)	2021/02/10		NC	%	61 - 148
			345-TriCB-(38)	2021/02/10		83	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			34'5-TriCB-(39)	2021/02/10		73	%	30 - 170
			TetraCB-(40)+(41)+(71)	2021/02/10		NC	%	30 - 170
			22'34'-TetraCB-(42)	2021/02/10		NC	%	30 - 170
			22'35-TetraCB-(43)	2021/02/10		NC	%	30 - 170
			TetraCB-(44)+(47)+(65)	2021/02/10		NC	%	30 - 170
			TetraCB-(45)+(51)	2021/02/10		NC	%	30 - 170
			22'36'-TetraCB-(46)	2021/02/10		NC	%	30 - 170
			22'45-TetraCB-(48)	2021/02/10		NC	%	30 - 170
			TetraCB-(49)+TetraCB-(69)	2021/02/10		NC	%	30 - 170
			TetraCB-(50)+(53)	2021/02/10		NC	%	30 - 170
			22'55'-TetraCB-(52)	2021/02/10		NC	%	30 - 170
			22'66'-TetraCB-(54)	2021/02/10		100	%	67 - 124
			233'4-TetraCB-(55)	2021/02/10		82	%	30 - 170
			233'4'-Tetra CB(56)	2021/02/10		NC	%	30 - 170
			233'5-TetraCB-(57)	2021/02/10		103	%	30 - 170
			233'5'-TetraCB-(58)	2021/02/10		155	%	30 - 170
			TetraCB-(59)+(62)+(75)	2021/02/10		NC	%	30 - 170
			2344'-TetraCB -(60)	2021/02/10		NC	%	30 - 170
			TetraCB-(61)+(70)+(74)+(76)	2021/02/10		NC	%	30 - 170
			234'5-TetraCB-(63)	2021/02/10		64	%	30 - 170
			234'6-TetraCB-(64)	2021/02/10		NC	%	30 - 150
			23'44'-TetraCB-(66)	2021/02/10		NC	%	30 - 170
			23'45-TetraCB-(67)	2021/02/10		71	%	30 - 170
			23'45'-TetraCB-(68)	2021/02/10		86	%	30 - 170
			23'55'-TetraCB-(72)	2021/02/10		80	%	30 - 170
			23'5'6-TetraCB-(73)	2021/02/10		8.0 (4)	%	30 - 170
			33'44'-TetraCB-(77)	2021/02/10		NC	%	75 - 118
			33'45-TetraCB-(78)	2021/02/10		106	%	30 - 170
			33'45'-TetraCB(79)	2021/02/10		111	%	30 - 170
			33'55'-TetraCB-(80)	2021/02/10		94	%	30 - 170
			344'5-TetraCB-(81)	2021/02/10		121	%	78 - 124
			22'33'4-PentaCB-(82)	2021/02/10		NC	%	30 - 170
			PentaCB-(83)+(99)	2021/02/10		NC	%	30 - 170
			22'33'6-PentaCB-(84)	2021/02/10		NC	%	30 - 170
			PentaCB-(85)+(116)+(117)	2021/02/10		NC	%	30 - 170
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/10		NC	%	30 - 170
			PentaCB-(88)+(91)	2021/02/10		NC	%	30 - 170
			22'346'-PentaCB-(89)	2021/02/10		49	%	30 - 170
			PentaCB-(90)+(101)+(113)	2021/02/10		NC	%	30 - 170
			22'355'-PentaCB-(92)	2021/02/10		NC	%	30 - 170
			PentaCB-(93)+(98)+(100)+(102)	2021/02/10		NC	%	30 - 170
			22'356'-PentaCB-(94)	2021/02/10		68	%	30 - 170
			22'35'6-PentaCB-(95)	2021/02/10		NC	%	30 - 170
			22'366'-PentaCB-(96)	2021/02/10		62	%	30 - 170
			22'45'6-PentaCB-(103)	2021/02/10		75	%	30 - 170
			22'466'-PentaCB-(104)	2021/02/10		93	%	81 - 118
			233'44'-PentaCB-(105)	2021/02/10		NC	%	84 - 127
			233'45-PentaCB-(106)	2021/02/10		115	%	30 - 170
			233'4'5-PentaCB-(107)	2021/02/10		NC	%	30 - 170
			PentaCB-(108)+(124)	2021/02/10		NC	%	30 - 170
			PentaCB-(110)+(115)	2021/02/10		NC	%	30 - 170
			233'55'-PentaCB-(111)	2021/02/10		91	%	30 - 170
			233'56-PentaCB-(112)	2021/02/10		107	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2344'5-PentaCB-(114)	2021/02/10		60 (4)	%	87 - 124
			23'44'5-PentaCB-(118)	2021/02/10		NC	%	79 - 137
			23'455'-PentaCB-(120)	2021/02/10		90	%	30 - 170
			23'45'6-PentaCB-(121)	2021/02/10		90	%	30 - 170
			233'4'5'-PentaCB-(122)	2021/02/10		62	%	30 - 170
			23'44'5'-PentaCB-(123)	2021/02/10		85	%	81 - 134
			33'44'5-PentaCB-(126)	2021/02/10		111	%	79 - 123
			33'455'-PentaCB-(127)	2021/02/10		89	%	30 - 170
			HexaCB-(128)+(166)	2021/02/10		NC	%	30 - 170
			HexaCB-(129)+(138)+(163)	2021/02/10		NC	%	30 - 170
			22'33'45'-HexaCB-(130)	2021/02/10		NC	%	30 - 170
			22'33'46-HexaCB-(131)	2021/02/10		34	%	30 - 170
			22'33'46'-HexaCB-(132)	2021/02/10		NC	%	30 - 170
			22'33'55'-HexaCB-(133)	2021/02/10		58	%	30 - 170
			HexaCB-(134)+(143)	2021/02/10		NC	%	30 - 170
			HexaCB-(135)+(151)	2021/02/10		NC	%	30 - 170
			22'33'66'-HexaCB-(136)	2021/02/10		NC	%	30 - 170
			22'344'5-HexaCB-(137)	2021/02/10		NC	%	30 - 170
			HexaCB-(139)+(140)	2021/02/10		NC	%	30 - 170
			22'3455'-HexaCB-(141)	2021/02/10		NC	%	30 - 170
			22'3456-HexaCB-(142)	2021/02/10		94	%	30 - 170
			22'345'6-HexaCB-(144)	2021/02/10		NC	%	30 - 170
			22'3466'-HexaCB-(145)	2021/02/10		91	%	30 - 170
			22'34'55'-HexaCB-(146)	2021/02/10		NC	%	30 - 170
			HexaCB-(147)+(149)	2021/02/10		NC	%	30 - 170
			22'34'56'-HexaCB-(148)	2021/02/10		91	%	30 - 170
			22'34'66'-HexaCB-(150)	2021/02/10		88	%	30 - 170
			22'3566'-HexaCB-(152)	2021/02/10		93	%	30 - 170
			HexaCB-(153)+(168)	2021/02/10		NC	%	30 - 170
			22'44'56'-HexaCB-(154)	2021/02/10		75	%	30 - 170
			22'44'66'-HexaCB-(155)	2021/02/10		99	%	76 - 121
			HexaCB-(156)+(157)	2021/02/10		NC	%	84 - 125
			233'44'6-HexaCB-(158)	2021/02/10		NC	%	30 - 170
			233'455'-HexaCB-(159)	2021/02/10		79	%	30 - 170
			233'456-HexaCB-(160)	2021/02/10		102	%	30 - 170
			233'45'6-HexaCB-(161)	2021/02/10		78	%	30 - 170
			233'4'55'-HexaCB-(162)	2021/02/10		96	%	30 - 170
			233'4'5'6-HexaCB-(164)	2021/02/10		NC	%	30 - 170
			233'55'6-HexaCB-(165)	2021/02/10		98	%	30 - 170
			23'44'55'-HexaCB-(167)	2021/02/10		NC	%	82 - 132
			33'44'55'-HexaCB-(169)	2021/02/10		108	%	77 - 121
			22'33'44'5-HeptaCB-(170)	2021/02/10		NC	%	30 - 170
			HeptaCB-(171)+(173)	2021/02/10		NC	%	30 - 170
			22'33'455'-HeptaCB-(172)	2021/02/10		NC	%	30 - 170
			22'33'456'-HeptaCB-(174)	2021/02/10		NC	%	30 - 170
			22'33'45'6-HeptaCB-(175)	2021/02/10		60	%	30 - 170
			22'33'466'-HeptaCB-(176)	2021/02/10		NC	%	30 - 170
			22'33'45'6'-HeptaCB-(177)	2021/02/10		NC	%	30 - 170
			22'33'55'6-HeptaCB-(178)	2021/02/10		NC	%	30 - 170
			22'33'566'-HeptaCB-(179)	2021/02/10		NC	%	30 - 170
			HeptaCB-(180)+(193)	2021/02/10		NC	%	30 - 170
			22'344'56-HeptaCB-(181)	2021/02/10		84	%	30 - 170
			22'344'56'-HeptaCB-(182)	2021/02/10		84	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'344'5'6-HeptaCB-(183)	2021/02/10		NC	%	30 - 170
			22'344'66'-HeptaCB-(184)	2021/02/10		92	%	30 - 170
			22'3455'6-HeptaCB-(185)	2021/02/10		144	%	30 - 170
			22'34566'-HeptaCB-(186)	2021/02/10		89	%	30 - 170
			22'34'55'6-HeptaCB-(187)	2021/02/10		NC	%	30 - 170
			22'34'566'-HeptaCB-(188)	2021/02/10		94	%	78 - 117
			233'44'55'-HeptaCB-(189)	2021/02/10		74 (4)	%	85 - 119
			233'44'56-HeptaCB-(190)	2021/02/10		NC	%	30 - 170
			233'44'5'6-HeptaCB-(191)	2021/02/10		66	%	30 - 170
			233'455'6-HeptaCB-(192)	2021/02/10		100	%	30 - 170
			22'33'44'55'-OctaCB-(194)	2021/02/10		NC	%	30 - 170
			22'33'44'56-OctaCB-(195)	2021/02/10		NC	%	30 - 170
			22'33'44'56'-OctaCB-(196)	2021/02/10		NC	%	30 - 170
			22'33'44'66'OctaCB-(197)	2021/02/10		74	%	30 - 170
			OctaCB-(198)+(199)	2021/02/10		NC	%	30 - 170
			22'33'4566'-OctaCB-(200)	2021/02/10		83	%	30 - 170
			22'33'45'66'-OctaCB-(201)	2021/02/10		76	%	30 - 170
			22'33'55'66'-OctaCB-(202)	2021/02/10		NC	%	76 - 118
			22'344'55'6-OctaCB-(203)	2021/02/10		NC	%	30 - 170
			22'344'566'-OctaCB-(204)	2021/02/10		102	%	30 - 170
			233'44'55'6-OctaCB-(205)	2021/02/10		92	%	72 - 128
			22'33'44'55'6-NonaCB-(206)	2021/02/10		NC	%	74 - 121
			22'33'44'566'-NonaCB-(207)	2021/02/10		92	%	30 - 170
			22'33'455'66'-NonaCB-(208)	2021/02/10		90	%	80 - 120
			DecaCB-(209)	2021/02/10		111	%	83 - 133
7189553	HSO	Spiked Blank	C13-2,44'-TriCB-(28)	2021/02/10		51	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/10		81	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/10		127	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/10		115	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/10		164 (4)	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/10		94	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/10		131	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/10		95	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/10		101	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/10		80	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/10		66	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/10		54	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/10		51	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/10		85	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/10		91	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/10		64	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/10		77	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/10		62	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/10		62	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/10		64	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/10		63	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/10		38	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/10		44	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/10		56	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/10		65	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/10		63	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/10		58	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/10		54	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-4-MonoCB-(3)	2021/02/10		39	%	15 - 150
			C13-DecaCB-(209)	2021/02/10		83	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/10		60	%	25 - 150
			2-MonoCB-(1)	2021/02/10		90	%	48 - 136
			3-MonoCB-(2)	2021/02/10		96	%	30 - 170
			4-MonoCB-(3)	2021/02/10		94	%	58 - 137
			22'-DiCB-(4)	2021/02/10		98	%	57 - 140
			2,3-DiCB-(5)	2021/02/10		89	%	30 - 170
			2,3'-DiCB-(6)	2021/02/10		86	%	30 - 170
			2,4-DiCB-(7)	2021/02/10		84	%	30 - 170
			2,4'-DiCB-(8)	2021/02/10		61	%	30 - 170
			2,5-DiCB-(9)	2021/02/10		92	%	30 - 170
			2,6-DiCB-(10)	2021/02/10		77	%	30 - 170
			3,3'-DiCB-(11)	2021/02/10		112	%	30 - 170
			DiCB-(12)+(13)	2021/02/10		99	%	30 - 170
			3,5-DiCB-(14)	2021/02/10		103	%	30 - 170
			4,4'-DiCB-(15)	2021/02/10		107	%	64 - 148
			22'3-TriCB-(16)	2021/02/10		63	%	30 - 170
			22'4-TriCB-(17)	2021/02/10		70	%	30 - 170
			TriCB-(18)+(30)	2021/02/10		74	%	30 - 170
			22'6-TriCB-(19)	2021/02/10		100	%	74 - 125
			TriCB-(20) + (28)	2021/02/10		87	%	30 - 170
			TriCB-(21)+(33)	2021/02/10		87	%	30 - 170
			234'-TriCB-(22)	2021/02/10		97	%	30 - 170
			235-TriCB-(23)	2021/02/10		94	%	30 - 170
			236-TriCB-(24)	2021/02/10		77	%	30 - 170
			23'4-TriCB-(25)	2021/02/10		81	%	30 - 170
			TriCB-(26)+(29)	2021/02/10		90	%	30 - 170
			23'6-TriCB-(27)	2021/02/10		85	%	30 - 170
			24'5-TriCB-(31)	2021/02/10		88	%	30 - 170
			24'6-TriCB-(32)	2021/02/10		79	%	30 - 170
			23'5'-TriCB-(34)	2021/02/10		82	%	30 - 170
			33'4-TriCB-(35)	2021/02/10		103	%	30 - 170
			33'5-TriCB-(36)	2021/02/10		97	%	30 - 170
			344'-TriCB-(37)	2021/02/10		103	%	61 - 148
			345-TriCB-(38)	2021/02/10		103	%	30 - 170
			34'5-TriCB-(39)	2021/02/10		102	%	30 - 170
			TetraCB-(40)+(41)+(71)	2021/02/10		98	%	30 - 170
			22'34'-TetraCB-(42)	2021/02/10		82	%	30 - 170
			22'35-TetraCB-(43)	2021/02/10		104	%	30 - 170
			TetraCB-(44)+(47)+(65)	2021/02/10		87	%	30 - 170
			TetraCB-(45)+(51)	2021/02/10		82	%	30 - 170
			22'36'-TetraCB-(46)	2021/02/10		81	%	30 - 170
			22'45-TetraCB-(48)	2021/02/10		90	%	30 - 170
			TetraCB-(49)+TetraCB-(69)	2021/02/10		86	%	30 - 170
			TetraCB-(50)+(53)	2021/02/10		79	%	30 - 170
			22'55'-TetraCB-(52)	2021/02/10		98	%	30 - 170
			22'66'-TetraCB-(54)	2021/02/10		107	%	67 - 124
			233'4-TetraCB-(55)	2021/02/10		98	%	30 - 170
			233'4'-Tetra CB(56)	2021/02/10		100	%	30 - 170
			233'5-TetraCB-(57)	2021/02/10		97	%	30 - 170
			233'5'-TetraCB-(58)	2021/02/10		105	%	30 - 170
			TetraCB-(59)+(62)+(75)	2021/02/10		93	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2344'-TetraCB -(60)	2021/02/10		102	%	30 - 170
			TetraCB-(61)+(70)+(74)+(76)	2021/02/10		98	%	30 - 170
			234'5-TetraCB-(63)	2021/02/10		100	%	30 - 170
			234'6-TetraCB-(64)	2021/02/10		88	%	30 - 150
			23'44'-TetraCB-(66)	2021/02/10		104	%	30 - 170
			23'45-TetraCB-(67)	2021/02/10		96	%	30 - 170
			23'45'-TetraCB-(68)	2021/02/10		97	%	30 - 170
			23'55'-TetraCB-(72)	2021/02/10		97	%	30 - 170
			23'5'6-TetraCB-(73)	2021/02/10		75	%	30 - 170
			33'44'-TetraCB-(77)	2021/02/10		97	%	75 - 118
			33'45-TetraCB-(78)	2021/02/10		107	%	30 - 170
			33'45'-TetraCB(79)	2021/02/10		108	%	30 - 170
			33'55'-TetraCB-(80)	2021/02/10		101	%	30 - 170
			344'5-TetraCB-(81)	2021/02/10		106	%	78 - 124
			22'33'4-PentaCB-(82)	2021/02/10		97	%	30 - 170
			PentaCB-(83)+(99)	2021/02/10		89	%	30 - 170
			22'33'6-PentaCB-(84)	2021/02/10		90	%	30 - 170
			PentaCB-(85)+(116)+(117)	2021/02/10		91	%	30 - 170
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/10		95	%	30 - 170
			PentaCB-(88)+(91)	2021/02/10		92	%	30 - 170
			22'346'-PentaCB-(89)	2021/02/10		95	%	30 - 170
			PentaCB-(90)+(101)+(113)	2021/02/10		96	%	30 - 170
			22'355'-PentaCB-(92)	2021/02/10		95	%	30 - 170
			PentaCB-(93)+(98)+(100)+(102)	2021/02/10		87	%	30 - 170
			22'356'-PentaCB-(94)	2021/02/10		89	%	30 - 170
			22'35'6-PentaCB-(95)	2021/02/10		92	%	30 - 170
			22'366'-PentaCB-(96)	2021/02/10		86	%	30 - 170
			22'45'6-PentaCB-(103)	2021/02/10		91	%	30 - 170
			22'466'-PentaCB-(104)	2021/02/10		93	%	81 - 118
			233'44'-PentaCB-(105)	2021/02/10		108	%	84 - 127
			233'45-PentaCB-(106)	2021/02/10		95	%	30 - 170
			233'4'5-PentaCB-(107)	2021/02/10		91	%	30 - 170
			PentaCB-(108)+(124)	2021/02/10		96	%	30 - 170
			PentaCB-(110)+(115)	2021/02/10		95	%	30 - 170
			233'55'-PentaCB-(111)	2021/02/10		94	%	30 - 170
			233'56-PentaCB-(112)	2021/02/10		100	%	30 - 170
			2344'5-PentaCB-(114)	2021/02/10		107	%	87 - 124
			23'44'5-PentaCB-(118)	2021/02/10		101	%	79 - 137
			23'455'-PentaCB-(120)	2021/02/10		96	%	30 - 170
			23'45'6-PentaCB-(121)	2021/02/10		93	%	30 - 170
			233'4'5'-PentaCB-(122)	2021/02/10		97	%	30 - 170
			23'44'5'-PentaCB-(123)	2021/02/10		113	%	81 - 134
			33'44'5-PentaCB-(126)	2021/02/10		104	%	79 - 123
			33'455'-PentaCB-(127)	2021/02/10		88	%	30 - 170
			HexaCB-(128)+(166)	2021/02/10		112	%	30 - 170
			HexaCB-(129)+(138)+(163)	2021/02/10		108	%	30 - 170
			22'33'45'-HexaCB-(130)	2021/02/10		114	%	30 - 170
			22'33'46-HexaCB-(131)	2021/02/10		115	%	30 - 170
			22'33'46'-HexaCB-(132)	2021/02/10		119	%	30 - 170
			22'33'55'-HexaCB-(133)	2021/02/10		119	%	30 - 170
			HexaCB-(134)+(143)	2021/02/10		118	%	30 - 170
			HexaCB-(135)+(151)	2021/02/10		124	%	30 - 170
			22'33'66'-HexaCB-(136)	2021/02/10		121	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'344'5-HexaCB-(137)	2021/02/10		108	%	30 - 170
			HexaCB-(139)+(140)	2021/02/10		118	%	30 - 170
			22'3455'-HexaCB-(141)	2021/02/10		115	%	30 - 170
			22'3456-HexaCB-(142)	2021/02/10		120	%	30 - 170
			22'345'6-HexaCB-(144)	2021/02/10		128	%	30 - 170
			22'3466'-HexaCB-(145)	2021/02/10		121	%	30 - 170
			22'34'55'-HexaCB-(146)	2021/02/10		110	%	30 - 170
			HexaCB-(147)+(149)	2021/02/10		123	%	30 - 170
			22'34'56'-HexaCB-(148)	2021/02/10		122	%	30 - 170
			22'34'66'-HexaCB-(150)	2021/02/10		124	%	30 - 170
			22'3566'-HexaCB-(152)	2021/02/10		120	%	30 - 170
			HexaCB-(153)+(168)	2021/02/10		111	%	30 - 170
			22'44'56'-HexaCB-(154)	2021/02/10		119	%	30 - 170
			22'44'66'-HexaCB-(155)	2021/02/10		92	%	76 - 121
			HexaCB-(156)+(157)	2021/02/10		103	%	84 - 125
			233'44'6-HexaCB-(158)	2021/02/10		108	%	30 - 170
			233'455'-HexaCB-(159)	2021/02/10		104	%	30 - 170
			233'456-HexaCB-(160)	2021/02/10		111	%	30 - 170
			233'45'6-HexaCB-(161)	2021/02/10		118	%	30 - 170
			233'4'55'-HexaCB-(162)	2021/02/10		101	%	30 - 170
			233'4'5'6-HexaCB-(164)	2021/02/10		111	%	30 - 170
			233'55'6-HexaCB-(165)	2021/02/10		120	%	30 - 170
			23'44'55'-HexaCB-(167)	2021/02/10		106	%	82 - 132
			33'44'55'-HexaCB-(169)	2021/02/10		105	%	77 - 121
			22'33'44'5-HeptaCB-(170)	2021/02/10		89	%	30 - 170
			HeptaCB-(171)+(173)	2021/02/10		106	%	30 - 170
			22'33'455'-HeptaCB-(172)	2021/02/10		96	%	30 - 170
			22'33'456'-HeptaCB-(174)	2021/02/10		106	%	30 - 170
			22'33'45'6-HeptaCB-(175)	2021/02/10		111	%	30 - 170
			22'33'466'-HeptaCB-(176)	2021/02/10		124	%	30 - 170
			22'33'45'6'-HeptaCB-(177)	2021/02/10		110	%	30 - 170
			22'33'55'6-HeptaCB-(178)	2021/02/10		114	%	30 - 170
			22'33'566'-HeptaCB-(179)	2021/02/10		124	%	30 - 170
			HeptaCB-(180)+(193)	2021/02/10		91	%	30 - 170
			22'344'56-HeptaCB-(181)	2021/02/10		104	%	30 - 170
			22'344'56'-HeptaCB-(182)	2021/02/10		110	%	30 - 170
			22'344'5'6-HeptaCB-(183)	2021/02/10		129	%	30 - 170
			22'344'66'-HeptaCB-(184)	2021/02/10		118	%	30 - 170
			22'3455'6-HeptaCB-(185)	2021/02/10		92	%	30 - 170
			22'34566'-HeptaCB-(186)	2021/02/10		119	%	30 - 170
			22'34'55'6-HeptaCB-(187)	2021/02/10		116	%	30 - 170
			22'34'566'-HeptaCB-(188)	2021/02/10		97	%	78 - 117
			233'44'55'-HeptaCB-(189)	2021/02/10		100	%	85 - 119
			233'44'56-HeptaCB-(190)	2021/02/10		84	%	30 - 170
			233'44'5'6-HeptaCB-(191)	2021/02/10		91	%	30 - 170
			233'455'6-HeptaCB-(192)	2021/02/10		91	%	30 - 170
			22'33'44'55'-OctaCB-(194)	2021/02/10		73	%	30 - 170
			22'33'44'56-OctaCB-(195)	2021/02/10		90	%	30 - 170
			22'33'44'56'-OctaCB-(196)	2021/02/10		97	%	30 - 170
			22'33'44'66'OctaCB-(197)	2021/02/10		95	%	30 - 170
			OctaCB-(198)+(199)	2021/02/10		98	%	30 - 170
			22'33'4566'-OctaCB-(200)	2021/02/10		143	%	30 - 170
			22'33'45'66'-OctaCB-(201)	2021/02/10		120	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'55'66'-OctaCB-(202)	2021/02/10		96	%	76 - 118
			22'344'55'6-OctaCB-(203)	2021/02/10		92	%	30 - 170
			22'344'566'-OctaCB-(204)	2021/02/10		116	%	30 - 170
			233'44'55'6-OctaCB-(205)	2021/02/10		96	%	72 - 128
			22'33'44'55'6-NonaCB-(206)	2021/02/10		105	%	74 - 121
			22'33'44'566'-NonaCB-(207)	2021/02/10		103	%	30 - 170
			22'33'455'66'-NonaCB-(208)	2021/02/10		101	%	80 - 120
			DecaCB-(209)	2021/02/10		111	%	83 - 133
7189553	HSO	Spiked Blank DUP	C13-2,44'-TriCB-(28)	2021/02/10		55	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/10		83	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/10		134	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/10		117	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/10		171 (4)	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/10		97	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/10		136 (4)	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/10		98	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/10		102	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/10		79	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/10		65	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/10		52	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/10		47	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/10		87	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/10		93	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/10		69	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/10		80	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/10		65	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/10		66	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/10		69	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/10		69	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/10		34	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/10		49	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/10		61	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/10		70	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/10		68	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/10		62	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/10		54	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/10		36	%	15 - 150
			C13-DecaCB-(209)	2021/02/10		84	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/10		64	%	25 - 150
			2-MonoCB-(1)	2021/02/10		94	%	48 - 136
			3-MonoCB-(2)	2021/02/10		103	%	30 - 170
			4-MonoCB-(3)	2021/02/10		98	%	58 - 137
			22'-DiCB-(4)	2021/02/10		100	%	57 - 140
			2,3-DiCB-(5)	2021/02/10		93	%	30 - 170
			2,3'-DiCB-(6)	2021/02/10		86	%	30 - 170
			2,4-DiCB-(7)	2021/02/10		77	%	30 - 170
			2,4'-DiCB-(8)	2021/02/10		46	%	30 - 170
			2,5-DiCB-(9)	2021/02/10		92	%	30 - 170
			2,6-DiCB-(10)	2021/02/10		73	%	30 - 170
			3,3'-DiCB-(11)	2021/02/10		109	%	30 - 170
			DiCB-(12)+(13)	2021/02/10		100	%	30 - 170
			3,5-DiCB-(14)	2021/02/10		99	%	30 - 170
			4,4'-DiCB-(15)	2021/02/10		103	%	64 - 148

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'3-TriCB-(16)	2021/02/10		55	%	30 - 170
			22'4-TriCB-(17)	2021/02/10		67	%	30 - 170
			TriCB-(18)+(30)	2021/02/10		71	%	30 - 170
			22'6-TriCB-(19)	2021/02/10		100	%	74 - 125
			TriCB-(20) + (28)	2021/02/10		90	%	30 - 170
			TriCB-(21)+(33)	2021/02/10		91	%	30 - 170
			234'-TriCB-(22)	2021/02/10		96	%	30 - 170
			235-TriCB-(23)	2021/02/10		89	%	30 - 170
			236-TriCB-(24)	2021/02/10		76	%	30 - 170
			23'4-TriCB-(25)	2021/02/10		78	%	30 - 170
			TriCB-(26)+(29)	2021/02/10		90	%	30 - 170
			23'6-TriCB-(27)	2021/02/10		85	%	30 - 170
			24'5-TriCB-(31)	2021/02/10		90	%	30 - 170
			24'6-TriCB-(32)	2021/02/10		77	%	30 - 170
			23'5'-TriCB-(34)	2021/02/10		83	%	30 - 170
			33'4-TriCB-(35)	2021/02/10		103	%	30 - 170
			33'5-TriCB-(36)	2021/02/10		101	%	30 - 170
			344'-TriCB-(37)	2021/02/10		101	%	61 - 148
			345-TriCB-(38)	2021/02/10		101	%	30 - 170
			34'5-TriCB-(39)	2021/02/10		101	%	30 - 170
			TetraCB-(40)+(41)+(71)	2021/02/10		97	%	30 - 170
			22'34'-TetraCB-(42)	2021/02/10		91	%	30 - 170
			22'35-TetraCB-(43)	2021/02/10		97	%	30 - 170
			TetraCB-(44)+(47)+(65)	2021/02/10		88	%	30 - 170
			TetraCB-(45)+(51)	2021/02/10		82	%	30 - 170
			22'36'-TetraCB-(46)	2021/02/10		80	%	30 - 170
			22'45-TetraCB-(48)	2021/02/10		86	%	30 - 170
			TetraCB-(49)+TetraCB-(69)	2021/02/10		85	%	30 - 170
			TetraCB-(50)+(53)	2021/02/10		78	%	30 - 170
			22'55'-TetraCB-(52)	2021/02/10		83	%	30 - 170
			22'66'-TetraCB-(54)	2021/02/10		108	%	67 - 124
			233'4-TetraCB-(55)	2021/02/10		101	%	30 - 170
			233'4'-Tetra CB(56)	2021/02/10		106	%	30 - 170
			233'5-TetraCB-(57)	2021/02/10		100	%	30 - 170
			233'5'-TetraCB-(58)	2021/02/10		101	%	30 - 170
			TetraCB-(59)+(62)+(75)	2021/02/10		89	%	30 - 170
			2344'-TetraCB -(60)	2021/02/10		106	%	30 - 170
			TetraCB-(61)+(70)+(74)+(76)	2021/02/10		101	%	30 - 170
			234'5-TetraCB-(63)	2021/02/10		104	%	30 - 170
			234'6-TetraCB-(64)	2021/02/10		90	%	30 - 150
			23'44'-TetraCB-(66)	2021/02/10		110	%	30 - 170
			23'45-TetraCB-(67)	2021/02/10		103	%	30 - 170
			23'45'-TetraCB-(68)	2021/02/10		99	%	30 - 170
			23'55'-TetraCB-(72)	2021/02/10		99	%	30 - 170
			23'5'6-TetraCB-(73)	2021/02/10		87	%	30 - 170
			33'44'-TetraCB-(77)	2021/02/10		96	%	75 - 118
			33'45-TetraCB-(78)	2021/02/10		110	%	30 - 170
			33'45'-TetraCB(79)	2021/02/10		108	%	30 - 170
			33'55'-TetraCB-(80)	2021/02/10		105	%	30 - 170
			344'5-TetraCB-(81)	2021/02/10		103	%	78 - 124
			22'33'4-PentaCB-(82)	2021/02/10		100	%	30 - 170
			PentaCB-(83)+(99)	2021/02/10		91	%	30 - 170
			22'33'6-PentaCB-(84)	2021/02/10		89	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			PentaCB-(85)+(116)+(117)	2021/02/10		85	%	30 - 170
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/10		94	%	30 - 170
			PentaCB-(88)+(91)	2021/02/10		91	%	30 - 170
			22'346'-PentaCB-(89)	2021/02/10		94	%	30 - 170
			PentaCB-(90)+(101)+(113)	2021/02/10		94	%	30 - 170
			22'355'-PentaCB-(92)	2021/02/10		93	%	30 - 170
			PentaCB-(93)+(98)+(100)+(102)	2021/02/10		85	%	30 - 170
			22'356'-PentaCB-(94)	2021/02/10		88	%	30 - 170
			22'35'6-PentaCB-(95)	2021/02/10		87	%	30 - 170
			22'366'-PentaCB-(96)	2021/02/10		83	%	30 - 170
			22'45'6-PentaCB-(103)	2021/02/10		87	%	30 - 170
			22'466'-PentaCB-(104)	2021/02/10		95	%	81 - 118
			233'44'-PentaCB-(105)	2021/02/10		108	%	84 - 127
			233'45-PentaCB-(106)	2021/02/10		105	%	30 - 170
			233'4'5-PentaCB-(107)	2021/02/10		95	%	30 - 170
			PentaCB-(108)+(124)	2021/02/10		97	%	30 - 170
			PentaCB-(110)+(115)	2021/02/10		101	%	30 - 170
			233'55'-PentaCB-(111)	2021/02/10		95	%	30 - 170
			233'56-PentaCB-(112)	2021/02/10		95	%	30 - 170
			2344'5-PentaCB-(114)	2021/02/10		108	%	87 - 124
			23'44'5-PentaCB-(118)	2021/02/10		101	%	79 - 137
			23'455'-PentaCB-(120)	2021/02/10		95	%	30 - 170
			23'45'6-PentaCB-(121)	2021/02/10		91	%	30 - 170
			233'4'5'-PentaCB-(122)	2021/02/10		98	%	30 - 170
			23'44'5'-PentaCB-(123)	2021/02/10		103	%	81 - 134
			33'44'5-PentaCB-(126)	2021/02/10		105	%	79 - 123
			33'455'-PentaCB-(127)	2021/02/10		92	%	30 - 170
			HexaCB-(128)+(166)	2021/02/10		111	%	30 - 170
			HexaCB-(129)+(138)+(163)	2021/02/10		110	%	30 - 170
			22'33'45'-HexaCB-(130)	2021/02/10		117	%	30 - 170
			22'33'46-HexaCB-(131)	2021/02/10		108	%	30 - 170
			22'33'46'-HexaCB-(132)	2021/02/10		122	%	30 - 170
			22'33'55'-HexaCB-(133)	2021/02/10		118	%	30 - 170
			HexaCB-(134)+(143)	2021/02/10		119	%	30 - 170
			HexaCB-(135)+(151)	2021/02/10		119	%	30 - 170
			22'33'66'-HexaCB-(136)	2021/02/10		120	%	30 - 170
			22'344'5-HexaCB-(137)	2021/02/10		114	%	30 - 170
			HexaCB-(139)+(140)	2021/02/10		117	%	30 - 170
			22'3455'-HexaCB-(141)	2021/02/10		113	%	30 - 170
			22'3456-HexaCB-(142)	2021/02/10		123	%	30 - 170
			22'345'6-HexaCB-(144)	2021/02/10		124	%	30 - 170
			22'3466'-HexaCB-(145)	2021/02/10		119	%	30 - 170
			22'34'55'-HexaCB-(146)	2021/02/10		113	%	30 - 170
			HexaCB-(147)+(149)	2021/02/10		116	%	30 - 170
			22'34'56'-HexaCB-(148)	2021/02/10		118	%	30 - 170
			22'34'66'-HexaCB-(150)	2021/02/10		118	%	30 - 170
			22'3566'-HexaCB-(152)	2021/02/10		119	%	30 - 170
			HexaCB-(153)+(168)	2021/02/10		113	%	30 - 170
			22'44'56'-HexaCB-(154)	2021/02/10		114	%	30 - 170
			22'44'66'-HexaCB-(155)	2021/02/10		93	%	76 - 121
			HexaCB-(156)+(157)	2021/02/10		104	%	84 - 125
			233'44'6-HexaCB-(158)	2021/02/10		108	%	30 - 170
			233'455'-HexaCB-(159)	2021/02/10		103	%	30 - 170

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'456-HexaCB-(160)	2021/02/10		105	%	30 - 170
			233'45'6-HexaCB-(161)	2021/02/10		116	%	30 - 170
			233'4'55'-HexaCB-(162)	2021/02/10		99	%	30 - 170
			233'4'5'6-HexaCB-(164)	2021/02/10		106	%	30 - 170
			233'55'6-HexaCB-(165)	2021/02/10		121	%	30 - 170
			23'44'55'-HexaCB-(167)	2021/02/10		104	%	82 - 132
			33'44'55'-HexaCB-(169)	2021/02/10		104	%	77 - 121
			22'33'44'5-HeptaCB-(170)	2021/02/10		90	%	30 - 170
			HeptaCB-(171)+(173)	2021/02/10		108	%	30 - 170
			22'33'455'-HeptaCB-(172)	2021/02/10		102	%	30 - 170
			22'33'456'-HeptaCB-(174)	2021/02/10		113	%	30 - 170
			22'33'45'6-HeptaCB-(175)	2021/02/10		111	%	30 - 170
			22'33'466'-HeptaCB-(176)	2021/02/10		124	%	30 - 170
			22'33'45'6'-HeptaCB-(177)	2021/02/10		115	%	30 - 170
			22'33'55'6-HeptaCB-(178)	2021/02/10		114	%	30 - 170
			22'33'566'-HeptaCB-(179)	2021/02/10		126	%	30 - 170
			HeptaCB-(180)+(193)	2021/02/10		92	%	30 - 170
			22'344'56-HeptaCB-(181)	2021/02/10		105	%	30 - 170
			22'344'56'-HeptaCB-(182)	2021/02/10		109	%	30 - 170
			22'344'5'6-HeptaCB-(183)	2021/02/10		116	%	30 - 170
			22'344'66'-HeptaCB-(184)	2021/02/10		119	%	30 - 170
			22'3455'6-HeptaCB-(185)	2021/02/10		101	%	30 - 170
			22'34566'-HeptaCB-(186)	2021/02/10		120	%	30 - 170
			22'34'55'6-HeptaCB-(187)	2021/02/10		117	%	30 - 170
			22'34'566'-HeptaCB-(188)	2021/02/10		98	%	78 - 117
			233'44'55'-HeptaCB-(189)	2021/02/10		102	%	85 - 119
			233'44'56-HeptaCB-(190)	2021/02/10		88	%	30 - 170
			233'44'5'6-HeptaCB-(191)	2021/02/10		93	%	30 - 170
			233'455'6-HeptaCB-(192)	2021/02/10		95	%	30 - 170
			22'33'44'55'-OctaCB-(194)	2021/02/10		74	%	30 - 170
			22'33'44'56-OctaCB-(195)	2021/02/10		92	%	30 - 170
			22'33'44'56'-OctaCB-(196)	2021/02/10		97	%	30 - 170
			22'33'44'66'OctaCB-(197)	2021/02/10		101	%	30 - 170
			OctaCB-(198)+(199)	2021/02/10		99	%	30 - 170
			22'33'4566'-OctaCB-(200)	2021/02/10		140	%	30 - 170
			22'33'45'66'-OctaCB-(201)	2021/02/10		121	%	30 - 170
			22'33'55'66'-OctaCB-(202)	2021/02/10		97	%	76 - 118
			22'344'55'6-OctaCB-(203)	2021/02/10		92	%	30 - 170
			22'344'566'-OctaCB-(204)	2021/02/10		116	%	30 - 170
			233'44'55'6-OctaCB-(205)	2021/02/10		99	%	72 - 128
			22'33'44'55'6-NonaCB-(206)	2021/02/10		102	%	74 - 121
			22'33'44'566'-NonaCB-(207)	2021/02/10		102	%	30 - 170
			22'33'455'66'-NonaCB-(208)	2021/02/10		102	%	80 - 120
			DecaCB-(209)	2021/02/10		110	%	83 - 133
7189553	HSO	RPD	2-MonoCB-(1)	2021/02/10	4.3		%	30
			3-MonoCB-(2)	2021/02/10	7.0		%	30
			4-MonoCB-(3)	2021/02/10	4.2		%	30
			22'-DiCB-(4)	2021/02/10	2.0		%	30
			2,3-DiCB-(5)	2021/02/10	4.4		%	30
			2,3'-DiCB-(6)	2021/02/10	0		%	30
			2,4-DiCB-(7)	2021/02/10	8.7		%	30
			2,4'-DiCB-(8)	2021/02/10	28		%	30
			2,5-DiCB-(9)	2021/02/10	0		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2,6-DiCB-(10)	2021/02/10	5.3		%	30
			3,3'-DiCB-(11)	2021/02/10	2.7		%	30
			DiCB-(12)+(13)	2021/02/10	1.0		%	30
			3,5-DiCB-(14)	2021/02/10	4.0		%	30
			4,4'-DiCB-(15)	2021/02/10	3.8		%	30
			22'3-TriCB-(16)	2021/02/10	14		%	30
			22'4-TriCB-(17)	2021/02/10	4.4		%	30
			TriCB-(18)+(30)	2021/02/10	4.1		%	30
			22'6-TriCB-(19)	2021/02/10	0		%	30
			TriCB-(20) + (28)	2021/02/10	3.4		%	30
			TriCB-(21)+(33)	2021/02/10	4.5		%	30
			234'-TriCB-(22)	2021/02/10	1.0		%	30
			235-TriCB-(23)	2021/02/10	5.5		%	30
			236-TriCB-(24)	2021/02/10	1.3		%	30
			23'4-TriCB-(25)	2021/02/10	3.8		%	30
			TriCB-(26)+(29)	2021/02/10	0		%	30
			23'6-TriCB-(27)	2021/02/10	0		%	30
			24'5-TriCB-(31)	2021/02/10	2.2		%	30
			24'6-TriCB-(32)	2021/02/10	2.6		%	30
			23'5'-TriCB-(34)	2021/02/10	1.2		%	30
			33'4-TriCB-(35)	2021/02/10	0		%	30
			33'5-TriCB-(36)	2021/02/10	4.0		%	30
			344'-TriCB-(37)	2021/02/10	2.0		%	30
			345-TriCB-(38)	2021/02/10	2.0		%	30
			34'5-TriCB-(39)	2021/02/10	0.99		%	30
			TetraCB-(40)+(41)+(71)	2021/02/10	1.0		%	30
			22'34'-TetraCB-(42)	2021/02/10	10		%	30
			22'35-TetraCB-(43)	2021/02/10	7.0		%	30
			TetraCB-(44)+(47)+(65)	2021/02/10	1.1		%	30
			TetraCB-(45)+(51)	2021/02/10	0		%	30
			22'36'-TetraCB-(46)	2021/02/10	1.2		%	30
			22'45-TetraCB-(48)	2021/02/10	4.5		%	30
			TetraCB-(49)+TetraCB-(69)	2021/02/10	1.2		%	30
			TetraCB-(50)+(53)	2021/02/10	1.3		%	30
			22'55'-TetraCB-(52)	2021/02/10	17		%	30
			22'66'-TetraCB-(54)	2021/02/10	0.93		%	30
			233'4-TetraCB-(55)	2021/02/10	3.0		%	30
			233'4'-Tetra CB(56)	2021/02/10	5.8		%	30
			233'5-TetraCB-(57)	2021/02/10	3.0		%	30
			233'5'-TetraCB-(58)	2021/02/10	3.9		%	30
			TetraCB-(59)+(62)+(75)	2021/02/10	4.4		%	30
			2344'-TetraCB -(60)	2021/02/10	3.8		%	30
			TetraCB-(61)+(70)+(74)+(76)	2021/02/10	3.0		%	30
			234'5-TetraCB-(63)	2021/02/10	3.9		%	30
			234'6-TetraCB-(64)	2021/02/10	2.2		%	30
			23'44'-TetraCB-(66)	2021/02/10	5.6		%	30
			23'45-TetraCB-(67)	2021/02/10	7.0		%	30
			23'45'-TetraCB-(68)	2021/02/10	2.0		%	30
			23'55'-TetraCB-(72)	2021/02/10	2.0		%	30
			23'5'6-TetraCB-(73)	2021/02/10	15		%	30
			33'44'-TetraCB-(77)	2021/02/10	1.0		%	30
			33'45-TetraCB-(78)	2021/02/10	2.8		%	30
			33'45'-TetraCB(79)	2021/02/10	0		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'55'-TetraCB-(80)	2021/02/10	3.9		%	30
			344'5-TetraCB-(81)	2021/02/10	2.9		%	30
			22'33'4-PentaCB-(82)	2021/02/10	3.0		%	30
			PentaCB-(83)+(99)	2021/02/10	2.2		%	30
			22'33'6-PentaCB-(84)	2021/02/10	1.1		%	30
			PentaCB-(85)+(116)+(117)	2021/02/10	6.8		%	30
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/10	1.1		%	30
			PentaCB-(88)+(91)	2021/02/10	1.1		%	30
			22'346'-PentaCB-(89)	2021/02/10	1.1		%	30
			PentaCB-(90)+(101)+(113)	2021/02/10	2.1		%	30
			22'355'-PentaCB-(92)	2021/02/10	2.1		%	30
			PentaCB-(93)+(98)+(100)+(102)	2021/02/10	2.3		%	30
			22'356'-PentaCB-(94)	2021/02/10	1.1		%	30
			22'35'6-PentaCB-(95)	2021/02/10	5.6		%	30
			22'366'-PentaCB-(96)	2021/02/10	3.6		%	30
			22'45'6-PentaCB-(103)	2021/02/10	4.5		%	30
			22'466'-PentaCB-(104)	2021/02/10	2.1		%	30
			233'44'-PentaCB-(105)	2021/02/10	0		%	30
			233'45-PentaCB-(106)	2021/02/10	10		%	30
			233'4'5-PentaCB-(107)	2021/02/10	4.3		%	30
			PentaCB-(108)+(124)	2021/02/10	1.0		%	30
			PentaCB-(110)+(115)	2021/02/10	6.1		%	30
			233'55'-PentaCB-(111)	2021/02/10	1.1		%	30
			233'56-PentaCB-(112)	2021/02/10	5.1		%	30
			2344'5-PentaCB-(114)	2021/02/10	0.93		%	30
			23'44'5-PentaCB-(118)	2021/02/10	0		%	30
			23'455'-PentaCB-(120)	2021/02/10	1.0		%	30
			23'45'6-PentaCB-(121)	2021/02/10	2.2		%	30
			233'4'5'-PentaCB-(122)	2021/02/10	1.0		%	30
			23'44'5'-PentaCB-(123)	2021/02/10	9.3		%	30
			33'44'5-PentaCB-(126)	2021/02/10	0.96		%	30
			33'455'-PentaCB-(127)	2021/02/10	4.4		%	30
			HexaCB-(128)+(166)	2021/02/10	0.90		%	30
			HexaCB-(129)+(138)+(163)	2021/02/10	1.8		%	30
			22'33'45'-HexaCB-(130)	2021/02/10	2.6		%	30
			22'33'46-HexaCB-(131)	2021/02/10	6.3		%	30
			22'33'46'-HexaCB-(132)	2021/02/10	2.5		%	30
			22'33'55'-HexaCB-(133)	2021/02/10	0.84		%	30
			HexaCB-(134)+(143)	2021/02/10	0.84		%	30
			HexaCB-(135)+(151)	2021/02/10	4.1		%	30
			22'33'66'-HexaCB-(136)	2021/02/10	0.83		%	30
			22'344'5-HexaCB-(137)	2021/02/10	5.4		%	30
			HexaCB-(139)+(140)	2021/02/10	0.85		%	30
			22'3455'-HexaCB-(141)	2021/02/10	1.8		%	30
			22'3456-HexaCB-(142)	2021/02/10	2.5		%	30
			22'345'6-HexaCB-(144)	2021/02/10	3.2		%	30
			22'3466'-HexaCB-(145)	2021/02/10	1.7		%	30
			22'34'55'-HexaCB-(146)	2021/02/10	2.7		%	30
			HexaCB-(147)+(149)	2021/02/10	5.9		%	30
			22'34'56'-HexaCB-(148)	2021/02/10	3.3		%	30
			22'34'66'-HexaCB-(150)	2021/02/10	5.0		%	30
			22'3566'-HexaCB-(152)	2021/02/10	0.84		%	30
			HexaCB-(153)+(168)	2021/02/10	1.8		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'44'56'-HexaCB-(154)	2021/02/10	4.3		%	30
			22'44'66'-HexaCB-(155)	2021/02/10	1.1		%	30
			HexaCB-(156)+(157)	2021/02/10	0.97		%	30
			233'44'6-HexaCB-(158)	2021/02/10	0		%	30
			233'455'-HexaCB-(159)	2021/02/10	0.97		%	30
			233'456-HexaCB-(160)	2021/02/10	5.6		%	30
			233'45'6-HexaCB-(161)	2021/02/10	1.7		%	30
			233'4'55'-HexaCB-(162)	2021/02/10	2.0		%	30
			233'4'5'6-HexaCB-(164)	2021/02/10	4.6		%	30
			233'55'6-HexaCB-(165)	2021/02/10	0.83		%	30
			23'44'55'-HexaCB-(167)	2021/02/10	1.9		%	30
			33'44'55'-HexaCB-(169)	2021/02/10	0.96		%	30
			22'33'44'5-HeptaCB-(170)	2021/02/10	1.1		%	30
			HeptaCB-(171)+(173)	2021/02/10	1.9		%	30
			22'33'455'-HeptaCB-(172)	2021/02/10	6.1		%	30
			22'33'456'-HeptaCB-(174)	2021/02/10	6.4		%	30
			22'33'45'6-HeptaCB-(175)	2021/02/10	0		%	30
			22'33'466'-HeptaCB-(176)	2021/02/10	0		%	30
			22'33'45'6'-HeptaCB-(177)	2021/02/10	4.4		%	30
			22'33'55'6-HeptaCB-(178)	2021/02/10	0		%	30
			22'33'566'-HeptaCB-(179)	2021/02/10	1.6		%	30
			HeptaCB-(180)+(193)	2021/02/10	1.1		%	30
			22'344'56-HeptaCB-(181)	2021/02/10	0.96		%	30
			22'344'56'-HeptaCB-(182)	2021/02/10	0.91		%	30
			22'344'5'6-HeptaCB-(183)	2021/02/10	11		%	30
			22'344'66'-HeptaCB-(184)	2021/02/10	0.84		%	30
			22'3455'6-HeptaCB-(185)	2021/02/10	9.3		%	30
			22'34566'-HeptaCB-(186)	2021/02/10	0.84		%	30
			22'34'55'6-HeptaCB-(187)	2021/02/10	0.86		%	30
			22'34'566'-HeptaCB-(188)	2021/02/10	1.0		%	30
			233'44'55'-HeptaCB-(189)	2021/02/10	2.0		%	30
			233'44'56-HeptaCB-(190)	2021/02/10	4.7		%	30
			233'44'5'6-HeptaCB-(191)	2021/02/10	2.2		%	30
			233'455'6-HeptaCB-(192)	2021/02/10	4.3		%	30
			22'33'44'55'-OctaCB-(194)	2021/02/10	1.4		%	30
			22'33'44'56-OctaCB-(195)	2021/02/10	2.2		%	30
			22'33'44'56'-OctaCB-(196)	2021/02/10	0		%	30
			22'33'44'66'OctaCB-(197)	2021/02/10	6.1		%	30
			OctaCB-(198)+(199)	2021/02/10	1.0		%	30
			22'33'4566'-OctaCB-(200)	2021/02/10	2.1		%	30
			22'33'45'66'-OctaCB-(201)	2021/02/10	0.83		%	30
			22'33'55'66'-OctaCB-(202)	2021/02/10	1.0		%	30
			22'344'55'6-OctaCB-(203)	2021/02/10	0		%	30
			22'344'566'-OctaCB-(204)	2021/02/10	0		%	30
			233'44'55'6-OctaCB-(205)	2021/02/10	3.1		%	30
			22'33'44'55'6-NonaCB-(206)	2021/02/10	2.9		%	30
			22'33'44'566'-NonaCB-(207)	2021/02/10	0.98		%	30
			22'33'455'66'-NonaCB-(208)	2021/02/10	0.99		%	30
			DecaCB-(209)	2021/02/10	0.90		%	30
7189553	HSO	Method Blank	C13-2,44'-TriCB-(28)	2021/02/10		56	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/10		82	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/10		122	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/10		109	%	25 - 150

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'33'55'66'-OctaCB-(202)	2021/02/10		143	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/10		95	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/10		124	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/10		91	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/10		92	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/10		76	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/10		67	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/10		58	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/10		55	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/10		86	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/10		93	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/10		71	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/10		80	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/10		69	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/10		69	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/10		70	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/10		69	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/10		44	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/10		55	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/10		66	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/10		71	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/10		68	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/10		60	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/10		58	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/10		44	%	15 - 150
			C13-DecaCB-(209)	2021/02/10		81	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/10		70	%	25 - 150
			2-MonoCB-(1)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			3-MonoCB-(2)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			4-MonoCB-(3)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			22'-DiCB-(4)	2021/02/10	0.00043 U, EDL=0.00043		ng/g	
			2,3-DiCB-(5)	2021/02/10	0.00034 U, EDL=0.00034		ng/g	
			2,3'-DiCB-(6)	2021/02/10	0.00033 U, EDL=0.00033		ng/g	
			2,4-DiCB-(7)	2021/02/10	0.00032 U, EDL=0.00032		ng/g	
			2,4'-DiCB-(8)	2021/02/10	0.00032 U, EDL=0.00032		ng/g	
			2,5-DiCB-(9)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			2,6-DiCB-(10)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	
			3,3'-DiCB-(11)	2021/02/10	0.00394 J, EDL=0.00035		ng/g	
			DiCB-(12)+(13)	2021/02/10	0.00034 U, EDL=0.00034		ng/g	
			3,5-DiCB-(14)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			4,4'-DiCB-(15)	2021/02/10	0.00048 U, EDL=0.00048		ng/g	
			22'3-TriCB-(16)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			22'4-TriCB-(17)	2021/02/10	0.00028 U, EDL=0.00028		ng/g	
			TriCB-(18)+(30)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			22'6-TriCB-(19)	2021/02/10	0.00026 U, EDL=0.00026		ng/g	
			TriCB-(20) + (28)	2021/02/10	0.00037 J, EDL=0.00023		ng/g	
			TriCB-(21)+(33)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			234'-TriCB-(22)	2021/02/10	0.00025 U, EDL=0.00025		ng/g	
			235-TriCB-(23)	2021/02/10	0.00026 U, EDL=0.00026		ng/g	
			236-TriCB-(24)	2021/02/10	0.00019 U, EDL=0.00019		ng/g	
			23'4-TriCB-(25)	2021/02/10	0.00021 U, EDL=0.00021		ng/g	
			TriCB-(26)+(29)	2021/02/10	0.00024 U, EDL=0.00024		ng/g	
			23'6-TriCB-(27)	2021/02/10	0.00022 U, EDL=0.00022		ng/g	
			24'5-TriCB-(31)	2021/02/10	0.00022 U, EDL=0.00022		ng/g	
			24'6-TriCB-(32)	2021/02/10	0.00019 U, EDL=0.00019		ng/g	
			23'5'-TriCB-(34)	2021/02/10	0.00024 U, EDL=0.00024		ng/g	
			33'4-TriCB-(35)	2021/02/10	0.00024 U, EDL=0.00024		ng/g	
			33'5-TriCB-(36)	2021/02/10	0.00022 U, EDL=0.00022		ng/g	
			344'-TriCB-(37)	2021/02/10	0.00037 U, EDL=0.00037		ng/g	
			345-TriCB-(38)	2021/02/10	0.00025 U, EDL=0.00025		ng/g	
			34'5-TriCB-(39)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			TetraCB-(40)+(41)+(71)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			22'34'-TetraCB-(42)	2021/02/10	0.00037 U, EDL=0.00037		ng/g	
			22'35-TetraCB-(43)	2021/02/10	0.00047 U, EDL=0.00047		ng/g	
			TetraCB-(44)+(47)+(65)	2021/02/10	0.00046 U, EDL=0.00046 (6)		ng/g	
			TetraCB-(45)+(51)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			22'36'-TetraCB-(46)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'45-TetraCB-(48)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			TetraCB-(49)+TetraCB-(69)	2021/02/10	0.00031 U, EDL=0.00031		ng/g	
			TetraCB-(50)+(53)	2021/02/10	0.00034 U, EDL=0.00034		ng/g	
			22'55'-TetraCB-(52)	2021/02/10	0.00037 U, EDL=0.00037		ng/g	
			22'66'-TetraCB-(54)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	
			233'4-TetraCB-(55)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	
			233'4'-Tetra CB(56)	2021/02/10	0.00043 U, EDL=0.00043		ng/g	
			233'5-TetraCB-(57)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			233'5'-TetraCB-(58)	2021/02/10	0.00044 U, EDL=0.00044		ng/g	
			TetraCB-(59)+(62)+(75)	2021/02/10	0.00028 U, EDL=0.00028		ng/g	
			2344'-TetraCB -(60)	2021/02/10	0.00043 U, EDL=0.00043		ng/g	
			TetraCB-(61)+(70)+(74)+(76)	2021/02/10	0.00040 U, EDL=0.00040		ng/g	
			234'5-TetraCB-(63)	2021/02/10	0.00040 U, EDL=0.00040		ng/g	
			234'6-TetraCB-(64)	2021/02/10	0.00028 U, EDL=0.00028		ng/g	
			23'44'-TetraCB-(66)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			23'45-TetraCB-(67)	2021/02/10	0.00038 U, EDL=0.00038		ng/g	
			23'45'-TetraCB-(68)	2021/02/10	0.00039 U, EDL=0.00039		ng/g	
			23'55'-TetraCB-(72)	2021/02/10	0.00040 U, EDL=0.00040		ng/g	
			23'5'6-TetraCB-(73)	2021/02/10	0.00025 U, EDL=0.00025		ng/g	
			33'44'-TetraCB-(77)	2021/02/10	0.00048 U, EDL=0.00048		ng/g	
			33'45-TetraCB-(78)	2021/02/10	0.00043 U, EDL=0.00043		ng/g	
			33'45'-TetraCB(79)	2021/02/10	0.00039 U, EDL=0.00039		ng/g	
			33'55'-TetraCB-(80)	2021/02/10	0.00038 U, EDL=0.00038		ng/g	
			344'5-TetraCB-(81)	2021/02/10	0.00047 U, EDL=0.00047		ng/g	
			22'33'4-PentaCB-(82)	2021/02/10	0.00044 U, EDL=0.00044		ng/g	
			PentaCB-(83)+(99)	2021/02/10	0.00039 U, EDL=0.00039		ng/g	
			22'33'6-PentaCB-(84)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			PentaCB-(85)+(116)+(117)	2021/02/10	0.00030 U, EDL=0.00030		ng/g	
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/10	0.00032 U, EDL=0.00032		ng/g	
			PentaCB-(88)+(91)	2021/02/10	0.00039 U, EDL=0.00039		ng/g	
			22'346'-PentaCB-(89)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			PentaCB-(90)+(101)+(113)	2021/02/10	0.00034 U, EDL=0.00034		ng/g	
			22'355'-PentaCB-(92)	2021/02/10	0.00040 U, EDL=0.00040		ng/g	
			PentaCB-(93)+(98)+(100)+(102)	2021/02/10	0.00037 U, EDL=0.00037		ng/g	
			22'356'-PentaCB-(94)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	
			22'35'6-PentaCB-(95)	2021/02/10	0.00037 U, EDL=0.00037		ng/g	
			22'366'-PentaCB-(96)	2021/02/10	0.00034 U, EDL=0.00034		ng/g	
			22'45'6-PentaCB-(103)	2021/02/10	0.00035 U, EDL=0.00035		ng/g	
			22'466'-PentaCB-(104)	2021/02/10	0.00026 U, EDL=0.00026		ng/g	
			233'44'-PentaCB-(105)	2021/02/10	0.00027 U, EDL=0.00027		ng/g	
			233'45-PentaCB-(106)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			233'4'5-PentaCB-(107)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	
			PentaCB-(108)+(124)	2021/02/10	0.00022 U, EDL=0.00022		ng/g	
			PentaCB-(110)+(115)	2021/02/10	0.00032 U, EDL=0.00032		ng/g	
			233'55'-PentaCB-(111)	2021/02/10	0.00030 U, EDL=0.00030		ng/g	
			233'56-PentaCB-(112)	2021/02/10	0.00030 U, EDL=0.00030		ng/g	
			2344'5-PentaCB-(114)	2021/02/10	0.00026 U, EDL=0.00026		ng/g	
			23'44'5-PentaCB-(118)	2021/02/10	0.00026 U, EDL=0.00026		ng/g	
			23'455'-PentaCB-(120)	2021/02/10	0.00029 U, EDL=0.00029		ng/g	
			23'45'6-PentaCB-(121)	2021/02/10	0.00029 U, EDL=0.00029		ng/g	
			233'4'5'-PentaCB-(122)	2021/02/10	0.00025 U, EDL=0.00025		ng/g	
			23'44'5'-PentaCB-(123)	2021/02/10	0.00028 U, EDL=0.00028		ng/g	
			33'44'5-PentaCB-(126)	2021/02/10	0.00025 U, EDL=0.00025		ng/g	
			33'455'-PentaCB-(127)	2021/02/10	0.00023 U, EDL=0.00023		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			HexaCB-(128)+(166)	2021/02/10	0.00033 U, EDL=0.00033		ng/g	
			HexaCB-(129)+(138)+(163)	2021/02/10	0.00035 U, EDL=0.00035		ng/g	
			22'33'45'-HexaCB-(130)	2021/02/10	0.00043 U, EDL=0.00043		ng/g	
			22'33'46-HexaCB-(131)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			22'33'46'-HexaCB-(132)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			22'33'55'-HexaCB-(133)	2021/02/10	0.00040 U, EDL=0.00040		ng/g	
			HexaCB-(134)+(143)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	
			HexaCB-(135)+(151)	2021/02/10	0.00088 U, EDL=0.00088		ng/g	
			22'33'66'-HexaCB-(136)	2021/02/10	0.00066 U, EDL=0.00066		ng/g	
			22'344'5-HexaCB-(137)	2021/02/10	0.00044 U, EDL=0.00044		ng/g	
			HexaCB-(139)+(140)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			22'3455'-HexaCB-(141)	2021/02/10	0.00036 U, EDL=0.00036		ng/g	
			22'3456-HexaCB-(142)	2021/02/10	0.00041 U, EDL=0.00041		ng/g	
			22'345'6-HexaCB-(144)	2021/02/10	0.00095 U, EDL=0.00095		ng/g	
			22'3466'-HexaCB-(145)	2021/02/10	0.00068 U, EDL=0.00068		ng/g	
			22'34'55'-HexaCB-(146)	2021/02/10	0.00034 U, EDL=0.00034		ng/g	
			HexaCB-(147)+(149)	2021/02/10	0.00035 U, EDL=0.00035		ng/g	
			22'34'56'-HexaCB-(148)	2021/02/10	0.00089 U, EDL=0.00089		ng/g	
			22'34'66'-HexaCB-(150)	2021/02/10	0.00064 U, EDL=0.00064		ng/g	
			22'3566'-HexaCB-(152)	2021/02/10	0.00065 U, EDL=0.00065		ng/g	
			HexaCB-(153)+(168)	2021/02/10	0.00031 U, EDL=0.00031		ng/g	
			22'44'56'-HexaCB-(154)	2021/02/10	0.00076 U, EDL=0.00076		ng/g	
			22'44'66'-HexaCB-(155)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			HexaCB-(156)+(157)	2021/02/10	0.00049 U, EDL=0.00049		ng/g	
			233'44'6-HexaCB-(158)	2021/02/10	0.00027 U, EDL=0.00027		ng/g	
			233'455'-HexaCB-(159)	2021/02/10	0.00039 U, EDL=0.00039		ng/g	
			233'456-HexaCB-(160)	2021/02/10	0.00030 U, EDL=0.00030		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'45'6-HexaCB-(161)	2021/02/10	0.00030 U, EDL=0.00030		ng/g	
			233'4'55'-HexaCB-(162)	2021/02/10	0.00038 U, EDL=0.00038		ng/g	
			233'4'5'6-HexaCB-(164)	2021/02/10	0.00026 U, EDL=0.00026		ng/g	
			233'55'6-HexaCB-(165)	2021/02/10	0.00032 U, EDL=0.00032		ng/g	
			23'44'55'-HexaCB-(167)	2021/02/10	0.00046 U, EDL=0.00046		ng/g	
			33'44'55'-HexaCB-(169)	2021/02/10	0.00050 U, EDL=0.00050		ng/g	
			22'33'44'5-HeptaCB-(170)	2021/02/10	0.00054 U, EDL=0.00054		ng/g	
			HeptaCB-(171)+(173)	2021/02/10	0.00064 U, EDL=0.00064		ng/g	
			22'33'455'-HeptaCB-(172)	2021/02/10	0.00068 U, EDL=0.00068		ng/g	
			22'33'456'-HeptaCB-(174)	2021/02/10	0.00062 U, EDL=0.00062		ng/g	
			22'33'45'6-HeptaCB-(175)	2021/02/10	0.00054 U, EDL=0.00054		ng/g	
			22'33'466'-HeptaCB-(176)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			22'33'45'6'-HeptaCB-(177)	2021/02/10	0.00067 U, EDL=0.00067		ng/g	
			22'33'55'6-HeptaCB-(178)	2021/02/10	0.00057 U, EDL=0.00057		ng/g	
			22'33'566'-HeptaCB-(179)	2021/02/10	0.00040 U, EDL=0.00040		ng/g	
			HeptaCB-(180)+(193)	2021/02/10	0.00052 U, EDL=0.00052		ng/g	
			22'344'56-HeptaCB-(181)	2021/02/10	0.00063 U, EDL=0.00063		ng/g	
			22'344'56'-HeptaCB-(182)	2021/02/10	0.00053 U, EDL=0.00053		ng/g	
			22'344'5'6-HeptaCB-(183)	2021/02/10	0.00066 U, EDL=0.00066		ng/g	
			22'344'66'-HeptaCB-(184)	2021/02/10	0.00039 U, EDL=0.00039		ng/g	
			22'3455'6-HeptaCB-(185)	2021/02/10	0.00055 U, EDL=0.00055		ng/g	
			22'34566'-HeptaCB-(186)	2021/02/10	0.00042 U, EDL=0.00042		ng/g	
			22'34'55'6-HeptaCB-(187)	2021/02/10	0.00051 U, EDL=0.00051		ng/g	
			22'34'566'-HeptaCB-(188)	2021/02/10	0.00044 U, EDL=0.00044		ng/g	
			233'44'55'-HeptaCB-(189)	2021/02/10	0.00077 U, EDL=0.00077		ng/g	
			233'44'56-HeptaCB-(190)	2021/02/10	0.00050 U, EDL=0.00050		ng/g	
			233'44'5'6-HeptaCB-(191)	2021/02/10	0.00050 U, EDL=0.00050		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'455'6-HeptaCB-(192)	2021/02/10	0.00053 U, EDL=0.00053		ng/g	
			22'33'44'55'-OctaCB-(194)	2021/02/10	0.00081 U, EDL=0.00081		ng/g	
			22'33'44'56-OctaCB-(195)	2021/02/10	0.00087 U, EDL=0.00087		ng/g	
			22'33'44'56'-OctaCB-(196)	2021/02/10	0.00089 U, EDL=0.00089		ng/g	
			22'33'44'66'OctaCB-(197)	2021/02/10	0.00069 U, EDL=0.00069		ng/g	
			OctaCB-(198)+(199)	2021/02/10	0.00087 U, EDL=0.00087		ng/g	
			22'33'4566'-OctaCB-(200)	2021/02/10	0.00059 U, EDL=0.00059		ng/g	
			22'33'45'66'-OctaCB-(201)	2021/02/10	0.00064 U, EDL=0.00064		ng/g	
			22'33'55'66'-OctaCB-(202)	2021/02/10	0.00063 U, EDL=0.00063		ng/g	
			22'344'55'6-OctaCB-(203)	2021/02/10	0.00080 U, EDL=0.00080		ng/g	
			22'344'566'-OctaCB-(204)	2021/02/10	0.00066 U, EDL=0.00066		ng/g	
			233'44'55'6-OctaCB-(205)	2021/02/10	0.00083 U, EDL=0.00083		ng/g	
			22'33'44'55'6-NonaCB-(206)	2021/02/10	0.0010 U, EDL=0.0010		ng/g	
			22'33'44'566'-NonaCB-(207)	2021/02/10	0.00086 U, EDL=0.00086		ng/g	
			22'33'455'66'-NonaCB-(208)	2021/02/10	0.0011 U, EDL=0.0011		ng/g	
			DecaCB-(209)	2021/02/10	0.0015 U, EDL=0.0015		ng/g	
			Total PCB	2021/02/10	0.00430		ng/g	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Exceeds method criteria, possibly due to sample heterogeneity

(2) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(3) %RPD exceeds method criteria, possibly due to sample heterogeneity

(4) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(5) Dieldrin surrogate 13C-pp-DDE was below surrogate criteria due to matrix interferences.

(6) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

Cathy Xu, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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SUBCONTRACT ORDER

Apex Laboratories

A0I0826



SENDING LABORATORY:	RECEIVING LABORATORY:
Apex Laboratories	BV Labs / Maxxam
6700 S.W. Sandburg Street	C/O FEDEX DEPOT 299 Cayuga Rd
Tigard, OR 97223	Cheektowaga, NY 14225
Phone: (503) 718-2323	Phone :(800) 668-0639
Fax: (503) 336-0745	Fax: (905) 332-9169
Project Manager: Darrell Auvil	

Sample Name: T4RB-23U **Soil** **Sampled: 09/28/20 11:50** (A0I0826-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 11:50	BV/ Maxxam -- Level 4 Data package
Containers Supplied: (C)8 oz Glass Jar			

Sample Name: T4RB-23L **Soil** **Sampled: 09/28/20 12:15** (A0I0826-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 12:15	BV/ Maxxam -- Level 4 Data package
Containers Supplied: (C)8 oz Glass Jar			

Sample Name: T4RB-24U **Soil** **Sampled: 09/28/20 12:35** (A0I0826-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 12:35	BV/ Maxxam -- Level 4 Data package
Containers Supplied: (C)8 oz Glass Jar			

Sample Name: T4RB-24L **Soil** **Sampled: 09/28/20 12:50** (A0I0826-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 12:50	BV/ Maxxam -- Level 4 Data package
Containers Supplied: (C)8 oz Glass Jar			

Standard TAT

07-Oct-20 12:28

Lori Dufour

C0Q2499

AFR

ASR ENV-1302

Tracking #: 7717 1380 1606

10/5/20

Fed Ex (Shipper)

Released By	Date	Received By	Date
Fed Ex (Shipper)		DIPIKA SINGH	8/20/10/07 12:28
Released By	Date	Received By	Date

Page 1 of 3

3·2/2·2/2·6

SUBCONTRACT ORDER ET

Apex Laboratories

CR 9/30/20 **A0I0826**

Sample Name: T4RB-25U		**Soil**	**Sampled: 09/28/20 13:30**	(A0I0826-05)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 13:30	BV/ Maxxam -- Level 4 Data package	
Containers Supplied:				
(C)8 oz Glass Jar				
Sample Name: T4RB-25L		**Soil**	**Sampled: 09/28/20 13:40**	(A0I0826-06)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 13:40	BV/ Maxxam -- Level 4 Data package	
Containers Supplied:				
(C)8 oz Glass Jar				
Sample Name: T4RB-26U		**Soil**	**Sampled: 09/28/20 14:40**	(A0I0826-07)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 14:40	BV/ Maxxam -- Level 4 Data package	
Containers Supplied:				
(C)8 oz Glass Jar				
Sample Name: T4RB-26L		**Soil**	**Sampled: 09/28/20 14:30**	(A0I0826-08)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 14:30	BV/ Maxxam -- Level 4 Data package	
Containers Supplied:				
(C)8 oz Glass Jar				
Sample Name: DUP-1		**Soil**	**Sampled: 09/28/20 13:40**	(A0I0826-11)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 13:40	BV/ Maxxam -- Level 4 Data package	
Containers Supplied:				
(C)8 oz Glass Jar				
Sample Name: T4RB-28U		**Soil**	**Sampled: 09/29/20 10:55**	(A0I0826-12)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/28/21 10:55	BV/ Maxxam -- Level 4 Data package	
Containers Supplied:				
(C)8 oz Glass Jar				

Standard TAT

Released By	Date	Received By	Date
10/5/20		Fed Ex (Shipper)	
Fed Ex (Shipper)		DIPIKA SINGH	2020/10/07 12:28
Released By	Date	Received By	Date

3.2/2.2/2.6

ATTD

SUBCONTRACT ORDER

EJ

Apex Laboratories

OB 9/30/20 **A0I0826**

Sample Name: T4RB-1U-OS		**Soil**	**Sampled: 09/29/20 13:00**	(A0I0826-16)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	03/28/21 13:00	BV/ Maxxam -- Level 4 Data package	

Sample Name: T4RB-1L		**Soil**	**Sampled: 09/29/20 13:45**	(A0I0826-18)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	03/28/21 13:45	BV/ Maxxam -- Level 4 Data package	

Standard TAT

Released By	Date	Received By	Date
	10/5/20	Fed Ex (Shipper)	
Fed Ex (Shipper)		DIPIKA SINGH	20/10/07 12:28

Your Project #: A0I0826
Your C.O.C. #: NA, n/a

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2021/03/05
Report #: R6543170
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C120326
Received: 2021/01/22, 12:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	1	2021/02/01	2021/02/11	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	1	2021/02/01	2021/02/18	BRL SOP-00406	EPA M8290A / M1613
Moisture	1	N/A	2021/01/25	CAM SOP-00445	Carter 2nd ed 51.2 m
PCB Congeners in Soil (1668C) (2)	1	2021/02/10	2021/02/24	BRL SOP-00408	EPA 1668C m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(2) Soils are reported on a dry weight basis unless otherwise specified.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bureauveritas.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF SOIL

BV Labs ID		ORB980			
Sampling Date		2020/09/29 13:20			
COC Number		n/a			
	UNITS	T4RB-1U	RDL	MDL	QC Batch
Moisture	%	11	1.0	0.50	7167601

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		ORB980							
Sampling Date		2020/09/29 13:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.337 J	0.0817	0.998	0.0399	1.00	0.337	1	7190267
1,2,3,7,8-Penta CDD *	pg/g	1.33 J	0.0868	4.99	0.0399	1.00	1.33	1	7190267
1,2,3,4,7,8-Hexa CDD *	pg/g	1.86 J	0.102	4.99	0.0399	0.100	0.186	1	7190267
1,2,3,6,7,8-Hexa CDD *	pg/g	6.26	0.0925	4.99	0.0399	0.100	0.626	1	7190267
1,2,3,7,8,9-Hexa CDD *	pg/g	4.57 J	0.0937	4.99	0.0399	0.100	0.457	1	7190267
1,2,3,4,6,7,8-Hepta CDD *	pg/g	181	0.0981	4.99	0.0399	0.0100	1.81	1	7190267
Octa CDD *	pg/g	1240	0.111	9.98	0.0798	0.000300	0.372	1	7190267
Total Tetra CDD *	pg/g	1.23	0.0817	0.998	0.0399	N/A	N/A	6	7190267
Total Penta CDD *	pg/g	5.85	0.0868	4.99	0.0399	N/A	N/A	10	7190267
Total Hexa CDD *	pg/g	52.5	0.0959	4.99	0.0399	N/A	N/A	7	7190267
Total Hepta CDD *	pg/g	437	0.0981	4.99	0.0399	N/A	N/A	2	7190267
2,3,7,8-Tetra CDF **	pg/g	2.08	0.0817	0.998	0.0399	0.100	0.208	1	7190267
1,2,3,7,8-Penta CDF **	pg/g	0.943 J	0.0904	4.99	0.0399	0.0300	0.0283	1	7190267
2,3,4,7,8-Penta CDF **	pg/g	1.38 J	0.0719	4.99	0.0399	0.300	0.414	1	7190267
1,2,3,4,7,8-Hexa CDF **	pg/g	4.45 J	0.0969	4.99	0.0399	0.100	0.445	1	7190267
1,2,3,6,7,8-Hexa CDF **	pg/g	1.89 J	0.0980	4.99	0.0399	0.100	0.189	1	7190267
2,3,4,6,7,8-Hexa CDF **	pg/g	1.42 J	0.0957	4.99	0.0399	0.100	0.142	1	7190267
1,2,3,7,8,9-Hexa CDF **	pg/g	0.184 J	0.0998	4.99	0.0399	0.100	0.0184	1	7190267
1,2,3,4,6,7,8-Hepta CDF **	pg/g	28.9	0.0890	4.99	0.0399	0.0100	0.289	1	7190267
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.25 J	0.108	4.99	0.0399	0.0100	0.0225	1	7190267
Octa CDF **	pg/g	63.6	0.121	9.98	0.0798	0.000300	0.0191	1	7190267
Total Tetra CDF **	pg/g	12.3	0.0817	0.998	0.0399	N/A	N/A	16	7190267
Total Penta CDF **	pg/g	30.8	0.0804	4.99	0.0399	N/A	N/A	14	7190267
Total Hexa CDF **	pg/g	61.8	0.0975	4.99	0.0399	N/A	N/A	11	7190267
Total Hepta CDF **	pg/g	106	0.0974	4.99	0.0399	N/A	N/A	3	7190267
Confirmation 2,3,7,8-Tetra CDF **	pg/g	1.21	0.11	1.0	0.18	0.100	0.121	N/A	7213064
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	6.81	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7190267

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		ORB980							
Sampling Date		2020/09/29 13:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234678 HeptaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123478 HexaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123478 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234789 HeptaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123678 HexaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-12378 PentaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-12378 PentaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123789 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-234678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-23478 PentaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-2378 TetraCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-2378 TetraCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-OCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7190267
Confirmation C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7213064

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB980							
Sampling Date		2020/09/29 13:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00825 J	0.00037	0.010	0.0026	N/A	N/A	N/A	7210685
3-MonoCB-(2)	ng/g	0.00343 J	0.00033	0.010	0.0038	N/A	N/A	N/A	7210685
4-MonoCB-(3)	ng/g	0.00873 J	0.00036	0.025	0.0035	N/A	N/A	N/A	7210685
22'-DiCB-(4)	ng/g	0.0321	0.0022	0.025	0.0040	N/A	N/A	N/A	7210685
2,3-DiCB-(5)	ng/g	0.00065 U	0.00065	0.025	0.015	N/A	N/A	N/A	7210685
2,3'-DiCB-(6)	ng/g	0.0197	0.00064	0.010	0.0034	N/A	N/A	N/A	7210685
2,4-DiCB-(7)	ng/g	0.00286 J	0.00064	0.010	0.0064	N/A	N/A	N/A	7210685
2,4'-DiCB-(8)	ng/g	0.0848	0.00068	0.025	0.016	N/A	N/A	N/A	7210685
2,5-DiCB-(9)	ng/g	0.00471 J	0.00068	0.010	0.0019	N/A	N/A	N/A	7210685
2,6-DiCB-(10)	ng/g	0.0025 U	0.0025	0.025	0.0042	N/A	N/A	N/A	7210685
3,3'-DiCB-(11)	ng/g	0.0293 J	0.00073	0.050	0.034	N/A	N/A	N/A	7210685
DiCB-(12)+(13)	ng/g	0.0134 J	0.00071	0.025	0.011	N/A	N/A	N/A	7210685
3,5-DiCB-(14)	ng/g	0.00070 U	0.00070	0.010	0.0033	N/A	N/A	N/A	7210685
4,4'-DiCB-(15)	ng/g	0.167	0.0011	0.025	0.0039	N/A	N/A	N/A	7210685
22'3-TriCB-(16)	ng/g	0.0681	0.0021	0.025	0.013	N/A	N/A	N/A	7210685
22'4-TriCB-(17)	ng/g	0.0537	0.0016	0.010	0.0040	N/A	N/A	N/A	7210685
TriCB-(18)+(30)	ng/g	0.122	0.0013	0.025	0.0052	N/A	N/A	N/A	7210685
22'6-TriCB-(19)	ng/g	0.0250	0.0011	0.010	0.0052	N/A	N/A	N/A	7210685
TriCB-(20) + (28)	ng/g	0.211	0.0011	0.025	0.0090	N/A	N/A	N/A	7210685
TriCB-(21)+(33)	ng/g	0.122	0.0012	0.025	0.011	N/A	N/A	N/A	7210685
234'-TriCB-(22)	ng/g	0.0775	0.0012	0.010	0.0049	N/A	N/A	N/A	7210685
235-TriCB-(23)	ng/g	0.0011 U	0.0011	0.010	0.0046	N/A	N/A	N/A	7210685
236-TriCB-(24)	ng/g	0.00095 U	0.00095	0.010	0.0090	N/A	N/A	N/A	7210685
23'4-TriCB-(25)	ng/g	0.0184	0.0011	0.010	0.0064	N/A	N/A	N/A	7210685
TriCB-(26)+(29)	ng/g	0.0335	0.0012	0.025	0.0087	N/A	N/A	N/A	7210685
23'6-TriCB-(27)	ng/g	0.0099 J	0.0010	0.010	0.0065	N/A	N/A	N/A	7210685
24'5-TriCB-(31)	ng/g	0.189	0.0011	0.025	0.0038	N/A	N/A	N/A	7210685
24'6-TriCB-(32)	ng/g	0.0370	0.0010	0.010	0.0024	N/A	N/A	N/A	7210685
23'5'-TriCB-(34)	ng/g	0.0013 U	0.0013	0.010	0.0060	N/A	N/A	N/A	7210685
33'4-TriCB-(35)	ng/g	0.0072 J	0.0013	0.010	0.0042	N/A	N/A	N/A	7210685
33'5-TriCB-(36)	ng/g	0.0011 U	0.0011	0.010	0.0029	N/A	N/A	N/A	7210685

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB980							
Sampling Date		2020/09/29 13:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
344'-TriCB-(37)	ng/g	0.205	0.0020	0.010	0.0029	N/A	N/A	N/A	7210685
345-TriCB-(38)	ng/g	0.0012 U	0.0012	0.010	0.0038	N/A	N/A	N/A	7210685
34'5-TriCB-(39)	ng/g	0.0017 J	0.0012	0.010	0.0052	N/A	N/A	N/A	7210685
TetraCB-(40)+(41)+(71)	ng/g	0.315	0.0022	0.050	0.016	N/A	N/A	N/A	7210685
22'34'-TetraCB-(42)	ng/g	0.182	0.0024	0.025	0.014	N/A	N/A	N/A	7210685
22'35-TetraCB-(43)	ng/g	0.0095 J	0.0030	0.025	0.019	N/A	N/A	N/A	7210685
TetraCB-(44)+(47)+(65)	ng/g	0.757	0.0019	0.050	0.041	N/A	N/A	N/A	7210685
TetraCB-(45)+(51)	ng/g	0.165	0.0021	0.025	0.018	N/A	N/A	N/A	7210685
22'36'-TetraCB-(46)	ng/g	0.0452	0.0025	0.010	0.0090	N/A	N/A	N/A	7210685
22'45-TetraCB-(48)	ng/g	0.0548	0.0021	0.025	0.0042	N/A	N/A	N/A	7210685
TetraCB-(49)+TetraCB-(69)	ng/g	0.526	0.0018	0.050	0.010	N/A	N/A	N/A	7210685
TetraCB-(50)+(53)	ng/g	0.158	0.0021	0.050	0.013	N/A	N/A	N/A	7210685
22'55'-TetraCB-(52)	ng/g	1.26	0.0020	0.025	0.016	N/A	N/A	N/A	7210685
22'66'-TetraCB-(54)	ng/g	0.00231 J	0.00093	0.025	0.0096	N/A	N/A	N/A	7210685
233'4-TetraCB-(55)	ng/g	0.0017 U	0.0017	0.025	0.011	N/A	N/A	N/A	7210685
233'4'-Tetra CB(56)	ng/g	0.144	0.0017	0.025	0.0051	N/A	N/A	N/A	7210685
233'5-TetraCB-(57)	ng/g	0.0016 U	0.0016	0.025	0.0056	N/A	N/A	N/A	7210685
233'5'-TetraCB-(58)	ng/g	0.0016 U	0.0016	0.025	0.011	N/A	N/A	N/A	7210685
TetraCB-(59)+(62)+(75)	ng/g	0.0559	0.0015	0.050	0.014	N/A	N/A	N/A	7210685
2344'-TetraCB -(60)	ng/g	0.0511	0.0017	0.025	0.0053	N/A	N/A	N/A	7210685
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.701	0.0016	0.10	0.022	N/A	N/A	N/A	7210685
234'5-TetraCB-(63)	ng/g	0.0111 J	0.0016	0.025	0.0071	N/A	N/A	N/A	7210685
234'6-TetraCB-(64)	ng/g	0.355	0.0016	0.025	0.0047	N/A	N/A	N/A	7210685
23'44'-TetraCB-(66)	ng/g	0.323	0.0016	0.025	0.099	N/A	N/A	N/A	7210685
23'45-TetraCB-(67)	ng/g	0.0097 J	0.0015	0.025	0.011	N/A	N/A	N/A	7210685
23'45'-TetraCB-(68)	ng/g	0.0054 J	0.0015	0.025	0.0088	N/A	N/A	N/A	7210685
23'55'-TetraCB-(72)	ng/g	0.0077 J	0.0015	0.025	0.0086	N/A	N/A	N/A	7210685
23'5'6-TetraCB-(73)	ng/g	0.0039 J	0.0014	0.025	0.019	N/A	N/A	N/A	7210685
33'44'-TetraCB-(77)	ng/g	0.0857	0.0027	0.025	0.0063	0.000100	0.00000857	N/A	7210685
33'45-TetraCB-(78)	ng/g	0.0019 U	0.0019	0.025	0.0065	N/A	N/A	N/A	7210685
33'45'-TetraCB(79)	ng/g	0.0234 J	0.0015	0.025	0.0058	N/A	N/A	N/A	7210685

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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB980							
Sampling Date		2020/09/29 13:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'55'-TetraCB-(80)	ng/g	0.0015 U	0.0015	0.025	0.0061	N/A	N/A	N/A	7210685
344'5-TetraCB-(81)	ng/g	0.0050 J	0.0026	0.025	0.0058	0.000300	0.00000150	N/A	7210685
22'33'4-PentaCB-(82)	ng/g	0.633	0.0020	0.025	0.0048	N/A	N/A	N/A	7210685
PentaCB-(83)+(99)	ng/g	2.87	0.0020	0.050	0.016	N/A	N/A	N/A	7210685
22'33'6-PentaCB-(84)	ng/g	1.25	0.0018	0.010	0.0077	N/A	N/A	N/A	7210685
PentaCB-(85)+(116)+(117)	ng/g	0.638	0.0014	0.050	0.027	N/A	N/A	N/A	7210685
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	2.60	0.0014	0.10	0.029	N/A	N/A	N/A	7210685
PentaCB-(88)+(91)	ng/g	0.864	0.0016	0.025	0.013	N/A	N/A	N/A	7210685
22'346'-PentaCB-(89)	ng/g	0.0349	0.0016	0.025	0.0080	N/A	N/A	N/A	7210685
PentaCB-(90)+(101)+(113)	ng/g	4.31	0.0015	0.10	0.011	N/A	N/A	N/A	7210685
22'355'-PentaCB-(92)	ng/g	0.829	0.0017	0.025	0.0044	N/A	N/A	N/A	7210685
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.161	0.0015	0.10	0.024	N/A	N/A	N/A	7210685
22'356'-PentaCB-(94)	ng/g	0.0222 J	0.0017	0.025	0.0063	N/A	N/A	N/A	7210685
22'35'6-PentaCB-(95)	ng/g	5.25	0.0015	0.025	0.0088	N/A	N/A	N/A	7210685
22'366'-PentaCB-(96)	ng/g	0.0269	0.0013	0.025	0.010	N/A	N/A	N/A	7210685
22'45'6-PentaCB-(103)	ng/g	0.0222 J	0.0014	0.025	0.0061	N/A	N/A	N/A	7210685
22'466'-PentaCB-(104)	ng/g	0.00084 U	0.00084	0.025	0.0056	N/A	N/A	N/A	7210685
233'44'-PentaCB-(105)	ng/g	1.28	0.0036	0.025	0.0044	0.0000300	0.0000384	N/A	7210685
233'45-PentaCB-(106)	ng/g	0.0032 U	0.0032	0.025	0.0036	N/A	N/A	N/A	7210685
233'4'5-PentaCB-(107)	ng/g	0.239	0.0030	0.025	0.017	N/A	N/A	N/A	7210685
PentaCB-(108)+(124)	ng/g	0.170	0.0032	0.050	0.011	N/A	N/A	N/A	7210685
PentaCB-(110)+(115)	ng/g	9.28	0.0013	0.050	0.012	N/A	N/A	N/A	7210685
233'55'-PentaCB-(111)	ng/g	0.0013 U	0.0013	0.025	0.0056	N/A	N/A	N/A	7210685
233'56-PentaCB-(112)	ng/g	0.0012 U	0.0012	0.025	0.0078	N/A	N/A	N/A	7210685
2344'5-PentaCB-(114)	ng/g	0.0432	0.0036	0.025	0.0042	0.0000300	0.00000130	N/A	7210685
23'44'5-PentaCB-(118)	ng/g	2.76	0.0037	0.0050	0.0066	0.0000300	0.0000828	N/A	7210685
23'455'-PentaCB-(120)	ng/g	0.0084 J	0.0012	0.025	0.0064	N/A	N/A	N/A	7210685
23'45'6-PentaCB-(121)	ng/g	0.0011 U	0.0011	0.025	0.0063	N/A	N/A	N/A	7210685
233'4'5'-PentaCB-(122)	ng/g	0.0675	0.0033	0.025	0.0066	N/A	N/A	N/A	7210685
23'44'5'-PentaCB-(123)	ng/g	0.0789	0.0039	0.025	0.014	0.0000300	0.00000237	N/A	7210685
33'44'5-PentaCB-(126)	ng/g	0.0195 J	0.0035	0.025	0.0030	0.100	0.00195	N/A	7210685

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COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'455'-PentaCB-(127)	ng/g	0.0130 J	0.0037	0.025	0.0032	N/A	N/A	N/A	7210685
HexaCB-(128)+(166)	ng/g	2.32	0.012	0.050	0.021	N/A	N/A	N/A	7210685
HexaCB-(129)+(138)+(163)	ng/g	14.4	0.012	0.10	0.037	N/A	N/A	N/A	7210685
22'33'45'-HexaCB-(130)	ng/g	0.811	0.015	0.025	0.0051	N/A	N/A	N/A	7210685
22'33'46-HexaCB-(131)	ng/g	0.131	0.014	0.025	0.0099	N/A	N/A	N/A	7210685
22'33'46'-HexaCB-(132)	ng/g	4.42	0.013	0.025	0.0087	N/A	N/A	N/A	7210685
22'33'55'-HexaCB-(133)	ng/g	0.131	0.012	0.025	0.010	N/A	N/A	N/A	7210685
HexaCB-(134)+(143)	ng/g	0.607	0.014	0.050	0.017	N/A	N/A	N/A	7210685
HexaCB-(135)+(151)	ng/g	4.54	0.0021	0.10	0.014	N/A	N/A	N/A	7210685
22'33'66'-HexaCB-(136)	ng/g	1.66	0.0016	0.025	0.0083	N/A	N/A	N/A	7210685
22'344'5-HexaCB-(137)	ng/g	0.477	0.018	0.050	0.030	N/A	N/A	N/A	7210685
HexaCB-(139)+(140)	ng/g	0.143	0.012	0.050	0.016	N/A	N/A	N/A	7210685
22'3455'-HexaCB-(141)	ng/g	2.51	0.012	0.025	0.012	N/A	N/A	N/A	7210685
22'3456-HexaCB-(142)	ng/g	0.014 U	0.014	0.025	0.0088	N/A	N/A	N/A	7210685
22'345'6-HexaCB-(144)	ng/g	0.648	0.0024	0.025	0.0072	N/A	N/A	N/A	7210685
22'3466'-HexaCB-(145)	ng/g	0.0034 J	0.0015	0.025	0.0082	N/A	N/A	N/A	7210685
22'34'55'-HexaCB-(146)	ng/g	1.69	0.011	0.025	0.010	N/A	N/A	N/A	7210685
HexaCB-(147)+(149)	ng/g	10.3	0.011	0.050	0.019	N/A	N/A	N/A	7210685
22'34'56'-HexaCB-(148)	ng/g	0.0047 J	0.0020	0.025	0.0084	N/A	N/A	N/A	7210685
22'34'66'-HexaCB-(150)	ng/g	0.0063 J	0.0014	0.025	0.0061	N/A	N/A	N/A	7210685
22'3566'-HexaCB-(152)	ng/g	0.0037 U (1)	0.0037	0.025	0.013	N/A	N/A	N/A	7210685
HexaCB-(153)+(168)	ng/g	8.73	0.0093	0.050	0.013	N/A	N/A	N/A	7210685
22'44'56'-HexaCB-(154)	ng/g	0.0456	0.0017	0.025	0.012	N/A	N/A	N/A	7210685
22'44'66'-HexaCB-(155)	ng/g	0.0013 U	0.0013	0.025	0.0087	N/A	N/A	N/A	7210685
HexaCB-(156)+(157)	ng/g	1.11	0.0040	0.050	0.0086	0.0000300	0.0000333	N/A	7210685
233'44'6-HexaCB-(158)	ng/g	1.21	0.0095	0.025	0.0072	N/A	N/A	N/A	7210685
233'455'-HexaCB-(159)	ng/g	0.197	0.0031	0.025	0.0082	N/A	N/A	N/A	7210685
233'456-HexaCB-(160)	ng/g	0.011 U	0.011	0.025	0.017	N/A	N/A	N/A	7210685
233'45'6-HexaCB-(161)	ng/g	0.0083 U	0.0083	0.025	0.011	N/A	N/A	N/A	7210685
233'4'55'-HexaCB-(162)	ng/g	0.0268	0.0030	0.025	0.0083	N/A	N/A	N/A	7210685

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Sampling Date		2020/09/29 13:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'5'6-HexaCB-(164)	ng/g	0.985	0.0081	0.025	0.017	N/A	N/A	N/A	7210685
233'55'6-HexaCB-(165)	ng/g	0.0094 U	0.0094	0.025	0.010	N/A	N/A	N/A	7210685
23'44'55'-HexaCB-(167)	ng/g	0.539	0.0038	0.025	0.0056	0.0000300	0.0000162	N/A	7210685
33'44'55'-HexaCB-(169)	ng/g	0.0057 J	0.0041	0.025	0.024	0.0300	0.000171	N/A	7210685
22'33'44'5-HeptaCB-(170)	ng/g	4.45	0.0028	0.025	0.0042	N/A	N/A	N/A	7210685
HeptaCB-(171)+(173)	ng/g	1.22	0.0031	0.050	0.011	N/A	N/A	N/A	7210685
22'33'455'-HeptaCB-(172)	ng/g	0.749	0.0034	0.025	0.0080	N/A	N/A	N/A	7210685
22'33'456'-HeptaCB-(174)	ng/g	3.96	0.0026	0.025	0.014	N/A	N/A	N/A	7210685
22'33'45'6-HeptaCB-(175)	ng/g	0.160	0.0035	0.025	0.0092	N/A	N/A	N/A	7210685
22'33'466'-HeptaCB-(176)	ng/g	0.412	0.0021	0.025	0.0098	N/A	N/A	N/A	7210685
22'33'45'6'-HeptaCB-(177)	ng/g	2.57	0.0032	0.025	0.0078	N/A	N/A	N/A	7210685
22'33'55'6-HeptaCB-(178)	ng/g	0.822	0.0037	0.025	0.010	N/A	N/A	N/A	7210685
22'33'566'-HeptaCB-(179)	ng/g	1.45	0.0021	0.025	0.0086	N/A	N/A	N/A	7210685
HeptaCB-(180)+(193)	ng/g	9.49	0.0027	0.050	0.0085	N/A	N/A	N/A	7210685
22'344'56-HeptaCB-(181)	ng/g	0.0263	0.0032	0.025	0.0080	N/A	N/A	N/A	7210685
22'344'56'-HeptaCB-(182)	ng/g	0.0033 U	0.0033	0.025	0.0092	N/A	N/A	N/A	7210685
22'344'5'6-HeptaCB-(183)	ng/g	2.22	0.0025	0.025	0.028	N/A	N/A	N/A	7210685
22'344'66'-HeptaCB-(184)	ng/g	0.0020 U	0.0020	0.025	0.010	N/A	N/A	N/A	7210685
22'3455'6-HeptaCB-(185)	ng/g	0.0037 U	0.0037	0.025	0.022	N/A	N/A	N/A	7210685
22'34566'-HeptaCB-(186)	ng/g	0.0026 U	0.0026	0.025	0.0086	N/A	N/A	N/A	7210685
22'34'55'6-HeptaCB-(187)	ng/g	5.18	0.0032	0.025	0.011	N/A	N/A	N/A	7210685
22'34'566'-HeptaCB-(188)	ng/g	0.0051 J	0.0027	0.025	0.0047	N/A	N/A	N/A	7210685
233'44'55'-HeptaCB-(189)	ng/g	0.163	0.0044	0.025	0.0041	0.0000300	0.00000489	N/A	7210685
233'44'56-HeptaCB-(190)	ng/g	0.874	0.0031	0.025	0.0041	N/A	N/A	N/A	7210685
233'44'5'6-HeptaCB-(191)	ng/g	0.205	0.0029	0.025	0.0045	N/A	N/A	N/A	7210685
233'455'6-HeptaCB-(192)	ng/g	0.0030 U	0.0030	0.025	0.0090	N/A	N/A	N/A	7210685
22'33'44'55'-OctaCB-(194)	ng/g	2.37	0.0029	0.025	0.0095	N/A	N/A	N/A	7210685
22'33'44'56-OctaCB-(195)	ng/g	0.942	0.0032	0.025	0.0094	N/A	N/A	N/A	7210685
22'33'44'56'-OctaCB-(196)	ng/g	1.33	0.0039	0.025	0.016	N/A	N/A	N/A	7210685
22'33'44'66'OctaCB-(197)	ng/g	0.0409	0.0019	0.025	0.044	N/A	N/A	N/A	7210685
OctaCB-(198)+(199)	ng/g	3.06	0.0035	0.050	0.014	N/A	N/A	N/A	7210685

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COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'4566'-OctaCB-(200)	ng/g	0.268	0.0018	0.025	0.032	N/A	N/A	N/A	7210685
22'33'45'66'-OctaCB-(201)	ng/g	0.240	0.0019	0.025	0.017	N/A	N/A	N/A	7210685
22'33'55'66'-OctaCB-(202)	ng/g	0.457	0.0019	0.050	0.0081	N/A	N/A	N/A	7210685
22'344'55'6-OctaCB-(203)	ng/g	2.13	0.0038	0.025	0.011	N/A	N/A	N/A	7210685
22'344'566'-OctaCB-(204)	ng/g	0.0020 U	0.0020	0.025	0.021	N/A	N/A	N/A	7210685
233'44'55'6-OctaCB-(205)	ng/g	0.112	0.0027	0.025	0.0096	N/A	N/A	N/A	7210685
22'33'44'55'6-NonaCB-(206)	ng/g	1.29	0.0025	0.025	0.0077	N/A	N/A	N/A	7210685
22'33'44'566'-NonaCB-(207)	ng/g	0.143	0.0022	0.025	0.0081	N/A	N/A	N/A	7210685
22'33'455'66'-NonaCB-(208)	ng/g	0.353	0.0026	0.025	0.0073	N/A	N/A	N/A	7210685
DecaCB-(209)	ng/g	0.370	0.0033	0.025	0.012	N/A	N/A	N/A	7210685
Total PCB	ng/g	145	N/A	N/A	N/A	N/A	N/A	N/A	7210685
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.00231	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'44'55'6-NonaCB-(206)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'44'5-HeptaCB-(170)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'455'66'-NonaCB-(208)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'55'66'-OctaCB-(202)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'55'6-HeptaCB-(178)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'344'55'-HeptaCB-(180)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'34'566'-HeptaCB-(188)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'44'66'-HexaCB-(155)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'466'-PentaCB-(104)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'66'-TetraCB-(54)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'6-TriCB-(19)	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'-DiCB-(4)	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'44'55'6-OctaCB-(205)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'44'55'-HeptaCB-(189)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'44'-PentaCB-(105)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'55'-PentaCB-(111)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-23'44'55'-HexaCB-(167)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7210685

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	UNITS	T4RB-1U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-2344'5-PentaCB-(114)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-23'44'5-PentaCB-(118)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-2'344'5-PentaCB-(123)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-2-MonoCB-(1)	%	63	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-33'44'55'-HexaCB-(169)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-33'44'5-PentaCB-(126)	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-33'44'-TetraCB-(77)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-344'5-TetraCB-(81)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-344'-TriCB-(37)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-44'-DiCB-(15)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-4-MonoCB-(3)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-DecaCB-(209)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-HexaCB-(156)+(157)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7210685

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: ORB980
Sample ID: T4RB-1U
Matrix: Soil

Collected: 2020/09/29
Shipped:
Received: 2021/01/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7190267	2021/02/01	2021/02/11	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7213064	2021/02/01	2021/02/18	Angel Guerrero
Moisture	BAL	7167601	N/A	2021/01/25	Manpreet Kaur
PCB Congeners in Soil (1668C)	HRMS/MS	7210685	2021/02/10	2021/02/24	Cathy Xu

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

Sample ORB980 [T4RB-1U] : 5x DILUTION

SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

Sample ORB980 [T4RB-1U] PCB Congeners in Soil (1668C): ** All results from 5X Dilution **

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7167601	CPS	RPD - Sample/Sample Dup	Moisture	2021/01/25	2.0		%	20
7190267	AGU	Matrix Spike(ORB980)	37CL4 2378 Tetra CDD	2021/02/10		81	%	35 - 197
			C13-1234678 HeptaCDD	2021/02/10		96	%	23 - 140
			C13-1234678 HeptaCDF	2021/02/10		91	%	28 - 143
			C13-123478 HexaCDD	2021/02/10		93	%	32 - 141
			C13-123478 HexaCDF	2021/02/10		87	%	26 - 152
			C13-1234789 HeptaCDF	2021/02/10		94	%	26 - 138
			C13-123678 HexaCDD	2021/02/10		98	%	28 - 130
			C13-123678 HexaCDF	2021/02/10		84	%	26 - 123
			C13-12378 PentaCDD	2021/02/10		77	%	25 - 181
			C13-12378 PentaCDF	2021/02/10		72	%	24 - 185
			C13-123789 HexaCDF	2021/02/10		102	%	29 - 147
			C13-234678 HexaCDF	2021/02/10		94	%	28 - 136
			C13-23478 PentaCDF	2021/02/10		88	%	21 - 178
			C13-2378 TetraCDD	2021/02/10		76	%	25 - 164
			C13-2378 TetraCDF	2021/02/10		83	%	24 - 169
			C13-OCDD	2021/02/10		84	%	17 - 157
			2,3,7,8-Tetra CDD	2021/02/10		99	%	67 - 158
			1,2,3,7,8-Penta CDD	2021/02/10		108	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2021/02/10		108	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2021/02/10		109	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2021/02/10		112	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2021/02/10		126	%	70 - 140
			Octa CDD	2021/02/10		285 (1)	%	78 - 144
			2,3,7,8-Tetra CDF	2021/02/10		99	%	75 - 158
			1,2,3,7,8-Penta CDF	2021/02/10		105	%	80 - 134
			2,3,4,7,8-Penta CDF	2021/02/10		95	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2021/02/10		106	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2021/02/10		101	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2021/02/10		108	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2021/02/10		100	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2021/02/10		97	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2021/02/10		109	%	78 - 138
			Octa CDF	2021/02/10		120	%	63 - 170
7190267	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2021/02/10		72	%	35 - 197
			C13-1234678 HeptaCDD	2021/02/10		98	%	23 - 140
			C13-1234678 HeptaCDF	2021/02/10		100	%	28 - 143
			C13-123478 HexaCDD	2021/02/10		93	%	32 - 141
			C13-123478 HexaCDF	2021/02/10		89	%	26 - 152
			C13-1234789 HeptaCDF	2021/02/10		100	%	26 - 138
			C13-123678 HexaCDD	2021/02/10		99	%	28 - 130
			C13-123678 HexaCDF	2021/02/10		85	%	26 - 123
			C13-12378 PentaCDD	2021/02/10		76	%	25 - 181
			C13-12378 PentaCDF	2021/02/10		69	%	24 - 185
			C13-123789 HexaCDF	2021/02/10		104	%	29 - 147
			C13-234678 HexaCDF	2021/02/10		98	%	28 - 136
			C13-23478 PentaCDF	2021/02/10		86	%	21 - 178
			C13-2378 TetraCDD	2021/02/10		67	%	25 - 164
			C13-2378 TetraCDF	2021/02/10		72	%	24 - 169
			C13-OCDD	2021/02/10		91	%	17 - 157
			2,3,7,8-Tetra CDD	2021/02/10		104	%	67 - 158
			1,2,3,7,8-Penta CDD	2021/02/10		108	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2021/02/10		108	%	70 - 164

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2021/02/10		107	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2021/02/10		114	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2021/02/10		110	%	70 - 140
			Octa CDD	2021/02/10		104	%	78 - 144
			2,3,7,8-Tetra CDF	2021/02/10		102	%	75 - 158
			1,2,3,7,8-Penta CDF	2021/02/10		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2021/02/10		96	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2021/02/10		107	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2021/02/10		108	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2021/02/10		108	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2021/02/10		99	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2021/02/10		95	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2021/02/10		108	%	78 - 138
			Octa CDF	2021/02/10		106	%	63 - 170
7190267	AGU	Method Blank	37CL4 2378 Tetra CDD	2021/02/10		76	%	35 - 197
			C13-1234678 HeptaCDD	2021/02/10		108	%	23 - 140
			C13-1234678 HeptaCDF	2021/02/10		106	%	28 - 143
			C13-123478 HexaCDD	2021/02/10		105	%	32 - 141
			C13-123478 HexaCDF	2021/02/10		96	%	26 - 152
			C13-1234789 HeptaCDF	2021/02/10		108	%	26 - 138
			C13-123678 HexaCDD	2021/02/10		105	%	28 - 130
			C13-123678 HexaCDF	2021/02/10		90	%	26 - 123
			C13-12378 PentaCDD	2021/02/10		80	%	25 - 181
			C13-12378 PentaCDF	2021/02/10		75	%	24 - 185
			C13-123789 HexaCDF	2021/02/10		113	%	29 - 147
			C13-234678 HexaCDF	2021/02/10		107	%	28 - 136
			C13-23478 PentaCDF	2021/02/10		87	%	21 - 178
			C13-2378 TetraCDD	2021/02/10		77	%	25 - 164
			C13-2378 TetraCDF	2021/02/10		79	%	24 - 169
			C13-OCDD	2021/02/10		104	%	17 - 157
			2,3,7,8-Tetra CDD	2021/02/10	0.107 U, EDL=0.107		pg/g	
			1,2,3,7,8-Penta CDD	2021/02/10	0.108 U, EDL=0.108		pg/g	
			1,2,3,4,7,8-Hexa CDD	2021/02/10	0.103 U, EDL=0.103		pg/g	
			1,2,3,6,7,8-Hexa CDD	2021/02/10	0.103 U, EDL=0.103		pg/g	
			1,2,3,7,8,9-Hexa CDD	2021/02/10	0.109 U, EDL=0.109		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2021/02/10	0.105 U, EDL=0.105		pg/g	
			Octa CDD	2021/02/10	0.185 J, EDL=0.101		pg/g	
			Total Tetra CDD	2021/02/10	0.107 U, EDL=0.107		pg/g	
			Total Penta CDD	2021/02/10	0.108 U, EDL=0.108		pg/g	
			Total Hexa CDD	2021/02/10	0.106 U, EDL=0.106		pg/g	
			Total Hepta CDD	2021/02/10	0.105 U, EDL=0.105		pg/g	
			2,3,7,8-Tetra CDF	2021/02/10	0.0998 U, EDL=0.0998		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2021/02/10	0.108 U, EDL=0.108		pg/g	
			2,3,4,7,8-Penta CDF	2021/02/10	0.0988 U, EDL=0.0988		pg/g	
			1,2,3,4,7,8-Hexa CDF	2021/02/10	0.0998 U, EDL=0.0998		pg/g	
			1,2,3,6,7,8-Hexa CDF	2021/02/10	0.102 U, EDL=0.102		pg/g	
			2,3,4,6,7,8-Hexa CDF	2021/02/10	0.0967 U, EDL=0.0967		pg/g	
			1,2,3,7,8,9-Hexa CDF	2021/02/10	0.103 U, EDL=0.103		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2021/02/10	0.102 U, EDL=0.102		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2021/02/10	0.0985 U, EDL=0.0985		pg/g	
			Octa CDF	2021/02/10	0.102 U, EDL=0.102		pg/g	
			Total Tetra CDF	2021/02/10	0.0998 U, EDL=0.0998		pg/g	
			Total Penta CDF	2021/02/10	0.103 U, EDL=0.103		pg/g	
			Total Hexa CDF	2021/02/10	0.100 U, EDL=0.100		pg/g	
			Total Hepta CDF	2021/02/10	0.100 U, EDL=0.100		pg/g	
7190267	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2021/02/17	NC		%	25
			1,2,3,7,8-Penta CDD	2021/02/17	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2021/02/17	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2021/02/17	24		%	25
			1,2,3,7,8,9-Hexa CDD	2021/02/17	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2021/02/17	35 (2)		%	25
			Octa CDD	2021/02/17	27 (2)		%	25
			Total Tetra CDD	2021/02/17	NC (3)		%	25
			Total Penta CDD	2021/02/17	NC		%	25
			Total Hexa CDD	2021/02/17	26 (2)		%	25
			Total Hepta CDD	2021/02/17	34 (2)		%	25
			2,3,7,8-Tetra CDF	2021/02/17	NC		%	25
			1,2,3,7,8-Penta CDF	2021/02/17	NC		%	25
			2,3,4,7,8-Penta CDF	2021/02/17	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2021/02/17	22		%	25
			1,2,3,6,7,8-Hexa CDF	2021/02/17	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2021/02/17	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2021/02/17	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2021/02/17	NC		%	25
			1,2,3,4,7,8,9-Hepta CDF	2021/02/17	NC		%	25
			Octa CDF	2021/02/17	33 (2)		%	25
			Total Tetra CDF	2021/02/17	18		%	25
			Total Penta CDF	2021/02/17	NC		%	25
			Total Hexa CDF	2021/02/17	31 (2)		%	25
			Total Hepta CDF	2021/02/17	27 (2)		%	25
7210685	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2021/02/21		65	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/21		90	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/21		106	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'33'455'66'-NonaCB-(208)	2021/02/21		103	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/21		110	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/21		95	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/21		109	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/21		83	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/21		75	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/21		66	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/21		52	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/21		46	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/21		42	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/21		95	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/21		107	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/21		97	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/21		87	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/21		90	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/21		88	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/21		91	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/21		90	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/21		41	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/21		81	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/21		93	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/21		89	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/21		84	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/21		72	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/21		56	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/21		40	%	15 - 150
			C13-DecaCB-(209)	2021/02/21		88	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/21		90	%	25 - 150
			2-MonoCB-(1)	2021/02/21		104	%	50 - 150
			3-MonoCB-(2)	2021/02/21		100	%	N/A
			4-MonoCB-(3)	2021/02/21		106	%	50 - 150
			22'-DiCB-(4)	2021/02/21		106	%	50 - 150
			2,3-DiCB-(5)	2021/02/21		94	%	N/A
			2,3'-DiCB-(6)	2021/02/21		87	%	N/A
			2,4-DiCB-(7)	2021/02/21		84	%	N/A
			2,4'-DiCB-(8)	2021/02/21		89	%	N/A
			2,5-DiCB-(9)	2021/02/21		90	%	N/A
			2,6-DiCB-(10)	2021/02/21		78	%	N/A
			3,3'-DiCB-(11)	2021/02/21		126	%	N/A
			DiCB-(12)+(13)	2021/02/21		97	%	N/A
			3,5-DiCB-(14)	2021/02/21		93	%	N/A
			4,4'-DiCB-(15)	2021/02/21		108	%	50 - 150
			22'3-TriCB-(16)	2021/02/21		78	%	N/A
			22'4-TriCB-(17)	2021/02/21		80	%	N/A
			TriCB-(18)+(30)	2021/02/21		77	%	N/A
			22'6-TriCB-(19)	2021/02/21		105	%	50 - 150
			TriCB-(20) + (28)	2021/02/21		97	%	N/A
			TriCB-(21)+(33)	2021/02/21		95	%	N/A
			234'-TriCB-(22)	2021/02/21		100	%	N/A
			235-TriCB-(23)	2021/02/21		102	%	50 - 150
			236-TriCB-(24)	2021/02/21		81	%	N/A
			23'4-TriCB-(25)	2021/02/21		92	%	N/A
			TriCB-(26)+(29)	2021/02/21		93	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'6-TriCB-(27)	2021/02/21		79	%	N/A
			24'5-TriCB-(31)	2021/02/21		92	%	N/A
			24'6-TriCB-(32)	2021/02/21		83	%	N/A
			23'5'-TriCB-(34)	2021/02/21		82	%	50 - 150
			33'4-TriCB-(35)	2021/02/21		116	%	N/A
			33'5-TriCB-(36)	2021/02/21		103	%	N/A
			344'-TriCB-(37)	2021/02/21		102	%	50 - 150
			345-TriCB-(38)	2021/02/21		105	%	N/A
			34'5-TriCB-(39)	2021/02/21		107	%	N/A
			TetraCB-(40)+(41)+(71)	2021/02/21		84	%	N/A
			22'34'-TetraCB-(42)	2021/02/21		79	%	N/A
			22'35-TetraCB-(43)	2021/02/21		73	%	N/A
			TetraCB-(44)+(47)+(65)	2021/02/21		79	%	N/A
			TetraCB-(45)+(51)	2021/02/21		73	%	N/A
			22'36'-TetraCB-(46)	2021/02/21		72	%	N/A
			22'45-TetraCB-(48)	2021/02/21		80	%	N/A
			TetraCB-(49)+TetraCB-(69)	2021/02/21		79	%	N/A
			TetraCB-(50)+(53)	2021/02/21		70	%	N/A
			22'55'-TetraCB-(52)	2021/02/21		82	%	N/A
			22'66'-TetraCB-(54)	2021/02/21		108	%	50 - 150
			233'4-TetraCB-(55)	2021/02/21		101	%	N/A
			233'4'-Tetra CB(56)	2021/02/21		92	%	N/A
			233'5-TetraCB-(57)	2021/02/21		88	%	N/A
			233'5'-TetraCB-(58)	2021/02/21		96	%	N/A
			TetraCB-(59)+(62)+(75)	2021/02/21		80	%	N/A
			2344'-TetraCB -(60)	2021/02/21		99	%	N/A
			TetraCB-(61)+(70)+(74)+(76)	2021/02/21		91	%	N/A
			234'5-TetraCB-(63)	2021/02/21		90	%	N/A
			234'6-TetraCB-(64)	2021/02/21		84	%	N/A
			23'44'-TetraCB-(66)	2021/02/21		92	%	N/A
			23'45-TetraCB-(67)	2021/02/21		87	%	N/A
			23'45'-TetraCB-(68)	2021/02/21		91	%	N/A
			23'55'-TetraCB-(72)	2021/02/21		89	%	N/A
			23'5'6-TetraCB-(73)	2021/02/21		78	%	N/A
			33'44'-TetraCB-(77)	2021/02/21		100	%	50 - 150
			33'45-TetraCB-(78)	2021/02/21		102	%	N/A
			33'45'-TetraCB(79)	2021/02/21		99	%	N/A
			33'55'-TetraCB-(80)	2021/02/21		95	%	N/A
			344'5-TetraCB-(81)	2021/02/21		107	%	50 - 150
			22'33'4-PentaCB-(82)	2021/02/21		94	%	N/A
			PentaCB-(83)+(99)	2021/02/21		86	%	N/A
			22'33'6-PentaCB-(84)	2021/02/21		88	%	N/A
			PentaCB-(85)+(116)+(117)	2021/02/21		96	%	N/A
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/21		94	%	N/A
			PentaCB-(88)+(91)	2021/02/21		83	%	N/A
			22'346'-PentaCB-(89)	2021/02/21		88	%	N/A
			PentaCB-(90)+(101)+(113)	2021/02/21		92	%	N/A
			22'355'-PentaCB-(92)	2021/02/21		88	%	N/A
			PentaCB-(93)+(98)+(100)+(102)	2021/02/21		81	%	N/A
			22'356'-PentaCB-(94)	2021/02/21		83	%	N/A
			22'35'6-PentaCB-(95)	2021/02/21		87	%	N/A
			22'366'-PentaCB-(96)	2021/02/21		72	%	N/A
			22'45'6-PentaCB-(103)	2021/02/21		84	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'466'-PentaCB-(104)	2021/02/21		100	%	50 - 150
			233'44'-PentaCB-(105)	2021/02/21		107	%	50 - 150
			233'45-PentaCB-(106)	2021/02/21		97	%	N/A
			233'4'5-PentaCB-(107)	2021/02/21		108	%	N/A
			PentaCB-(108)+(124)	2021/02/21		102	%	N/A
			PentaCB-(110)+(115)	2021/02/21		89	%	N/A
			233'55'-PentaCB-(111)	2021/02/21		98	%	N/A
			233'56-PentaCB-(112)	2021/02/21		98	%	N/A
			2344'5-PentaCB-(114)	2021/02/21		109	%	50 - 150
			23'44'5-PentaCB-(118)	2021/02/21		104	%	50 - 150
			23'455'-PentaCB-(120)	2021/02/21		94	%	N/A
			23'45'6-PentaCB-(121)	2021/02/21		88	%	N/A
			233'4'5'-PentaCB-(122)	2021/02/21		105	%	N/A
			23'44'5'-PentaCB-(123)	2021/02/21		103	%	50 - 150
			33'44'5-PentaCB-(126)	2021/02/21		107	%	50 - 150
			33'455'-PentaCB-(127)	2021/02/21		97	%	N/A
			HexaCB-(128)+(166)	2021/02/21		98	%	N/A
			HexaCB-(129)+(138)+(163)	2021/02/21		97	%	N/A
			22'33'45'-HexaCB-(130)	2021/02/21		92	%	N/A
			22'33'46-HexaCB-(131)	2021/02/21		99	%	N/A
			22'33'46'-HexaCB-(132)	2021/02/21		101	%	N/A
			22'33'55'-HexaCB-(133)	2021/02/21		97	%	N/A
			HexaCB-(134)+(143)	2021/02/21		93	%	N/A
			HexaCB-(135)+(151)	2021/02/21		92	%	N/A
			22'33'66'-HexaCB-(136)	2021/02/21		86	%	N/A
			22'344'5-HexaCB-(137)	2021/02/21		105	%	N/A
			HexaCB-(139)+(140)	2021/02/21		95	%	N/A
			22'3455'-HexaCB-(141)	2021/02/21		94	%	N/A
			22'3456-HexaCB-(142)	2021/02/21		92	%	N/A
			22'345'6-HexaCB-(144)	2021/02/21		83	%	N/A
			22'3466'-HexaCB-(145)	2021/02/21		88	%	N/A
			22'34'55'-HexaCB-(146)	2021/02/21		78	%	N/A
			HexaCB-(147)+(149)	2021/02/21		97	%	N/A
			22'34'56'-HexaCB-(148)	2021/02/21		90	%	N/A
			22'34'66'-HexaCB-(150)	2021/02/21		92	%	N/A
			22'3566'-HexaCB-(152)	2021/02/21		84	%	N/A
			HexaCB-(153)+(168)	2021/02/21		94	%	N/A
			22'44'56'-HexaCB-(154)	2021/02/21		92	%	N/A
			22'44'66'-HexaCB-(155)	2021/02/21		97	%	50 - 150
			HexaCB-(156)+(157)	2021/02/21		106	%	50 - 150
			233'44'6-HexaCB-(158)	2021/02/21		94	%	N/A
			233'455'-HexaCB-(159)	2021/02/21		97	%	N/A
			233'456-HexaCB-(160)	2021/02/21		88	%	N/A
			233'45'6-HexaCB-(161)	2021/02/21		90	%	N/A
			233'4'55'-HexaCB-(162)	2021/02/21		100	%	N/A
			233'4'5'6-HexaCB-(164)	2021/02/21		87	%	N/A
			233'55'6-HexaCB-(165)	2021/02/21		88	%	N/A
			23'44'55'-HexaCB-(167)	2021/02/21		108	%	50 - 150
			33'44'55'-HexaCB-(169)	2021/02/21		104	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2021/02/21		95	%	50 - 150
			HeptaCB-(171)+(173)	2021/02/21		97	%	N/A
			22'33'455'-HeptaCB-(172)	2021/02/21		100	%	N/A
			22'33'456'-HeptaCB-(174)	2021/02/21		93	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'45'6-HeptaCB-(175)	2021/02/21		91	%	N/A
			22'33'466'-HeptaCB-(176)	2021/02/21		89	%	N/A
			22'33'45'6'-HeptaCB-(177)	2021/02/21		97	%	N/A
			22'33'55'6-HeptaCB-(178)	2021/02/21		91	%	N/A
			22'33'566'-HeptaCB-(179)	2021/02/21		109	%	N/A
			HeptaCB-(180)+(193)	2021/02/21		95	%	50 - 150
			22'344'56-HeptaCB-(181)	2021/02/21		96	%	N/A
			22'344'56'-HeptaCB-(182)	2021/02/21		95	%	50 - 150
			22'344'5'6-HeptaCB-(183)	2021/02/21		105	%	N/A
			22'344'66'-HeptaCB-(184)	2021/02/21		87	%	N/A
			22'3455'6-HeptaCB-(185)	2021/02/21		95	%	N/A
			22'34566'-HeptaCB-(186)	2021/02/21		90	%	N/A
			22'34'55'6-HeptaCB-(187)	2021/02/21		102	%	50 - 150
			22'34'566'-HeptaCB-(188)	2021/02/21		98	%	50 - 150
			233'44'55'-HeptaCB-(189)	2021/02/21		99	%	50 - 150
			233'44'56-HeptaCB-(190)	2021/02/21		98	%	N/A
			233'44'5'6-HeptaCB-(191)	2021/02/21		94	%	N/A
			233'455'6-HeptaCB-(192)	2021/02/21		98	%	N/A
			22'33'44'55'-OctaCB-(194)	2021/02/21		94	%	N/A
			22'33'44'56-OctaCB-(195)	2021/02/21		98	%	N/A
			22'33'44'56'-OctaCB-(196)	2021/02/21		102	%	N/A
			22'33'44'66'OctaCB-(197)	2021/02/21		106	%	N/A
			OctaCB-(198)+(199)	2021/02/21		99	%	N/A
			22'33'4566'-OctaCB-(200)	2021/02/21		103	%	N/A
			22'33'45'66'-OctaCB-(201)	2021/02/21		99	%	N/A
			22'33'55'66'-OctaCB-(202)	2021/02/21		95	%	50 - 150
			22'344'55'6-OctaCB-(203)	2021/02/21		101	%	N/A
			22'344'566'-OctaCB-(204)	2021/02/21		97	%	N/A
			233'44'55'6-OctaCB-(205)	2021/02/21		101	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2021/02/21		97	%	50 - 150
			22'33'44'566'-NonaCB-(207)	2021/02/21		97	%	N/A
			22'33'455'66'-NonaCB-(208)	2021/02/21		97	%	50 - 150
			DecaCB-(209)	2021/02/21		111	%	50 - 150
7210685	CXU	Spiked Blank DUP	C13-2,44'-TriCB-(28)	2021/02/22		66	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/22		79	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/22		92	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/22		89	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/22		96	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/22		86	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/22		96	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/22		78	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/22		70	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/22		62	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/22		51	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/22		43	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/22		39	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/22		84	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/22		94	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/22		89	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/22		80	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/22		83	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/22		81	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/22		83	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-2'344'5-PentaCB-(123)	2021/02/22		82	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/22		37	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/22		77	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/22		84	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/22		84	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/22		81	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/22		70	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/22		56	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/22		36	%	15 - 150
			C13-DecaCB-(209)	2021/02/22		78	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/22		82	%	25 - 150
			2-MonoCB-(1)	2021/02/22		108	%	50 - 150
			3-MonoCB-(2)	2021/02/22		107	%	N/A
			4-MonoCB-(3)	2021/02/22		113	%	50 - 150
			22'-DiCB-(4)	2021/02/22		112	%	50 - 150
			2,3-DiCB-(5)	2021/02/22		69	%	N/A
			2,3'-DiCB-(6)	2021/02/22		88	%	N/A
			2,4-DiCB-(7)	2021/02/22		86	%	N/A
			2,4'-DiCB-(8)	2021/02/22		113	%	N/A
			2,5-DiCB-(9)	2021/02/22		90	%	N/A
			2,6-DiCB-(10)	2021/02/22		75	%	N/A
			3,3'-DiCB-(11)	2021/02/22		136	%	N/A
			DiCB-(12)+(13)	2021/02/22		103	%	N/A
			3,5-DiCB-(14)	2021/02/22		97	%	N/A
			4,4'-DiCB-(15)	2021/02/22		115	%	50 - 150
			22'3-TriCB-(16)	2021/02/22		71	%	N/A
			22'4-TriCB-(17)	2021/02/22		85	%	N/A
			TriCB-(18)+(30)	2021/02/22		82	%	N/A
			22'6-TriCB-(19)	2021/02/22		107	%	50 - 150
			TriCB-(20) + (28)	2021/02/22		105	%	N/A
			TriCB-(21)+(33)	2021/02/22		99	%	N/A
			234'-TriCB-(22)	2021/02/22		104	%	N/A
			235-TriCB-(23)	2021/02/22		105	%	50 - 150
			236-TriCB-(24)	2021/02/22		86	%	N/A
			23'4-TriCB-(25)	2021/02/22		93	%	N/A
			TriCB-(26)+(29)	2021/02/22		97	%	N/A
			23'6-TriCB-(27)	2021/02/22		85	%	N/A
			24'5-TriCB-(31)	2021/02/22		98	%	N/A
			24'6-TriCB-(32)	2021/02/22		87	%	N/A
			23'5'-TriCB-(34)	2021/02/22		87	%	50 - 150
			33'4-TriCB-(35)	2021/02/22		115	%	N/A
			33'5-TriCB-(36)	2021/02/22		107	%	N/A
			344'-TriCB-(37)	2021/02/22		106	%	50 - 150
			345-TriCB-(38)	2021/02/22		108	%	N/A
			34'5-TriCB-(39)	2021/02/22		114	%	N/A
			TetraCB-(40)+(41)+(71)	2021/02/22		88	%	N/A
			22'34'-TetraCB-(42)	2021/02/22		76	%	N/A
			22'35-TetraCB-(43)	2021/02/22		96	%	N/A
			TetraCB-(44)+(47)+(65)	2021/02/22		82	%	N/A
			TetraCB-(45)+(51)	2021/02/22		74	%	N/A
			22'36'-TetraCB-(46)	2021/02/22		77	%	N/A
			22'45-TetraCB-(48)	2021/02/22		86	%	N/A
			TetraCB-(49)+TetraCB-(69)	2021/02/22		81	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			TetraCB-(50)+(53)	2021/02/22		74	%	N/A
			22'55'-TetraCB-(52)	2021/02/22		91	%	N/A
			22'66'-TetraCB-(54)	2021/02/22		112	%	50 - 150
			233'4-TetraCB-(55)	2021/02/22		98	%	N/A
			233'4'-Tetra CB(56)	2021/02/22		95	%	N/A
			233'5-TetraCB-(57)	2021/02/22		90	%	N/A
			233'5'-TetraCB-(58)	2021/02/22		95	%	N/A
			TetraCB-(59)+(62)+(75)	2021/02/22		84	%	N/A
			2344'-TetraCB -(60)	2021/02/22		101	%	N/A
			TetraCB-(61)+(70)+(74)+(76)	2021/02/22		93	%	N/A
			234'5-TetraCB-(63)	2021/02/22		91	%	N/A
			234'6-TetraCB-(64)	2021/02/22		88	%	N/A
			23'44'-TetraCB-(66)	2021/02/22		93	%	N/A
			23'45-TetraCB-(67)	2021/02/22		94	%	N/A
			23'45'-TetraCB-(68)	2021/02/22		93	%	N/A
			23'55'-TetraCB-(72)	2021/02/22		89	%	N/A
			23'5'6-TetraCB-(73)	2021/02/22		69	%	N/A
			33'44'-TetraCB-(77)	2021/02/22		97	%	50 - 150
			33'45-TetraCB-(78)	2021/02/22		101	%	N/A
			33'45'-TetraCB(79)	2021/02/22		103	%	N/A
			33'55'-TetraCB-(80)	2021/02/22		95	%	N/A
			344'5-TetraCB-(81)	2021/02/22		109	%	50 - 150
			22'33'4-PentaCB-(82)	2021/02/22		95	%	N/A
			PentaCB-(83)+(99)	2021/02/22		95	%	N/A
			22'33'6-PentaCB-(84)	2021/02/22		89	%	N/A
			PentaCB-(85)+(116)+(117)	2021/02/22		94	%	N/A
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/22		95	%	N/A
			PentaCB-(88)+(91)	2021/02/22		87	%	N/A
			22'346'-PentaCB-(89)	2021/02/22		91	%	N/A
			PentaCB-(90)+(101)+(113)	2021/02/22		96	%	N/A
			22'355'-PentaCB-(92)	2021/02/22		90	%	N/A
			PentaCB-(93)+(98)+(100)+(102)	2021/02/22		86	%	N/A
			22'356'-PentaCB-(94)	2021/02/22		87	%	N/A
			22'35'6-PentaCB-(95)	2021/02/22		90	%	N/A
			22'366'-PentaCB-(96)	2021/02/22		77	%	N/A
			22'45'6-PentaCB-(103)	2021/02/22		87	%	N/A
			22'466'-PentaCB-(104)	2021/02/22		103	%	50 - 150
			233'44'-PentaCB-(105)	2021/02/22		111	%	50 - 150
			233'45-PentaCB-(106)	2021/02/22		101	%	N/A
			233'4'5-PentaCB-(107)	2021/02/22		104	%	N/A
			PentaCB-(108)+(124)	2021/02/22		102	%	N/A
			PentaCB-(110)+(115)	2021/02/22		97	%	N/A
			233'55'-PentaCB-(111)	2021/02/22		98	%	N/A
			233'56-PentaCB-(112)	2021/02/22		96	%	N/A
			2344'5-PentaCB-(114)	2021/02/22		114	%	50 - 150
			23'44'5-PentaCB-(118)	2021/02/22		110	%	50 - 150
			23'455'-PentaCB-(120)	2021/02/22		99	%	N/A
			23'45'6-PentaCB-(121)	2021/02/22		93	%	N/A
			233'4'5'-PentaCB-(122)	2021/02/22		106	%	N/A
			23'44'5'-PentaCB-(123)	2021/02/22		108	%	50 - 150
			33'44'5-PentaCB-(126)	2021/02/22		108	%	50 - 150
			33'455'-PentaCB-(127)	2021/02/22		98	%	N/A
			HexaCB-(128)+(166)	2021/02/22		99	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			HexaCB-(129)+(138)+(163)	2021/02/22		96	%	N/A
			22'33'45'-HexaCB-(130)	2021/02/22		95	%	N/A
			22'33'46-HexaCB-(131)	2021/02/22		99	%	N/A
			22'33'46'-HexaCB-(132)	2021/02/22		101	%	N/A
			22'33'55'-HexaCB-(133)	2021/02/22		100	%	N/A
			HexaCB-(134)+(143)	2021/02/22		93	%	N/A
			HexaCB-(135)+(151)	2021/02/22		96	%	N/A
			22'33'66'-HexaCB-(136)	2021/02/22		89	%	N/A
			22'344'5-HexaCB-(137)	2021/02/22		98	%	N/A
			HexaCB-(139)+(140)	2021/02/22		96	%	N/A
			22'3455'-HexaCB-(141)	2021/02/22		101	%	N/A
			22'3456-HexaCB-(142)	2021/02/22		96	%	N/A
			22'345'6-HexaCB-(144)	2021/02/22		96	%	N/A
			22'3466'-HexaCB-(145)	2021/02/22		91	%	N/A
			22'34'55'-HexaCB-(146)	2021/02/22		85	%	N/A
			HexaCB-(147)+(149)	2021/02/22		96	%	N/A
			22'34'56'-HexaCB-(148)	2021/02/22		94	%	N/A
			22'34'66'-HexaCB-(150)	2021/02/22		92	%	N/A
			22'3566'-HexaCB-(152)	2021/02/22		88	%	N/A
			HexaCB-(153)+(168)	2021/02/22		93	%	N/A
			22'44'56'-HexaCB-(154)	2021/02/22		96	%	N/A
			22'44'66'-HexaCB-(155)	2021/02/22		102	%	50 - 150
			HexaCB-(156)+(157)	2021/02/22		110	%	50 - 150
			233'44'6-HexaCB-(158)	2021/02/22		96	%	N/A
			233'455'-HexaCB-(159)	2021/02/22		102	%	N/A
			233'456-HexaCB-(160)	2021/02/22		93	%	N/A
			233'45'6-HexaCB-(161)	2021/02/22		90	%	N/A
			233'4'55'-HexaCB-(162)	2021/02/22		104	%	N/A
			233'4'5'6-HexaCB-(164)	2021/02/22		95	%	N/A
			233'55'6-HexaCB-(165)	2021/02/22		92	%	N/A
			23'44'55'-HexaCB-(167)	2021/02/22		111	%	50 - 150
			33'44'55'-HexaCB-(169)	2021/02/22		108	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2021/02/22		99	%	50 - 150
			HeptaCB-(171)+(173)	2021/02/22		97	%	N/A
			22'33'455'-HeptaCB-(172)	2021/02/22		102	%	N/A
			22'33'456'-HeptaCB-(174)	2021/02/22		100	%	N/A
			22'33'45'6-HeptaCB-(175)	2021/02/22		92	%	N/A
			22'33'466'-HeptaCB-(176)	2021/02/22		90	%	N/A
			22'33'45'6'-HeptaCB-(177)	2021/02/22		100	%	N/A
			22'33'55'6-HeptaCB-(178)	2021/02/22		94	%	N/A
			22'33'566'-HeptaCB-(179)	2021/02/22		112	%	N/A
			HeptaCB-(180)+(193)	2021/02/22		97	%	50 - 150
			22'344'56-HeptaCB-(181)	2021/02/22		100	%	N/A
			22'344'56'-HeptaCB-(182)	2021/02/22		97	%	50 - 150
			22'344'5'6-HeptaCB-(183)	2021/02/22		97	%	N/A
			22'344'66'-HeptaCB-(184)	2021/02/22		90	%	N/A
			22'3455'6-HeptaCB-(185)	2021/02/22		100	%	N/A
			22'34566'-HeptaCB-(186)	2021/02/22		93	%	N/A
			22'34'55'6-HeptaCB-(187)	2021/02/22		102	%	50 - 150
			22'34'566'-HeptaCB-(188)	2021/02/22		100	%	50 - 150
			233'44'55'-HeptaCB-(189)	2021/02/22		98	%	50 - 150
			233'44'56-HeptaCB-(190)	2021/02/22		96	%	N/A
			233'44'5'6-HeptaCB-(191)	2021/02/22		98	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'455'6-HeptaCB-(192)	2021/02/22		101	%	N/A
			22'33'44'55'-OctaCB-(194)	2021/02/22		96	%	N/A
			22'33'44'56-OctaCB-(195)	2021/02/22		99	%	N/A
			22'33'44'56'-OctaCB-(196)	2021/02/22		103	%	N/A
			22'33'44'66'OctaCB-(197)	2021/02/22		117	%	N/A
			OctaCB-(198)+(199)	2021/02/22		101	%	N/A
			22'33'4566'-OctaCB-(200)	2021/02/22		100	%	N/A
			22'33'45'66'-OctaCB-(201)	2021/02/22		100	%	N/A
			22'33'55'66'-OctaCB-(202)	2021/02/22		97	%	50 - 150
			22'344'55'6-OctaCB-(203)	2021/02/22		100	%	N/A
			22'344'566'-OctaCB-(204)	2021/02/22		100	%	N/A
			233'44'55'6-OctaCB-(205)	2021/02/22		105	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2021/02/22		98	%	50 - 150
			22'33'44'566'-NonaCB-(207)	2021/02/22		102	%	N/A
			22'33'455'66'-NonaCB-(208)	2021/02/22		102	%	50 - 150
			DecaCB-(209)	2021/02/22		113	%	50 - 150
7210685	CXU	RPD	2-MonoCB-(1)	2021/02/22	3.8		%	30
			3-MonoCB-(2)	2021/02/22	6.8		%	30
			4-MonoCB-(3)	2021/02/22	6.4		%	30
			22'-DiCB-(4)	2021/02/22	5.5		%	30
			2,3-DiCB-(5)	2021/02/22	31 (4)		%	30
			2,3'-DiCB-(6)	2021/02/22	1.1		%	30
			2,4-DiCB-(7)	2021/02/22	2.4		%	30
			2,4'-DiCB-(8)	2021/02/22	24		%	30
			2,5-DiCB-(9)	2021/02/22	0		%	30
			2,6-DiCB-(10)	2021/02/22	3.9		%	30
			3,3'-DiCB-(11)	2021/02/22	7.6		%	30
			DiCB-(12)+(13)	2021/02/22	6.0		%	30
			3,5-DiCB-(14)	2021/02/22	4.2		%	30
			4,4'-DiCB-(15)	2021/02/22	6.3		%	30
			22'3-TriCB-(16)	2021/02/22	9.4		%	30
			22'4-TriCB-(17)	2021/02/22	6.1		%	30
			TriCB-(18)+(30)	2021/02/22	6.3		%	30
			22'6-TriCB-(19)	2021/02/22	1.9		%	30
			TriCB-(20) + (28)	2021/02/22	7.9		%	30
			TriCB-(21)+(33)	2021/02/22	4.1		%	30
			234'-TriCB-(22)	2021/02/22	3.9		%	30
			235-TriCB-(23)	2021/02/22	2.9		%	30
			236-TriCB-(24)	2021/02/22	6.0		%	30
			23'4-TriCB-(25)	2021/02/22	1.1		%	30
			TriCB-(26)+(29)	2021/02/22	4.2		%	30
			23'6-TriCB-(27)	2021/02/22	7.3		%	30
			24'5-TriCB-(31)	2021/02/22	6.3		%	30
			24'6-TriCB-(32)	2021/02/22	4.7		%	30
			23'5'-TriCB-(34)	2021/02/22	5.9		%	30
			33'4-TriCB-(35)	2021/02/22	0.87		%	30
			33'5-TriCB-(36)	2021/02/22	3.8		%	30
			344'-TriCB-(37)	2021/02/22	3.8		%	30
			345-TriCB-(38)	2021/02/22	2.8		%	30
			34'5-TriCB-(39)	2021/02/22	6.3		%	30
			TetraCB-(40)+(41)+(71)	2021/02/22	4.7		%	30
			22'34'-TetraCB-(42)	2021/02/22	3.9		%	30
			22'35-TetraCB-(43)	2021/02/22	27		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			TetraCB-(44)+(47)+(65)	2021/02/22	3.7		%	30
			TetraCB-(45)+(51)	2021/02/22	1.4		%	30
			22'36'-TetraCB-(46)	2021/02/22	6.7		%	30
			22'45-TetraCB-(48)	2021/02/22	7.2		%	30
			TetraCB-(49)+TetraCB-(69)	2021/02/22	2.5		%	30
			TetraCB-(50)+(53)	2021/02/22	5.6		%	30
			22'55'-TetraCB-(52)	2021/02/22	10		%	30
			22'66'-TetraCB-(54)	2021/02/22	3.6		%	30
			233'4-TetraCB-(55)	2021/02/22	3.0		%	30
			233'4'-Tetra CB(56)	2021/02/22	3.2		%	30
			233'5-TetraCB-(57)	2021/02/22	2.2		%	30
			233'5'-TetraCB-(58)	2021/02/22	1.0		%	30
			TetraCB-(59)+(62)+(75)	2021/02/22	4.9		%	30
			2344'-TetraCB -(60)	2021/02/22	2.0		%	30
			TetraCB-(61)+(70)+(74)+(76)	2021/02/22	2.2		%	30
			234'5-TetraCB-(63)	2021/02/22	1.1		%	30
			234'6-TetraCB-(64)	2021/02/22	4.7		%	30
			23'44'-TetraCB-(66)	2021/02/22	1.1		%	30
			23'45-TetraCB-(67)	2021/02/22	7.7		%	30
			23'45'-TetraCB-(68)	2021/02/22	2.2		%	30
			23'55'-TetraCB-(72)	2021/02/22	0		%	30
			23'5'6-TetraCB-(73)	2021/02/22	12		%	30
			33'44'-TetraCB-(77)	2021/02/22	3.0		%	30
			33'45-TetraCB-(78)	2021/02/22	0.99		%	30
			33'45'-TetraCB(79)	2021/02/22	4.0		%	30
			33'55'-TetraCB-(80)	2021/02/22	0		%	30
			344'5-TetraCB-(81)	2021/02/22	1.9		%	30
			22'33'4-PentaCB-(82)	2021/02/22	1.1		%	30
			PentaCB-(83)+(99)	2021/02/22	9.9		%	30
			22'33'6-PentaCB-(84)	2021/02/22	1.1		%	30
			PentaCB-(85)+(116)+(117)	2021/02/22	2.1		%	30
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/22	1.1		%	30
			PentaCB-(88)+(91)	2021/02/22	4.7		%	30
			22'346'-PentaCB-(89)	2021/02/22	3.4		%	30
			PentaCB-(90)+(101)+(113)	2021/02/22	4.3		%	30
			22'355'-PentaCB-(92)	2021/02/22	2.2		%	30
			PentaCB-(93)+(98)+(100)+(102)	2021/02/22	6.0		%	30
			22'356'-PentaCB-(94)	2021/02/22	4.7		%	30
			22'35'6-PentaCB-(95)	2021/02/22	3.4		%	30
			22'366'-PentaCB-(96)	2021/02/22	6.7		%	30
			22'45'6-PentaCB-(103)	2021/02/22	3.5		%	30
			22'466'-PentaCB-(104)	2021/02/22	3.0		%	30
			233'44'-PentaCB-(105)	2021/02/22	3.7		%	30
			233'45-PentaCB-(106)	2021/02/22	4.0		%	30
			233'4'5-PentaCB-(107)	2021/02/22	3.8		%	30
			PentaCB-(108)+(124)	2021/02/22	0		%	30
			PentaCB-(110)+(115)	2021/02/22	8.6		%	30
			233'55'-PentaCB-(111)	2021/02/22	0		%	30
			233'56-PentaCB-(112)	2021/02/22	2.1		%	30
			2344'5-PentaCB-(114)	2021/02/22	4.5		%	30
			23'44'5-PentaCB-(118)	2021/02/22	5.6		%	30
			23'455'-PentaCB-(120)	2021/02/22	5.2		%	30
			23'45'6-PentaCB-(121)	2021/02/22	5.5		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'4'5'-PentaCB-(122)	2021/02/22	0.95		%	30
			23'44'5'-PentaCB-(123)	2021/02/22	4.7		%	30
			33'44'5-PentaCB-(126)	2021/02/22	0.93		%	30
			33'455'-PentaCB-(127)	2021/02/22	1.0		%	30
			HexaCB-(128)+(166)	2021/02/22	1.0		%	30
			HexaCB-(129)+(138)+(163)	2021/02/22	1.0		%	30
			22'33'45'-HexaCB-(130)	2021/02/22	3.2		%	30
			22'33'46-HexaCB-(131)	2021/02/22	0		%	30
			22'33'46'-HexaCB-(132)	2021/02/22	0		%	30
			22'33'55'-HexaCB-(133)	2021/02/22	3.0		%	30
			HexaCB-(134)+(143)	2021/02/22	0		%	30
			HexaCB-(135)+(151)	2021/02/22	4.3		%	30
			22'33'66'-HexaCB-(136)	2021/02/22	3.4		%	30
			22'344'5-HexaCB-(137)	2021/02/22	6.9		%	30
			HexaCB-(139)+(140)	2021/02/22	1.0		%	30
			22'3455'-HexaCB-(141)	2021/02/22	7.2		%	30
			22'3456-HexaCB-(142)	2021/02/22	4.3		%	30
			22'345'6-HexaCB-(144)	2021/02/22	15		%	30
			22'3466'-HexaCB-(145)	2021/02/22	3.4		%	30
			22'34'55'-HexaCB-(146)	2021/02/22	8.6		%	30
			HexaCB-(147)+(149)	2021/02/22	1.0		%	30
			22'34'56'-HexaCB-(148)	2021/02/22	4.3		%	30
			22'34'66'-HexaCB-(150)	2021/02/22	0		%	30
			22'3566'-HexaCB-(152)	2021/02/22	4.7		%	30
			HexaCB-(153)+(168)	2021/02/22	1.1		%	30
			22'44'56'-HexaCB-(154)	2021/02/22	4.3		%	30
			22'44'66'-HexaCB-(155)	2021/02/22	5.0		%	30
			HexaCB-(156)+(157)	2021/02/22	3.7		%	30
			233'44'6-HexaCB-(158)	2021/02/22	2.1		%	30
			233'455'-HexaCB-(159)	2021/02/22	5.0		%	30
			233'456-HexaCB-(160)	2021/02/22	5.5		%	30
			233'45'6-HexaCB-(161)	2021/02/22	0		%	30
			233'4'55'-HexaCB-(162)	2021/02/22	3.9		%	30
			233'4'5'6-HexaCB-(164)	2021/02/22	8.8		%	30
			233'55'6-HexaCB-(165)	2021/02/22	4.4		%	30
			23'44'55'-HexaCB-(167)	2021/02/22	2.7		%	30
			33'44'55'-HexaCB-(169)	2021/02/22	3.8		%	30
			22'33'44'5-HeptaCB-(170)	2021/02/22	4.1		%	30
			HeptaCB-(171)+(173)	2021/02/22	0		%	30
			22'33'455'-HeptaCB-(172)	2021/02/22	2.0		%	30
			22'33'456'-HeptaCB-(174)	2021/02/22	7.3		%	30
			22'33'45'6-HeptaCB-(175)	2021/02/22	1.1		%	30
			22'33'466'-HeptaCB-(176)	2021/02/22	1.1		%	30
			22'33'45'6'-HeptaCB-(177)	2021/02/22	3.0		%	30
			22'33'55'6-HeptaCB-(178)	2021/02/22	3.2		%	30
			22'33'566'-HeptaCB-(179)	2021/02/22	2.7		%	30
			HeptaCB-(180)+(193)	2021/02/22	2.1		%	30
			22'344'56-HeptaCB-(181)	2021/02/22	4.1		%	30
			22'344'56'-HeptaCB-(182)	2021/02/22	2.1		%	30
			22'344'5'6-HeptaCB-(183)	2021/02/22	7.9		%	30
			22'344'66'-HeptaCB-(184)	2021/02/22	3.4		%	30
			22'3455'6-HeptaCB-(185)	2021/02/22	5.1		%	30
			22'34566'-HeptaCB-(186)	2021/02/22	3.3		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'34'55'6-HeptaCB-(187)	2021/02/22	0		%	30
			22'34'566'-HeptaCB-(188)	2021/02/22	2.0		%	30
			233'44'55'-HeptaCB-(189)	2021/02/22	1.0		%	30
			233'44'56-HeptaCB-(190)	2021/02/22	2.1		%	30
			233'44'5'6-HeptaCB-(191)	2021/02/22	4.2		%	30
			233'455'6-HeptaCB-(192)	2021/02/22	3.0		%	30
			22'33'44'55'-OctaCB-(194)	2021/02/22	2.1		%	30
			22'33'44'56-OctaCB-(195)	2021/02/22	1.0		%	30
			22'33'44'56'-OctaCB-(196)	2021/02/22	0.98		%	30
			22'33'44'66'OctaCB-(197)	2021/02/22	9.9		%	30
			OctaCB-(198)+(199)	2021/02/22	2.0		%	30
			22'33'4566'-OctaCB-(200)	2021/02/22	3.0		%	30
			22'33'45'66'-OctaCB-(201)	2021/02/22	1.0		%	30
			22'33'55'66'-OctaCB-(202)	2021/02/22	2.1		%	30
			22'344'55'6-OctaCB-(203)	2021/02/22	1.0		%	30
			22'344'566'-OctaCB-(204)	2021/02/22	3.0		%	30
			233'44'55'6-OctaCB-(205)	2021/02/22	3.9		%	30
			22'33'44'55'6-NonaCB-(206)	2021/02/22	1.0		%	30
			22'33'44'566'-NonaCB-(207)	2021/02/22	5.0		%	30
			22'33'455'66'-NonaCB-(208)	2021/02/22	5.0		%	30
			DecaCB-(209)	2021/02/22	1.8		%	30
7210685	CXU	Method Blank	C13-2,44'-TriCB-(28)	2021/02/22		80	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/22		94	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/22		116	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/22		111	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/22		120	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/22		102	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/22		120	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/22		91	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/22		87	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/22		79	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/22		65	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/22		55	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/22		51	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/22		100	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/22		114	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/22		107	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/22		97	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/22		99	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/22		97	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/22		100	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/22		99	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/22		48	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/22		83	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/22		100	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/22		100	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/22		98	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/22		86	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/22		68	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/22		48	%	15 - 150
			C13-DecaCB-(209)	2021/02/22		88	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/22		97	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2-MonoCB-(1)	2021/02/22	0.00014 U, EDL=0.00014		ng/g	
			3-MonoCB-(2)	2021/02/22	0.00012 U, EDL=0.00012		ng/g	
			4-MonoCB-(3)	2021/02/22	0.00013 U, EDL=0.00013		ng/g	
			22'-DiCB-(4)	2021/02/22	0.00039 U, EDL=0.00039		ng/g	
			2,3-DiCB-(5)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			2,3'-DiCB-(6)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			2,4-DiCB-(7)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			2,4'-DiCB-(8)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			2,5-DiCB-(9)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			2,6-DiCB-(10)	2021/02/22	0.00042 U, EDL=0.00042		ng/g	
			3,3'-DiCB-(11)	2021/02/22	0.0150, EDL=0.00016		ng/g	
			DiCB-(12)+(13)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			3,5-DiCB-(14)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			4,4'-DiCB-(15)	2021/02/22	0.00025 U, EDL=0.00025		ng/g	
			22'3-TriCB-(16)	2021/02/22	0.00063 U, EDL=0.00063		ng/g	
			22'4-TriCB-(17)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			TriCB-(18)+(30)	2021/02/22	0.00036 U, EDL=0.00036		ng/g	
			22'6-TriCB-(19)	2021/02/22	0.00033 U, EDL=0.00033		ng/g	
			TriCB-(20) + (28)	2021/02/22	0.00027 U, EDL=0.00027		ng/g	
			TriCB-(21)+(33)	2021/02/22	0.00027 U, EDL=0.00027		ng/g	
			234'-TriCB-(22)	2021/02/22	0.00029 U, EDL=0.00029		ng/g	
			235-TriCB-(23)	2021/02/22	0.00031 U, EDL=0.00031		ng/g	
			236-TriCB-(24)	2021/02/22	0.00030 U, EDL=0.00030		ng/g	
			23'4-TriCB-(25)	2021/02/22	0.00025 U, EDL=0.00025		ng/g	
			TriCB-(26)+(29)	2021/02/22	0.00028 U, EDL=0.00028		ng/g	
			23'6-TriCB-(27)	2021/02/22	0.00031 U, EDL=0.00031		ng/g	
			24'5-TriCB-(31)	2021/02/22	0.00026 U, EDL=0.00026		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			24'6-TriCB-(32)	2021/02/22	0.00030 U, EDL=0.00030		ng/g	
			23'5'-TriCB-(34)	2021/02/22	0.00027 U, EDL=0.00027		ng/g	
			33'4-TriCB-(35)	2021/02/22	0.00029 U, EDL=0.00029		ng/g	
			33'5-TriCB-(36)	2021/02/22	0.00025 U, EDL=0.00025		ng/g	
			344'-TriCB-(37)	2021/02/22	0.00045 U, EDL=0.00045		ng/g	
			345-TriCB-(38)	2021/02/22	0.00028 U, EDL=0.00028		ng/g	
			34'5-TriCB-(39)	2021/02/22	0.00028 U, EDL=0.00028		ng/g	
			TetraCB-(40)+(41)+(71)	2021/02/22	0.00077 U, EDL=0.00077		ng/g	
			22'34'-TetraCB-(42)	2021/02/22	0.00083 U, EDL=0.00083		ng/g	
			22'35-TetraCB-(43)	2021/02/22	0.0010 U, EDL=0.0010		ng/g	
			TetraCB-(44)+(47)+(65)	2021/02/22	0.00070 U, EDL=0.00070		ng/g	
			TetraCB-(45)+(51)	2021/02/22	0.00078 U, EDL=0.00078		ng/g	
			22'36'-TetraCB-(46)	2021/02/22	0.00091 U, EDL=0.00091		ng/g	
			22'45-TetraCB-(48)	2021/02/22	0.00079 U, EDL=0.00079		ng/g	
			TetraCB-(49)+TetraCB-(69)	2021/02/22	0.00066 U, EDL=0.00066		ng/g	
			TetraCB-(50)+(53)	2021/02/22	0.00075 U, EDL=0.00075		ng/g	
			22'55'-TetraCB-(52)	2021/02/22	0.00078 U, EDL=0.00078		ng/g	
			22'66'-TetraCB-(54)	2021/02/22	0.00022 U, EDL=0.00022		ng/g	
			233'4-TetraCB-(55)	2021/02/22	0.00058 U, EDL=0.00058		ng/g	
			233'4'-Tetra CB(56)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			233'5-TetraCB-(57)	2021/02/22	0.00054 U, EDL=0.00054		ng/g	
			233'5'-TetraCB-(58)	2021/02/22	0.00059 U, EDL=0.00059		ng/g	
			TetraCB-(59)+(62)+(75)	2021/02/22	0.00058 U, EDL=0.00058		ng/g	
			2344'-TetraCB -(60)	2021/02/22	0.00058 U, EDL=0.00058		ng/g	
			TetraCB-(61)+(70)+(74)+(76)	2021/02/22	0.00054 U, EDL=0.00054		ng/g	
			234'5-TetraCB-(63)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			234'6-TetraCB-(64)	2021/02/22	0.00063 U, EDL=0.00063		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'44'-TetraCB-(66)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			23'45-TetraCB-(67)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			23'45'-TetraCB-(68)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			23'55'-TetraCB-(72)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			23'5'6-TetraCB-(73)	2021/02/22	0.00053 U, EDL=0.00053		ng/g	
			33'44'-TetraCB-(77)	2021/02/22	0.00078 U, EDL=0.00078		ng/g	
			33'45-TetraCB-(78)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			33'45'-TetraCB(79)	2021/02/22	0.00051 U, EDL=0.00051		ng/g	
			33'55'-TetraCB-(80)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			344'5-TetraCB-(81)	2021/02/22	0.00076 U, EDL=0.00076		ng/g	
			22'33'4-PentaCB-(82)	2021/02/22	0.00073 U, EDL=0.00073		ng/g	
			PentaCB-(83)+(99)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			22'33'6-PentaCB-(84)	2021/02/22	0.00075 U, EDL=0.00075		ng/g	
			PentaCB-(85)+(116)+(117)	2021/02/22	0.00055 U, EDL=0.00055		ng/g	
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/22	0.00055 U, EDL=0.00055		ng/g	
			PentaCB-(88)+(91)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'346'-PentaCB-(89)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			PentaCB-(90)+(101)+(113)	2021/02/22	0.00110 J, EDL=0.00057		ng/g	
			22'355'-PentaCB-(92)	2021/02/22	0.00066 U, EDL=0.00066		ng/g	
			PentaCB-(93)+(98)+(100)+(102)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'356'-PentaCB-(94)	2021/02/22	0.00071 U, EDL=0.00071		ng/g	
			22'35'6-PentaCB-(95)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'366'-PentaCB-(96)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			22'45'6-PentaCB-(103)	2021/02/22	0.00060 U, EDL=0.00060		ng/g	
			22'466'-PentaCB-(104)	2021/02/22	0.000099 U, EDL=0.000099		ng/g	
			233'44'-PentaCB-(105)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			233'45-PentaCB-(106)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'4'5-PentaCB-(107)	2021/02/22	0.00059 U, EDL=0.00059		ng/g	
			PentaCB-(108)+(124)	2021/02/22	0.00055 U, EDL=0.00055		ng/g	
			PentaCB-(110)+(115)	2021/02/22	0.00109 J, EDL=0.00049		ng/g	
			233'55'-PentaCB-(111)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			233'56-PentaCB-(112)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			2344'5-PentaCB-(114)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			23'44'5-PentaCB-(118)	2021/02/22	0.00129, EDL=0.00066		ng/g	
			23'455'-PentaCB-(120)	2021/02/22	0.00047 U, EDL=0.00047		ng/g	
			23'45'6-PentaCB-(121)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			233'4'5'-PentaCB-(122)	2021/02/22	0.00061 U, EDL=0.00061		ng/g	
			23'44'5'-PentaCB-(123)	2021/02/22	0.00070 U, EDL=0.00070		ng/g	
			33'44'5-PentaCB-(126)	2021/02/22	0.00062 U, EDL=0.00062		ng/g	
			33'455'-PentaCB-(127)	2021/02/22	0.00051 U, EDL=0.00051		ng/g	
			HexaCB-(128)+(166)	2021/02/22	0.00051 U, EDL=0.00051		ng/g	
			HexaCB-(129)+(138)+(163)	2021/02/22	0.00260 J, EDL=0.00054		ng/g	
			22'33'45'-HexaCB-(130)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'33'46-HexaCB-(131)	2021/02/22	0.00076 U, EDL=0.00076		ng/g	
			22'33'46'-HexaCB-(132)	2021/02/22	0.00067 U, EDL=0.00067		ng/g	
			22'33'55'-HexaCB-(133)	2021/02/22	0.00064 U, EDL=0.00064		ng/g	
			HexaCB-(134)+(143)	2021/02/22	0.00066 U, EDL=0.00066		ng/g	
			HexaCB-(135)+(151)	2021/02/22	0.00097 U, EDL=0.00097		ng/g	
			22'33'66'-HexaCB-(136)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			22'344'5-HexaCB-(137)	2021/02/22	0.00067 U, EDL=0.00067		ng/g	
			HexaCB-(139)+(140)	2021/02/22	0.00057 U, EDL=0.00057		ng/g	
			22'3455'-HexaCB-(141)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			22'3456-HexaCB-(142)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'345'6-HexaCB-(144)	2021/02/22	0.0010 U, EDL=0.0010		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'3466'-HexaCB-(145)	2021/02/22	0.00073 U, EDL=0.00073		ng/g	
			22'34'55'-HexaCB-(146)	2021/02/22	0.00047 U, EDL=0.00047		ng/g	
			HexaCB-(147)+(149)	2021/02/22	0.00198 J, EDL=0.00057		ng/g	
			22'34'56'-HexaCB-(148)	2021/02/22	0.00096 U, EDL=0.00096		ng/g	
			22'34'66'-HexaCB-(150)	2021/02/22	0.00071 U, EDL=0.00071		ng/g	
			22'3566'-HexaCB-(152)	2021/02/22	0.00068 U, EDL=0.00068		ng/g	
			HexaCB-(153)+(168)	2021/02/22	0.00242 J, EDL=0.00046		ng/g	
			22'44'56'-HexaCB-(154)	2021/02/22	0.00086 U, EDL=0.00086		ng/g	
			22'44'66'-HexaCB-(155)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			HexaCB-(156)+(157)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			233'44'6-HexaCB-(158)	2021/02/22	0.00040 U, EDL=0.00040		ng/g	
			233'455'-HexaCB-(159)	2021/02/22	0.00043 U, EDL=0.00043		ng/g	
			233'456-HexaCB-(160)	2021/02/22	0.00044 U, EDL=0.00044		ng/g	
			233'45'6-HexaCB-(161)	2021/02/22	0.00041 U, EDL=0.00041		ng/g	
			233'4'55'-HexaCB-(162)	2021/02/22	0.00043 U, EDL=0.00043		ng/g	
			233'4'5'6-HexaCB-(164)	2021/02/22	0.00040 U, EDL=0.00040		ng/g	
			233'55'6-HexaCB-(165)	2021/02/22	0.00043 U, EDL=0.00043		ng/g	
			23'44'55'-HexaCB-(167)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			33'44'55'-HexaCB-(169)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			22'33'44'5-HeptaCB-(170)	2021/02/22	0.00140 J, EDL=0.00063		ng/g	
			HeptaCB-(171)+(173)	2021/02/22	0.00074 U, EDL=0.00074		ng/g	
			22'33'455'-HeptaCB-(172)	2021/02/22	0.00077 U, EDL=0.00077		ng/g	
			22'33'456'-HeptaCB-(174)	2021/02/22	0.00140 J, EDL=0.00066		ng/g	
			22'33'45'6-HeptaCB-(175)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			22'33'466'-HeptaCB-(176)	2021/02/22	0.00036 U, EDL=0.00036		ng/g	
			22'33'45'6'-HeptaCB-(177)	2021/02/22	0.00076 U, EDL=0.00076		ng/g	
			22'33'55'6-HeptaCB-(178)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'566'-HeptaCB-(179)	2021/02/22	0.00057 J, EDL=0.00043		ng/g	
			HeptaCB-(180)+(193)	2021/02/22	0.00333 J, EDL=0.00062		ng/g	
			22'344'56-HeptaCB-(181)	2021/02/22	0.00073 U, EDL=0.00073		ng/g	
			22'344'56'-HeptaCB-(182)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			22'344'5'6-HeptaCB-(183)	2021/02/22	0.00084 J, EDL=0.00073		ng/g	
			22'344'66'-HeptaCB-(184)	2021/02/22	0.00035 U, EDL=0.00035		ng/g	
			22'3455'6-HeptaCB-(185)	2021/02/22	0.00070 U, EDL=0.00070		ng/g	
			22'34566'-HeptaCB-(186)	2021/02/22	0.00038 U, EDL=0.00038		ng/g	
			22'34'55'6-HeptaCB-(187)	2021/02/22	0.00143 J, EDL=0.00048		ng/g	
			22'34'566'-HeptaCB-(188)	2021/02/22	0.00037 U, EDL=0.00037		ng/g	
			233'44'55'-HeptaCB-(189)	2021/02/22	0.00039 U, EDL=0.00039		ng/g	
			233'44'56-HeptaCB-(190)	2021/02/22	0.00059 U, EDL=0.00059		ng/g	
			233'44'5'6-HeptaCB-(191)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			233'455'6-HeptaCB-(192)	2021/02/22	0.00062 U, EDL=0.00062		ng/g	
			22'33'44'55'-OctaCB-(194)	2021/02/22	0.00080 U, EDL=0.00080		ng/g	
			22'33'44'56-OctaCB-(195)	2021/02/22	0.00084 U, EDL=0.00084		ng/g	
			22'33'44'56'-OctaCB-(196)	2021/02/22	0.00071 U, EDL=0.00071		ng/g	
			22'33'44'66'OctaCB-(197)	2021/02/22	0.00060 U, EDL=0.00060		ng/g	
			OctaCB-(198)+(199)	2021/02/22	0.00101 J, EDL=0.00071		ng/g	
			22'33'4566'-OctaCB-(200)	2021/02/22	0.00041 U, EDL=0.00041		ng/g	
			22'33'45'66'-OctaCB-(201)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			22'33'55'66'-OctaCB-(202)	2021/02/22	0.00046 U, EDL=0.00046		ng/g	
			22'344'55'6-OctaCB-(203)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'344'566'-OctaCB-(204)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			233'44'55'6-OctaCB-(205)	2021/02/22	0.00084 U, EDL=0.00084		ng/g	
			22'33'44'55'6-NonaCB-(206)	2021/02/22	0.00038 U, EDL=0.00038		ng/g	
			22'33'44'566'-NonaCB-(207)	2021/02/22	0.00033 U, EDL=0.00033		ng/g	

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'455'66'-NonaCB-(208)	2021/02/22	0.00040 U, EDL=0.00040		ng/g	
			DecaCB-(209)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			Total PCB	2021/02/22	0.0355		ng/g	
7213064	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2021/02/18	0.14 U, EDL=0.14		pg/g	
			Confirmation C13-2378 TetraCDF	2021/02/18		48	%	40 - 135
7213064	AGU	RPD - Sample/Sample Dup	Confirmation 2,3,7,8-Tetra CDF	2021/02/18	27		%	100

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Native recovery is outside method criteria, due to matrix effects in the parent sample

(2) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

(3) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(4) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Anastassia Hamanov, Scientific Specialist

Melissa DiGrazia, Operations Manager, HRMS Department

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

22-Jan-21 12:30

Lori Dufour

C120326

URE ENV-1338

SUBCONTRACT ORDER

Apex Laboratories

A0I0826

[redacted] Soil Sampled: [redacted] (A0I0826-16)

Analysis	Due	Expires	Comments
[redacted]	[redacted]	[redacted]	[redacted]

Containers Supplied
(C)8 oz Glass Jar

Sample Name: T4RB-1U Soil Sampled: **09/29/20 13:20** (A0I0826-17)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	02/19/21 17:00	03/28/21 13:20	BV Mercury – Level 4 Data package
1668C PCB Congeners (SUB)	02/19/21 17:00	10/13/20 13:20	BV Mercury– 1668C method Level 4 Data Package
Dry Weight	02/19/21 17:00	03/28/21 13:20	BV labs

Containers Supplied
(C)8 oz Glass Jar

dt 1/21/21 STANDARD TAT

(D) 4oz Glass Jar

[redacted] Soil [redacted] (A0I0826-18)

Analysis	Due	Expires	Comments
[redacted]	[redacted]	[redacted]	[redacted]

Containers Supplied
(C)8 oz Glass Jar

Relinquished By: [signature] Date: 1-21-21 Received By: Fed Ex (Shipper) Date: 1-21-21 1:37

Relinquished By: Fed Ex (Shipper) Date: Received By: ALEXANDER FOUR Date: 24/01/22 1/21/21 12:30

Page 2 of 2 dt

Apex Laboratories, LLC

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

Tuesday, November 17, 2020

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0J0123 - POP --- T4 Riverbank - 2372-08 Task 3

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 A0J0123, which was received by the laboratory on 10/2/2020 at 3:26:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	5.0 degC	Cooler #2	0.8 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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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T4RB-2L	A0J0123-01	Soil	09/30/20 09:45	10/02/20 15:26
T4RB-2U	A0J0123-02	Soil	09/30/20 10:15	10/02/20 15:26
T4RB-3L	A0J0123-03	Soil	09/30/20 10:45	10/02/20 15:26
T4RB-3U	A0J0123-04	Soil	09/30/20 11:20	10/02/20 15:26
T4RB-4L	A0J0123-05	Soil	09/30/20 12:20	10/02/20 15:26
T4RB-4U-OR	A0J0123-06	Soil	09/30/20 12:50	10/02/20 15:26
DUP-2	A0J0123-08	Soil	09/30/20 00:00	10/02/20 15:26
T4RB-5L	A0J0123-09	Soil	10/01/20 09:50	10/02/20 15:26
T4RB-5U	A0J0123-10	Soil	10/01/20 10:25	10/02/20 15:26
T4RB-6U	A0J0123-11	Soil	10/01/20 11:20	10/02/20 15:26
T4RB-7L	A0J0123-12	Soil	10/01/20 12:15	10/02/20 15:26
T4RB-7U	A0J0123-13	Soil	10/01/20 13:05	10/02/20 15:26
T4RB-8L	A0J0123-14	Soil	10/01/20 14:05	10/02/20 15:26
T4RB-8U	A0J0123-15	Soil	10/01/20 14:35	10/02/20 15:26
T4RB-9L	A0J0123-16	Soil	10/02/20 09:50	10/02/20 15:26
T4RB-9U	A0J0123-17	Soil	10/02/20 10:25	10/02/20 15:26
T4RB-10L	A0J0123-18	Soil	10/02/20 11:05	10/02/20 15:26
T4RB-10U	A0J0123-19	Soil	10/02/20 11:25	10/02/20 15:26
T4RB-11L	A0J0123-20	Soil	10/02/20 12:00	10/02/20 15:26
T4RB-11U	A0J0123-21	Soil	10/02/20 12:25	10/02/20 15:26
DUP-3	A0J0123-22	Soil	10/02/20 00:00	10/02/20 15:26
Trip Blank	A0J0123-23	Water	09/30/20 00:00	10/02/20 15:26

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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
T4RB-2L (A0J0123-01)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	13.1	26.2	mg/kg dry	1	10/08/20 15:54	NWTPH-Dx	
Oil	**51.4**	26.2	52.4	mg/kg dry	1	10/08/20 15:54	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 91 %*	*Limits: 50-150 %*		*1*	*10/08/20 15:54*	*NWTPH-Dx*	
T4RB-2U (A0J0123-02)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	10.3	25.0	mg/kg dry	1	10/08/20 14:53	NWTPH-Dx	
Oil	ND	20.5	50.0	mg/kg dry	1	10/08/20 14:53	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*	*Limits: 50-150 %*		*1*	*10/08/20 14:53*	*NWTPH-Dx*	
T4RB-3L (A0J0123-03)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	11.6	25.0	mg/kg dry	1	10/08/20 16:55	NWTPH-Dx	
Oil	ND	23.2	50.0	mg/kg dry	1	10/08/20 16:55	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 96 %*	*Limits: 50-150 %*		*1*	*10/08/20 16:55*	*NWTPH-Dx*	
T4RB-3U (A0J0123-04)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	10.7	25.0	mg/kg dry	1	10/08/20 15:13	NWTPH-Dx	
Oil	ND	21.4	50.0	mg/kg dry	1	10/08/20 15:13	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*	*Limits: 50-150 %*		*1*	*10/08/20 15:13*	*NWTPH-Dx*	
T4RB-4L (A0J0123-05)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	12.7	25.4	mg/kg dry	1	10/08/20 17:15	NWTPH-Dx	
Oil	**49.8**	25.4	50.7	mg/kg dry	1	10/08/20 17:15	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 90 %*	*Limits: 50-150 %*		*1*	*10/08/20 17:15*	*NWTPH-Dx*	
T4RB-4U-OR (A0J0123-06)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	10.2	25.0	mg/kg dry	1	10/08/20 17:35	NWTPH-Dx	
Oil	ND	20.3	50.0	mg/kg dry	1	10/08/20 17:35	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 97 %*	*Limits: 50-150 %*		*1*	*10/08/20 17:35*	*NWTPH-Dx*	
DUP-2 (A0J0123-08)				**Matrix: Soil**		**Batch: 0100257**		
Diesel	ND	10.3	25.0	mg/kg dry	1	10/08/20 15:33	NWTPH-Dx	
Oil	ND	20.5	50.0	mg/kg dry	1	10/08/20 15:33	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*1*	*10/08/20 15:33*	*NWTPH-Dx*	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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
T4RB-5L (A0J0123-09)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	11.0	25.0	mg/kg dry	1	10/08/20 23:18	NWTPH-Dx	
Oil	**126**	22.0	50.0	mg/kg dry	1	10/08/20 23:18	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 99 %*		*Limits: 50-150 %*	*1*	*10/08/20 23:18*	*NWTPH-Dx*	
T4RB-5U (A0J0123-10RE1)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	11.0	25.0	mg/kg dry	1	10/09/20 07:29	NWTPH-Dx	
Oil	**182**	22.0	50.0	mg/kg dry	1	10/09/20 07:29	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*10/09/20 07:29*	*NWTPH-Dx*	
T4RB-6U (A0J0123-11)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.5	25.0	mg/kg dry	1	10/09/20 00:40	NWTPH-Dx	
Oil	ND	20.9	50.0	mg/kg dry	1	10/09/20 00:40	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*	*1*	*10/09/20 00:40*	*NWTPH-Dx*	
T4RB-7L (A0J0123-12)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	12.3	25.0	mg/kg dry	1	10/09/20 01:01	NWTPH-Dx	
Oil	**124**	24.6	50.0	mg/kg dry	1	10/09/20 01:01	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*10/09/20 01:01*	*NWTPH-Dx*	
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.2	25.0	mg/kg dry	1	10/09/20 01:42	NWTPH-Dx	
Oil	ND	20.4	50.0	mg/kg dry	1	10/09/20 01:42	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*10/09/20 01:42*	*NWTPH-Dx*	
T4RB-8L (A0J0123-14)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	12.5	25.0	mg/kg dry	1	10/09/20 02:02	NWTPH-Dx	
Oil	**173**	25.0	50.0	mg/kg dry	1	10/09/20 02:02	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 93 %*		*Limits: 50-150 %*	*1*	*10/09/20 02:02*	*NWTPH-Dx*	
T4RB-8U (A0J0123-15)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.1	25.0	mg/kg dry	1	10/09/20 02:23	NWTPH-Dx	
Oil	**72.9**	20.3	50.0	mg/kg dry	1	10/09/20 02:23	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 103 %*		*Limits: 50-150 %*	*1*	*10/09/20 02:23*	*NWTPH-Dx*	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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Tigard, OR 97223
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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
T4RB-9L (A0J0123-16)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	11.3	25.0	mg/kg dry	1	10/09/20 02:43	NWTPH-Dx	
Oil	**45.4**	22.6	50.0	mg/kg dry	1	10/09/20 02:43	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*10/09/20 02:43*	*NWTPH-Dx*	
T4RB-9U (A0J0123-17)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.7	25.0	mg/kg dry	1	10/09/20 03:04	NWTPH-Dx	
Oil	**51.2**	21.3	50.0	mg/kg dry	1	10/09/20 03:04	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*10/09/20 03:04*	*NWTPH-Dx*	
T4RB-10L (A0J0123-18)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.4	25.0	mg/kg dry	1	10/09/20 03:24	NWTPH-Dx	
Oil	**28.7**	20.7	50.0	mg/kg dry	1	10/09/20 03:24	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*10/09/20 03:24*	*NWTPH-Dx*	
T4RB-10U (A0J0123-19)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.4	25.0	mg/kg dry	1	10/09/20 03:45	NWTPH-Dx	
Oil	**150**	20.8	50.0	mg/kg dry	1	10/09/20 03:45	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*	*1*	*10/09/20 03:45*	*NWTPH-Dx*	
T4RB-11L (A0J0123-20RE1)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.0	25.0	mg/kg dry	1	10/09/20 08:10	NWTPH-Dx	
Oil	**200**	20.1	50.0	mg/kg dry	1	10/09/20 08:10	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*10/09/20 08:10*	*NWTPH-Dx*	
T4RB-11U (A0J0123-21)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	10.4	25.0	mg/kg dry	1	10/08/20 23:18	NWTPH-Dx	
Oil	**68.2**	20.7	50.0	mg/kg dry	1	10/08/20 23:18	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*		*Limits: 50-150 %*	*1*	*10/08/20 23:18*	*NWTPH-Dx*	
DUP-3 (A0J0123-22)				**Matrix: Soil**		**Batch: 0100286**		
Diesel	ND	11.3	25.0	mg/kg dry	1	10/08/20 23:38	NWTPH-Dx	
Oil	**39.7**	22.7	50.0	mg/kg dry	1	10/08/20 23:38	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*		*Limits: 50-150 %*	*1*	*10/08/20 23:38*	*NWTPH-Dx*	

Apex Laboratories



Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-3L (A0J0123-03)				**Matrix: Soil**		**Batch: 0100430**		
Chlorobenzene	ND	15.5	30.9	ug/kg dry	50	10/13/20 20:56	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*10/13/20 20:56*	*5035A/8260D*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*10/13/20 20:56*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*	*1*	*10/13/20 20:56*	*5035A/8260D*	
T4RB-5U (A0J0123-10)				**Matrix: Soil**		**Batch: 0100430**		
Chlorobenzene	ND	16.0	32.0	ug/kg dry	50	10/13/20 21:23	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/13/20 21:23*	*5035A/8260D*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*10/13/20 21:23*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*	*1*	*10/13/20 21:23*	*5035A/8260D*	
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: 0100430**		
Chlorobenzene	ND	14.5	29.0	ug/kg dry	50	10/13/20 21:51	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*10/13/20 21:51*	*5035A/8260D*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*10/13/20 21:51*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*	*1*	*10/13/20 21:51*	*5035A/8260D*	
T4RB-9L (A0J0123-16)				**Matrix: Soil**		**Batch: 0100430**		
Chlorobenzene	ND	22.1	44.2	ug/kg dry	50	10/13/20 22:18	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*98 %*	*Limits: 80-120 %*	*1*	*10/13/20 22:18*	*5035A/8260D*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*10/13/20 22:18*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/13/20 22:18*	*5035A/8260D*	
DUP-3 (A0J0123-22)				**Matrix: Soil**		**Batch: 0100430**		
Chlorobenzene	ND	27.8	55.5	ug/kg dry	50	10/13/20 22:45	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits: 80-120 %*	*1*	*10/13/20 22:45*	*5035A/8260D*	
Toluene-d8 (Surr)			*98 %*	*80-120 %*	*1*	*10/13/20 22:45*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/13/20 22:45*	*5035A/8260D*	
Trip Blank (A0J0123-23)				**Matrix: Water**		**Batch: 0100356**		
Chlorobenzene	ND	0.250	0.500	ug/L	1	10/10/20 14:56	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*112 %*	*Limits: 80-120 %*	*1*	*10/10/20 14:56*	*EPA 8260D*	
Toluene-d8 (Surr)			*103 %*	*80-120 %*	*1*	*10/10/20 14:56*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*108 %*	*80-120 %*	*1*	*10/10/20 14:56*	*EPA 8260D*	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-2L (A0J0123-01)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1221	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1232	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1242	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1248	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1254	**19.2**	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	**P-12**
Aroclor 1260	**23.4**	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	**P-12**
Aroclor 1262	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1268	ND	2.68	5.36	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 96 %*		*Limits: 60-125 %*	*1*	*10/14/20 15:34*	*EPA 8082A*	
T4RB-2U (A0J0123-02)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1221	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1232	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1242	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1248	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1254	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1260	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1262	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1268	ND	2.08	4.15	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 96 %*		*Limits: 60-125 %*	*1*	*10/14/20 17:55*	*EPA 8082A*	
T4RB-3L (A0J0123-03)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1221	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1232	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1242	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1248	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1254	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1260	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1262	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1268	ND	2.36	4.71	ug/kg dry	1	10/14/20 18:30	EPA 8082A	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-3L (A0J0123-03)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 102 %*	*Limits: 60-125 %*		*1*	*10/14/20 18:30*	*EPA 8082A*	
T4RB-3U (A0J0123-04)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1221	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1232	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1242	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1248	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1254	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1260	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1262	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Aroclor 1268	ND	2.14	4.28	ug/kg dry	1	10/14/20 14:59	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 82 %*	*Limits: 60-125 %*		*1*	*10/14/20 14:59*	*EPA 8082A*	
T4RB-4L (A0J0123-05)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1221	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1232	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1242	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1248	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1254	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1260	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1262	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Aroclor 1268	ND	2.51	5.03	ug/kg dry	1	10/14/20 15:34	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*	*Limits: 60-125 %*		*1*	*10/14/20 15:34*	*EPA 8082A*	
T4RB-4U-OR (A0J0123-06)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1221	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1232	ND	4.09	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1242	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1248	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1254	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1260	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-4U-OR (A0J0123-06)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1262	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Aroclor 1268	ND	2.04	4.09	ug/kg dry	1	10/14/20 16:09	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*	*Limits: 60-125 %*		*1*	*10/14/20 16:09*	*EPA 8082A*	
DUP-2 (A0J0123-08)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1221	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1232	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1242	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1248	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1254	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1260	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1262	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1268	ND	2.15	4.30	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 77 %*	*Limits: 60-125 %*		*1*	*10/14/20 16:44*	*EPA 8082A*	
T4RB-5L (A0J0123-09)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Aroclor 1221	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Aroclor 1232	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Aroclor 1242	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Aroclor 1248	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Aroclor 1254	**7.21**	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	**P-12**
Aroclor 1260	**7.60**	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	**P-12**
Aroclor 1262	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Aroclor 1268	ND	2.17	4.34	ug/kg dry	1	10/14/20 17:19	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 76 %*	*Limits: 60-125 %*		*1*	*10/14/20 17:19*	*EPA 8082A*	
T4RB-5U (A0J0123-10)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	4.40	4.40	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1221	ND	2.20	4.40	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1232	ND	5.17	5.17	ug/kg dry	1	10/14/20 17:55	EPA 8082A	R-02
Aroclor 1242	ND	6.05	6.05	ug/kg dry	1	10/14/20 17:55	EPA 8082A	R-02

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-5U (A0J0123-10)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1248	ND	6.16	6.16	ug/kg dry	1	10/14/20 17:55	EPA 8082A	R-02
Aroclor 1254	ND	34.5	34.5	ug/kg dry	1	10/14/20 17:55	EPA 8082A	R-02
Aroclor 1260	**10.4**	2.20	4.40	ug/kg dry	1	10/14/20 17:55	EPA 8082A	**P-09**
Aroclor 1262	ND	2.20	4.40	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Aroclor 1268	ND	2.20	4.40	ug/kg dry	1	10/14/20 17:55	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 71 %*		*Limits: 60-125 %*	*1*	*10/14/20 17:55*	*EPA 8082A*	
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1221	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1232	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1242	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1248	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1254	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1260	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1262	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Aroclor 1268	ND	2.12	4.25	ug/kg dry	1	10/14/20 18:30	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 77 %*		*Limits: 60-125 %*	*1*	*10/14/20 18:30*	*EPA 8082A*	
T4RB-9L (A0J0123-16)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1221	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1232	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1242	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1248	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1254	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1260	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1262	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Aroclor 1268	ND	2.38	4.75	ug/kg dry	1	10/14/20 19:05	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 60-125 %*	*1*	*10/14/20 19:05*	*EPA 8082A*	
DUP-3 (A0J0123-22)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1016	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-3 (A0J0123-22)				**Matrix: Soil**		**Batch: 0100443**		**C-07**
Aroclor 1221	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1232	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1242	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1248	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1254	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1260	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1262	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Aroclor 1268	ND	2.30	4.61	ug/kg dry	1	10/14/20 16:44	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 92 %*		*Limits: 60-125 %*	*1*	*10/14/20 16:44*	*EPA 8082A*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-3L (A0J0123-03RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
gamma-BHC (Lindane)	ND	2.46	2.46	ug/kg dry	1	10/19/20 15:04	EPA 8081B	R-02
cis-Chlordane	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
trans-Chlordane	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
4,4'-DDD	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
4,4'-DDE	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
4,4'-DDT	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Dieldrin	**3.46**	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Endosulfan I	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Endosulfan II	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Endosulfan sulfate	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Chlordane (Technical)	ND	33.6	67.2	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
cis-Nonachlor	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
2,4'-DDD	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
2,4'-DDE	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
2,4'-DDT	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Oxychlordane	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
trans-Nonachlor	ND	1.12	2.24	ug/kg dry	1	10/19/20 15:04	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*45 %*	*Limits: 42-129 %*	*1*	*10/19/20 15:04*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*100 %*	*55-130 %*	*1*	*10/19/20 15:04*	*EPA 8081B*	
T4RB-5U (A0J0123-10RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
gamma-BHC (Lindane)	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
cis-Chlordane	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
trans-Chlordane	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
4,4'-DDD	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
4,4'-DDE	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
4,4'-DDT	**7.33**	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	**P-11**
Dieldrin	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
Endosulfan I	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
Endosulfan II	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
Endosulfan sulfate	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-5U (A0J0123-10RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Chlordane (Technical)	ND	65.4	131	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
cis-Nonachlor	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
2,4'-DDD	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
2,4'-DDE	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
2,4'-DDT	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
Oxychlordane	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
trans-Nonachlor	ND	2.18	4.36	ug/kg dry	1	10/19/20 15:22	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*32 %*	*Limits: 42-129 %*	*1*	*10/19/20 15:22*	*EPA 8081B*	*S-04*
Decachlorobiphenyl (Surr)			*121 %*	*55-130 %*	*1*	*10/19/20 15:22*	*EPA 8081B*	
T4RB-7U (A0J0123-13RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
gamma-BHC (Lindane)	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
cis-Chlordane	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
trans-Chlordane	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
4,4'-DDD	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
4,4'-DDE	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
4,4'-DDT	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Dieldrin	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Endosulfan I	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Endosulfan II	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Endosulfan sulfate	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Chlordane (Technical)	ND	31.1	62.2	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
cis-Nonachlor	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
2,4'-DDD	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
2,4'-DDE	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
2,4'-DDT	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Oxychlordane	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
trans-Nonachlor	ND	1.04	2.07	ug/kg dry	1	10/19/20 15:39	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*30 %*	*Limits: 42-129 %*	*1*	*10/19/20 15:39*	*EPA 8081B*	*S-04*
Decachlorobiphenyl (Surr)			*101 %*	*55-130 %*	*1*	*10/19/20 15:39*	*EPA 8081B*	
T4RB-9L (A0J0123-16RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-9L (A0J0123-16RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
gamma-BHC (Lindane)	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
cis-Chlordane	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
trans-Chlordane	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
4,4'-DDD	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
4,4'-DDE	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
4,4'-DDT	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Dieldrin	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Endosulfan I	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Endosulfan II	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Endosulfan sulfate	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Chlordane (Technical)	ND	34.7	69.5	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
cis-Nonachlor	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
2,4'-DDD	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
2,4'-DDE	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
2,4'-DDT	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Oxychlordane	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
trans-Nonachlor	ND	1.16	2.32	ug/kg dry	1	10/19/20 15:56	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*37 %*	*Limits: 42-129 %*	*1*	*10/19/20 15:56*	*EPA 8081B*	*S-04*
Decachlorobiphenyl (Surr)			*100 %*	*55-130 %*	*1*	*10/19/20 15:56*	*EPA 8081B*	
DUP-3 (A0J0123-22RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
gamma-BHC (Lindane)	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
cis-Chlordane	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
trans-Chlordane	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
4,4'-DDD	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
4,4'-DDE	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
4,4'-DDT	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Dieldrin	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Endosulfan I	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Endosulfan II	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Endosulfan sulfate	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Chlordane (Technical)	ND	33.8	67.6	ug/kg dry	1	10/19/20 16:13	EPA 8081B	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-3 (A0J0123-22RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
cis-Nonachlor	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
2,4'-DDD	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
2,4'-DDE	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
2,4'-DDT	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Oxychlordane	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
trans-Nonachlor	ND	1.13	2.25	ug/kg dry	1	10/19/20 16:13	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*29 %*	*Limits: 42-129 %*	*1*	*10/19/20 16:13*	*EPA 8081B*	*S-04*
Decachlorobiphenyl (Surr)			*108 %*	*55-130 %*	*1*	*10/19/20 16:13*	*EPA 8081B*	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-3L (A0J0123-03RE3)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Acenaphthylene	**1.57**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Anthracene	**4.27**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Benz(a)anthracene	**2.27**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Benzo(a)pyrene	**3.22**	2.34	4.68	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Benzo(b)fluoranthene	**4.33**	2.34	4.68	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Benzo(k)fluoranthene	**2.44**	2.34	4.68	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**2.54**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Chrysene	**3.26**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Fluoranthene	**2.70**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Fluorene	ND	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**1.65**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
2-Methylnaphthalene	ND	3.12	6.23	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Naphthalene	ND	3.12	6.23	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Phenanthrene	**1.96**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	**Ja**
Pyrene	**4.29**	1.56	3.12	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	23.4	46.8	ug/kg dry	1	10/15/20 11:49	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*76 %*	*Limits: 37-122 %*	*1*	*10/15/20 11:49*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*77 %*	*44-120 %*	*1*	*10/15/20 11:49*	*EPA 8270E*	
Phenol-d6 (Surr)			*68 %*	*33-122 %*	*1*	*10/15/20 11:49*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*90 %*	*54-127 %*	*1*	*10/15/20 11:49*	*EPA 8270E*	
2-Fluorophenol (Surr)			*76 %*	*35-120 %*	*1*	*10/15/20 11:49*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*87 %*	*39-132 %*	*1*	*10/15/20 11:49*	*EPA 8270E*	
T4RB-5U (A0J0123-10RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Acenaphthylene	ND	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Anthracene	ND	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Benz(a)anthracene	**41.3**	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	**Ja**
Benzo(a)pyrene	**74.5**	44.1	88.2	ug/kg dry	20	10/14/20 17:55	EPA 8270E	**Ja**
Benzo(b)fluoranthene	**105**	44.1	88.2	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Benzo(k)fluoranthene	**49.2**	44.1	88.2	ug/kg dry	20	10/14/20 17:55	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**56.2**	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	**Ja**

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-5U (A0J0123-10RE1)				**Matrix: Soil**		**Batch: 0100353**		
Chrysene	**63.7**	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Dibenz(a,h)anthracene	ND	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Fluoranthene	**56.6**	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	**Ja**
Fluorene	ND	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**40.1**	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	**Ja**
2-Methylnaphthalene	ND	58.9	118	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Naphthalene	ND	58.9	118	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Phenanthrene	ND	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Pyrene	**62.0**	29.3	58.9	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	441	882	ug/kg dry	20	10/14/20 17:55	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*61 %*	*Limits: 37-122 %*	*20*	*10/14/20 17:55*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*74 %*	*44-120 %*	*20*	*10/14/20 17:55*	*EPA 8270E*	
Phenol-d6 (Surr)			*43 %*	*33-122 %*	*20*	*10/14/20 17:55*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*85 %*	*54-127 %*	*20*	*10/14/20 17:55*	*EPA 8270E*	
2-Fluorophenol (Surr)			*53 %*	*35-120 %*	*20*	*10/14/20 17:55*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*79 %*	*39-132 %*	*20*	*10/14/20 17:55*	*EPA 8270E*	
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Acenaphthylene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Anthracene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Benz(a)anthracene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Benzo(a)pyrene	ND	8.44	16.9	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Benzo(b)fluoranthene	ND	8.44	16.9	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Benzo(k)fluoranthene	ND	8.44	16.9	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Benzo(g,h,i)perylene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Chrysene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Dibenz(a,h)anthracene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Fluoranthene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Fluorene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
2-Methylnaphthalene	ND	11.3	22.5	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Naphthalene	ND	11.3	22.5	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Phenanthrene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: 0100353**		
Pyrene	ND	5.61	11.3	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Bis(2-ethylhexyl)phthalate	**235**	84.4	169	ug/kg dry	4	10/13/20 22:21	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*72 %*	*Limits: 37-122 %*	*4*	*10/13/20 22:21*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*69 %*	*44-120 %*	*4*	*10/13/20 22:21*	*EPA 8270E*	
Phenol-d6 (Surr)			*58 %*	*33-122 %*	*4*	*10/13/20 22:21*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*81 %*	*54-127 %*	*4*	*10/13/20 22:21*	*EPA 8270E*	
2-Fluorophenol (Surr)			*67 %*	*35-120 %*	*4*	*10/13/20 22:21*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*66 %*	*39-132 %*	*4*	*10/13/20 22:21*	*EPA 8270E*	
T4RB-9L (A0J0123-16RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Acenaphthylene	ND	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Anthracene	ND	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Benz(a)anthracene	**45.8**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Benzo(a)pyrene	**75.2**	23.5	47.1	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Benzo(b)fluoranthene	**75.4**	23.5	47.1	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Benzo(k)fluoranthene	**37.6**	23.5	47.1	ug/kg dry	10	10/14/20 16:43	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**54.5**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Chrysene	**50.2**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Dibenz(a,h)anthracene	ND	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Fluoranthene	**84.9**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Fluorene	ND	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**42.9**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
2-Methylnaphthalene	**83.3**	31.4	62.8	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Naphthalene	**70.2**	31.4	62.8	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Phenanthrene	**73.4**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Pyrene	**91.8**	15.7	31.4	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Bis(2-ethylhexyl)phthalate	**561**	235	471	ug/kg dry	10	10/14/20 16:43	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*65 %*	*Limits: 37-122 %*	*10*	*10/14/20 16:43*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*73 %*	*44-120 %*	*10*	*10/14/20 16:43*	*EPA 8270E*	
Phenol-d6 (Surr)			*53 %*	*33-122 %*	*10*	*10/14/20 16:43*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*84 %*	*54-127 %*	*10*	*10/14/20 16:43*	*EPA 8270E*	
2-Fluorophenol (Surr)			*59 %*	*35-120 %*	*10*	*10/14/20 16:43*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*85 %*	*39-132 %*	*10*	*10/14/20 16:43*	*EPA 8270E*	

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-3 (A0J0123-22RE1)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Acenaphthylene	ND	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Anthracene	ND	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Benz(a)anthracene	**62.9**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Benzo(a)pyrene	**99.3**	23.6	47.2	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Benzo(b)fluoranthene	**97.9**	23.6	47.2	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Benzo(k)fluoranthene	**43.7**	23.6	47.2	ug/kg dry	10	10/14/20 17:19	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**78.0**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Chrysene	**59.4**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Dibenz(a,h)anthracene	ND	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Fluoranthene	**109**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Fluorene	ND	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**65.5**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
2-Methylnaphthalene	ND	31.5	62.9	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Naphthalene	ND	31.5	62.9	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Phenanthrene	**39.0**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Pyrene	**119**	15.7	31.5	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	236	472	ug/kg dry	10	10/14/20 17:19	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*55 %*	*Limits: 37-122 %*	*10*	*10/14/20 17:19*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*66 %*	*44-120 %*	*10*	*10/14/20 17:19*	*EPA 8270E*	
Phenol-d6 (Surr)			*44 %*	*33-122 %*	*10*	*10/14/20 17:19*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*82 %*	*54-127 %*	*10*	*10/14/20 17:19*	*EPA 8270E*	
2-Fluorophenol (Surr)			*55 %*	*35-120 %*	*10*	*10/14/20 17:19*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*76 %*	*39-132 %*	*10*	*10/14/20 17:19*	*EPA 8270E*	

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-3L (A0J0123-03)				**Matrix: Soil**				
Batch: 0100304								
Arsenic	**2.93**	0.658	1.32	mg/kg dry	10	10/13/20 15:49	EPA 6020A	
Cadmium	ND	0.132	0.263	mg/kg dry	10	10/13/20 15:49	EPA 6020A	
Copper	**11.8**	1.32	2.63	mg/kg dry	10	10/13/20 15:49	EPA 6020A	
Lead	**6.86**	0.132	0.263	mg/kg dry	10	10/13/20 15:49	EPA 6020A	
Mercury	ND	0.0527	0.105	mg/kg dry	10	10/13/20 15:49	EPA 6020A	
Zinc	**46.9**	2.63	5.27	mg/kg dry	10	10/13/20 15:49	EPA 6020A	
T4RB-5U (A0J0123-10)				**Matrix: Soil**				
Batch: 0100304								
Arsenic	**2.61**	0.625	1.25	mg/kg dry	10	10/13/20 15:54	EPA 6020A	
Cadmium	**0.486**	0.125	0.250	mg/kg dry	10	10/13/20 15:54	EPA 6020A	
Copper	**30.2**	1.25	2.50	mg/kg dry	10	10/13/20 15:54	EPA 6020A	
Lead	**61.1**	0.125	0.250	mg/kg dry	10	10/13/20 15:54	EPA 6020A	
Mercury	**0.113**	0.0500	0.100	mg/kg dry	10	10/13/20 15:54	EPA 6020A	
Zinc	**162**	2.50	5.00	mg/kg dry	10	10/13/20 15:54	EPA 6020A	
T4RB-7U (A0J0123-13)				**Matrix: Soil**				
Batch: 0100304								
Arsenic	**3.02**	0.593	1.19	mg/kg dry	10	10/13/20 16:14	EPA 6020A	
Cadmium	ND	0.119	0.237	mg/kg dry	10	10/13/20 16:14	EPA 6020A	
Copper	**13.0**	1.19	2.37	mg/kg dry	10	10/13/20 16:14	EPA 6020A	
Lead	**2.52**	0.119	0.237	mg/kg dry	10	10/13/20 16:14	EPA 6020A	
Mercury	ND	0.0474	0.0949	mg/kg dry	10	10/13/20 16:14	EPA 6020A	
Zinc	**38.5**	2.37	4.74	mg/kg dry	10	10/13/20 16:14	EPA 6020A	
T4RB-9L (A0J0123-16)				**Matrix: Soil**				
Batch: 0100304								
Arsenic	**3.58**	0.617	1.23	mg/kg dry	10	10/13/20 16:19	EPA 6020A	
Cadmium	ND	0.123	0.247	mg/kg dry	10	10/13/20 16:19	EPA 6020A	
Lead	**9.25**	0.123	0.247	mg/kg dry	10	10/13/20 16:19	EPA 6020A	
Mercury	ND	0.0494	0.0987	mg/kg dry	10	10/13/20 16:19	EPA 6020A	
Zinc	**50.6**	2.47	4.94	mg/kg dry	10	10/13/20 16:19	EPA 6020A	

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-9L (A0J0123-16RE1)				**Matrix: Soil**				
Batch: 0100304								
Copper	**16200**	24.7	49.4	mg/kg dry	200	10/14/20 18:31	EPA 6020A	
DUP-3 (A0J0123-22)				**Matrix: Soil**				
Batch: 0100304								
Arsenic	**2.94**	0.661	1.32	mg/kg dry	10	10/13/20 16:24	EPA 6020A	
Cadmium	ND	0.132	0.264	mg/kg dry	10	10/13/20 16:24	EPA 6020A	
Copper	**18.5**	1.32	2.64	mg/kg dry	10	10/13/20 16:24	EPA 6020A	
Lead	**6.66**	0.132	0.264	mg/kg dry	10	10/13/20 16:24	EPA 6020A	
Mercury	ND	0.0529	0.106	mg/kg dry	10	10/13/20 16:24	EPA 6020A	
Zinc	**47.2**	2.64	5.29	mg/kg dry	10	10/13/20 16:24	EPA 6020A	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-2L (A0J0123-01)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**74.5**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-2U (A0J0123-02)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**93.2**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-3L (A0J0123-03)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**84.4**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-3U (A0J0123-04)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**92.2**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-4L (A0J0123-05)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**78.3**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-4U-OR (A0J0123-06)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**95.2**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
DUP-2 (A0J0123-08)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**92.2**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-5L (A0J0123-09)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**88.5**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-5U (A0J0123-10)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**88.5**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-6U (A0J0123-11)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**92.6**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-7L (A0J0123-12)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**75.4**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**93.5**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-8L (A0J0123-14)				**Matrix: Soil**		**Batch: 0100156**		

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-8L (A0J0123-14)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**75.7**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-8U (A0J0123-15)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**95.3**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-9L (A0J0123-16)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**83.9**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-9U (A0J0123-17)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**90.9**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-10L (A0J0123-18)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**94.4**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-10U (A0J0123-19)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**92.2**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-11L (A0J0123-20)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**92.1**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
T4RB-11U (A0J0123-21)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**92.5**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	
DUP-3 (A0J0123-22)				**Matrix: Soil**		**Batch: 0100156**		
% Solids	**83.5**	---	1.00	%	1	10/07/20 07:58	EPA 8000D	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Butyl Tins

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-3L (A0J0123-03)				**Matrix: Soil**		**Batch: BIJ0400**		
Batch: BIJ0400								
Tributyltin Ion	ND	0.450	3.86	ug/kg dry	1	10/20/20 17:41	EPA 8270E-SIM	U
Batch: BIJ0400								
Surrogate: Tripentyltin		*Recovery: 90.1 %*		*Limits: 30-160 %*	*1*	*10/20/20 17:41*	*EPA 8270E-SIM*	
Tripropyltin			*83.3 %*	*30-160 %*	*1*	*10/20/20 17:41*	*EPA 8270E-SIM*	
T4RB-5U (A0J0123-10)				**Matrix: Soil**		**Batch: BIJ0400**		
Batch: BIJ0400								
Tributyltin Ion	ND	0.444	3.81	ug/kg dry	1	10/20/20 17:58	EPA 8270E-SIM	U
Batch: BIJ0400								
Surrogate: Tripentyltin		*Recovery: 57.6 %*		*Limits: 30-160 %*	*1*	*10/20/20 17:58*	*EPA 8270E-SIM*	
Tripropyltin			*54.7 %*	*30-160 %*	*1*	*10/20/20 17:58*	*EPA 8270E-SIM*	
T4RB-7U (A0J0123-13)				**Matrix: Soil**		**Batch: BIJ0400**		
Batch: BIJ0400								
Tributyltin Ion	ND	0.450	3.86	ug/kg dry	1	10/20/20 18:14	EPA 8270E-SIM	U
Batch: BIJ0400								
Surrogate: Tripentyltin		*Recovery: 74.3 %*		*Limits: 30-160 %*	*1*	*10/20/20 18:14*	*EPA 8270E-SIM*	
Tripropyltin			*55.2 %*	*30-160 %*	*1*	*10/20/20 18:14*	*EPA 8270E-SIM*	
T4RB-9L (A0J0123-16)				**Matrix: Soil**		**Batch: BIJ0400**		
Batch: BIJ0400								
Tributyltin Ion	ND	0.446	3.83	ug/kg dry	1	10/20/20 18:31	EPA 8270E-SIM	U
Batch: BIJ0400								
Surrogate: Tripentyltin		*Recovery: 68.9 %*		*Limits: 30-160 %*	*1*	*10/20/20 18:31*	*EPA 8270E-SIM*	
Tripropyltin			*49.9 %*	*30-160 %*	*1*	*10/20/20 18:31*	*EPA 8270E-SIM*	
DUP-3 (A0J0123-22)				**Matrix: Soil**		**Batch: BIJ0400**		
Batch: BIJ0400								
Tributyltin Ion	ND	0.450	3.86	ug/kg dry	1	10/20/20 18:47	EPA 8270E-SIM	U
Batch: BIJ0400								
Surrogate: Tripentyltin		*Recovery: 67.7 %*		*Limits: 30-160 %*	*1*	*10/20/20 18:47*	*EPA 8270E-SIM*	
Tripropyltin			*50.4 %*	*30-160 %*	*1*	*10/20/20 18:47*	*EPA 8270E-SIM*	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100257 - EPA 3546 (Fuels)							Soil					
Blank (0100257-BLK1)			Prepared: 10/08/20 08:17		Analyzed: 10/08/20 14:12							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*							
LCS (0100257-BS1)			Prepared: 10/08/20 08:17		Analyzed: 10/08/20 14:33							
NWTPH-Dx												
Diesel	125	10.0	25.0	mg/kg wet	1	125	---	100	73-115%	---	---	
Surr: o-Terphenyl (Surr)		*Recovery: 103 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (0100257-DUP1)			Prepared: 10/08/20 08:17		Analyzed: 10/08/20 16:14							
QC Source Sample: T4RB-2L (A0J0123-01)												
NWTPH-Dx												
Diesel	ND	13.1	26.2	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**49.3**	26.2	52.4	mg/kg dry	1	---	51.4	---	---	4	30%	Ja
Mineral Oil	ND	26.2	52.4	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 85 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (0100257-DUP2)			Prepared: 10/08/20 08:17		Analyzed: 10/09/20 00:20							
QC Source Sample: Non-SDG (A0J0215-02)												
Diesel	ND	10.3	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	20.7	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	20.7	41.4	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 92 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Batch 0100286 - EPA 3546 (Fuels)							Soil					
Blank (0100286-BLK1)			Prepared: 10/08/20 13:09		Analyzed: 10/08/20 22:37							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100286 - EPA 3546 (Fuels)							**Soil**					
Blank (0100286-BLK1)			Prepared: 10/08/20 13:09 Analyzed: 10/08/20 22:37									
Surr: o-Terphenyl (Surr)			*Recovery: 102 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (0100286-BS1)			Prepared: 10/08/20 13:09 Analyzed: 10/08/20 22:57									
NWTPH-Dx												
Diesel	123	10.0	25.0	mg/kg wet	1	125	---	98	73-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 101 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100286-DUP1)			Prepared: 10/08/20 13:09 Analyzed: 10/08/20 23:38									
QC Source Sample: T4RB-5L (A0J0123-09)												
NWTPH-Dx												
Diesel	ND	11.0	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**129**	22.0	50.0	mg/kg dry	1	---	126	---	---	2	30%	F-03
Mineral Oil	ND	22.0	44.1	mg/kg dry	1	---	70.9	---	---	***	**30%**	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100286-DUP2)			Prepared: 10/08/20 13:09 Analyzed: 10/09/20 02:02									
QC Source Sample: Non-SDG (A0J0241-06)												
Diesel	ND	10.5	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**108**	21.1	50.0	mg/kg dry	1	---	110	---	---	2	30%	
Mineral Oil	ND	21.1	42.2	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 93 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100356 - EPA 5030B							**Water**					
Blank (0100356-BLK1)			Prepared: 10/10/20 13:00		Analyzed: 10/10/20 14:29							
EPA 8260D												
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	EST
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100356 - EPA 5030B							**Water**					
Blank (0100356-BLK1)			Prepared: 10/10/20 13:00		Analyzed: 10/10/20 14:29							
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	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	2.00	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	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 111 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*101 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*109 %*		*80-120 %*		*"*					
LCS (0100356-BS1)			Prepared: 10/10/20 13:00		Analyzed: 10/10/20 13:35							
EPA 8260D												
Bromobenzene	19.4	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
Bromochloromethane	22.6	0.500	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Bromodichloromethane	21.5	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Bromoform	23.3	0.500	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
Bromomethane	27.1	5.00	5.00	ug/L	1	20.0	---	**136**	**80-120%**	---	---	Q-56
Carbon tetrachloride	22.6	0.500	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
Chlorobenzene	19.5	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
Chloroethane	19.4	5.00	5.00	ug/L	1	20.0	---	97	80-120%	---	---	EST
Chloroform	20.6	0.500	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Chloromethane	17.0	2.50	5.00	ug/L	1	20.0	---	85	80-120%	---	---	
2-Chlorotoluene	19.2	0.500	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
4-Chlorotoluene	17.6	0.500	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
Dibromochloromethane	22.7	0.500	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.6	2.50	5.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.2	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Dibromomethane	21.5	0.500	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,2-Dichlorobenzene	19.2	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100356 - EPA 5030B							**Water**					
LCS (0100356-BS1)			Prepared: 10/10/20 13:00		Analyzed: 10/10/20 13:35							
1,3-Dichlorobenzene	19.5	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
1,4-Dichlorobenzene	19.3	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Dichlorodifluoromethane	17.5	0.500	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
1,1-Dichloroethane	19.0	0.200	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
1,2-Dichloroethane (EDC)	18.8	0.200	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,1-Dichloroethene	19.7	0.200	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
cis-1,2-Dichloroethene	19.1	0.200	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
trans-1,2-Dichloroethene	19.3	0.200	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dichloropropane	19.4	0.250	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
1,3-Dichloropropane	18.4	0.500	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
2,2-Dichloropropane	16.8	0.500	1.00	ug/L	1	20.0	---	84	80-120%	---	---	
1,1-Dichloropropene	19.4	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
cis-1,3-Dichloropropene	17.0	0.500	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
trans-1,3-Dichloropropene	17.0	0.500	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
Hexachlorobutadiene	18.9	2.50	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Methylene chloride	21.0	5.00	10.0	ug/L	1	20.0	---	105	80-120%	---	---	
1,1,1,2-Tetrachloroethane	21.6	0.200	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,2,2-Tetrachloroethane	18.8	0.250	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Tetrachloroethene (PCE)	20.0	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,2,3-Trichlorobenzene	16.2	1.00	2.00	ug/L	1	20.0	---	81	80-120%	---	---	
1,2,4-Trichlorobenzene	15.7	2.00	2.00	ug/L	1	20.0	---	**78**	**80-120%**	---	---	Q-55
1,1,1-Trichloroethane	19.3	0.200	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
1,1,2-Trichloroethane	19.8	0.250	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Trichloroethene (TCE)	22.7	0.200	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
Trichlorofluoromethane	28.0	1.00	2.00	ug/L	1	20.0	---	**140**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	19.5	0.500	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Vinyl chloride	19.2	0.200	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 107 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*95 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*96 %*		*80-120 %*			*"*				
Duplicate (0100356-DUP1)			Prepared: 10/10/20 14:14		Analyzed: 10/10/20 19:27							
QC Source Sample: Non-SDG (A0J0279-01)												
Bromobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100356 - EPA 5030B							**Water**					
Duplicate (0100356-DUP1)			Prepared: 10/10/20 14:14		Analyzed: 10/10/20 19:27							
QC Source Sample: Non-SDG (A0J0279-01)												
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%	
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%	EST
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%	
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%	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100356 - EPA 5030B							**Water**					
Duplicate (0100356-DUP1)			Prepared: 10/10/20 14:14 Analyzed: 10/10/20 19:27									
QC Source Sample: Non-SDG (A0J0279-01)												
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%	
1,2,3-Trichlorobenzene	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	2.00	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)	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	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%	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 113 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*106 %*		*80-120 %*		*"*					
Matrix Spike (0100356-MS1)			Prepared: 10/10/20 14:14 Analyzed: 10/10/20 18:06									
QC Source Sample: Non-SDG (A0J0254-01)												
EPA 8260D												
Bromobenzene	20.0	0.250	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
Bromochloromethane	24.3	0.500	1.00	ug/L	1	20.0	ND	122	78-123%	---	---	
Bromodichloromethane	23.3	0.500	1.00	ug/L	1	20.0	ND	116	79-125%	---	---	
Bromoform	24.3	0.500	1.00	ug/L	1	20.0	ND	121	66-130%	---	---	
Bromomethane	31.4	5.00	5.00	ug/L	1	20.0	ND	**157**	**53-141%**	---	---	Q-54
Carbon tetrachloride	25.1	0.500	1.00	ug/L	1	20.0	ND	125	72-136%	---	---	
Chlorobenzene	20.8	0.250	0.500	ug/L	1	20.0	ND	104	80-120%	---	---	
Chloroethane	20.3	5.00	5.00	ug/L	1	20.0	ND	102	60-138%	---	---	EST
Chloroform	22.6	0.500	1.00	ug/L	1	20.0	ND	113	79-124%	---	---	
Chloromethane	19.2	2.50	5.00	ug/L	1	20.0	ND	96	50-139%	---	---	
2-Chlorotoluene	20.3	0.500	1.00	ug/L	1	20.0	ND	102	79-122%	---	---	
4-Chlorotoluene	18.4	0.500	1.00	ug/L	1	20.0	ND	92	78-122%	---	---	
Dibromochloromethane	23.8	0.500	1.00	ug/L	1	20.0	ND	119	74-126%	---	---	
1,2-Dibromo-3-chloropropane	19.5	2.50	5.00	ug/L	1	20.0	ND	97	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.4	0.250	0.500	ug/L	1	20.0	ND	102	77-121%	---	---	
Dibromomethane	23.0	0.500	1.00	ug/L	1	20.0	ND	115	79-123%	---	---	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100356 - EPA 5030B							**Water**					
Matrix Spike (0100356-MS1)			Prepared: 10/10/20 14:14		Analyzed: 10/10/20 18:06							
QC Source Sample: Non-SDG (A0J0254-01)												
1,2-Dichlorobenzene	20.1	0.250	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
1,3-Dichlorobenzene	20.7	0.250	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
1,4-Dichlorobenzene	20.1	0.250	0.500	ug/L	1	20.0	ND	100	79-120%	---	---	
Dichlorodifluoromethane	20.1	0.500	1.00	ug/L	1	20.0	ND	100	32-152%	---	---	
1,1-Dichloroethane	20.8	0.200	0.400	ug/L	1	20.0	ND	104	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.3	0.200	0.400	ug/L	1	20.0	ND	101	73-128%	---	---	
1,1-Dichloroethene	22.5	0.200	0.400	ug/L	1	20.0	ND	113	71-131%	---	---	
cis-1,2-Dichloroethene	21.2	0.200	0.400	ug/L	1	20.0	ND	106	78-123%	---	---	
trans-1,2-Dichloroethene	21.6	0.200	0.400	ug/L	1	20.0	ND	108	75-124%	---	---	
1,2-Dichloropropane	21.0	0.250	0.500	ug/L	1	20.0	ND	105	78-122%	---	---	
1,3-Dichloropropane	19.8	0.500	1.00	ug/L	1	20.0	ND	99	80-120%	---	---	
2,2-Dichloropropane	17.7	0.500	1.00	ug/L	1	20.0	ND	89	60-139%	---	---	
1,1-Dichloropropene	21.8	0.500	1.00	ug/L	1	20.0	ND	109	79-125%	---	---	
cis-1,3-Dichloropropene	16.8	0.500	1.00	ug/L	1	20.0	ND	84	75-124%	---	---	
trans-1,3-Dichloropropene	17.5	0.500	1.00	ug/L	1	20.0	ND	88	73-127%	---	---	
Hexachlorobutadiene	19.8	2.50	5.00	ug/L	1	20.0	ND	99	66-134%	---	---	
Methylene chloride	21.3	5.00	10.0	ug/L	1	20.0	ND	107	74-124%	---	---	
1,1,1,2-Tetrachloroethane	22.7	0.200	0.400	ug/L	1	20.0	ND	113	78-124%	---	---	
1,1,2,2-Tetrachloroethane	20.3	0.250	0.500	ug/L	1	20.0	ND	101	71-121%	---	---	
Tetrachloroethene (PCE)	22.4	0.200	0.400	ug/L	1	20.0	ND	112	74-129%	---	---	
1,2,3-Trichlorobenzene	16.5	1.00	2.00	ug/L	1	20.0	ND	82	69-129%	---	---	
1,2,4-Trichlorobenzene	16.1	2.00	2.00	ug/L	1	20.0	ND	81	69-130%	---	---	Q-54b
1,1,1-Trichloroethane	21.2	0.200	0.400	ug/L	1	20.0	ND	106	74-131%	---	---	
1,1,2-Trichloroethane	21.1	0.250	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
Trichloroethene (TCE)	24.1	0.200	0.400	ug/L	1	20.0	ND	121	79-123%	---	---	
Trichlorofluoromethane	32.0	1.00	2.00	ug/L	1	20.0	ND	**160**	**65-141%**	---	---	Q-54a
1,2,3-Trichloropropane	20.7	0.500	1.00	ug/L	1	20.0	ND	104	73-122%	---	---	
Vinyl chloride	22.2	0.200	0.400	ug/L	1	20.0	ND	111	58-137%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 109 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100430 - EPA 5035A							**Soil**					
Blank (0100430-BLK1)			Prepared: 10/13/20 09:00		Analyzed: 10/13/20 16:51							
5035A/8260D												
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*			*"*				
LCS (0100430-BS1)			Prepared: 10/13/20 09:00		Analyzed: 10/13/20 15:57							
5035A/8260D												
Chlorobenzene	966	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
Duplicate (0100430-DUP1)			Prepared: 09/30/20 08:40		Analyzed: 10/13/20 17:45							
QC Source Sample: Non-SDG (A0J0136-07)												
Chlorobenzene	ND	19.5	39.1	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*			*"*				
Matrix Spike (0100430-MS1)			Prepared: 10/01/20 11:00		Analyzed: 10/13/20 20:02							
QC Source Sample: Non-SDG (A0J0136-13)												
5035A/8260D												
Chlorobenzene	1340	17.1	34.1	ug/kg dry	50	1360	ND	98	79-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*99 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*			*"*				

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100443 - EPA 3546							**Soil**					
Blank (0100443-BLK1)			Prepared: 10/14/20 07:34		Analyzed: 10/14/20 14:59							**C-07**
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1262	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1268	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*		*Limits: 60-125 %*			*Dilution: 1x*				
LCS (0100443-BS1)			Prepared: 10/14/20 07:34		Analyzed: 10/14/20 15:16							**C-07**
EPA 8082A												
Aroclor 1016	173	2.00	4.00	ug/kg wet	1	250	---	69	47-134%	---	---	
Aroclor 1260	222	2.00	4.00	ug/kg wet	1	250	---	89	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 103 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Duplicate (0100443-DUP1)			Prepared: 10/14/20 07:34		Analyzed: 10/14/20 16:09							**C-07**
QC Source Sample: T4RB-2L (A0J0123-01)												
EPA 8082A												
Aroclor 1016	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	**19.0**	2.67	5.34	ug/kg dry	1	---	19.2	---	---	1	30%	P-12
Aroclor 1260	**14.7**	2.67	5.34	ug/kg dry	1	---	23.4	---	---	**45**	**30%**	P-12, Q-05
Aroclor 1262	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1268	ND	2.67	5.34	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Matrix Spike (0100443-MS1)			Prepared: 10/14/20 07:34		Analyzed: 10/14/20 17:19							**C-07**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100443 - EPA 3546							**Soil**					
Matrix Spike (0100443-MS1)			Prepared: 10/14/20 07:34		Analyzed: 10/14/20 17:19							**C-07**
QC Source Sample: DUP-3 (A0J0123-22)												
Aroclor 1016	217	2.30	4.60	ug/kg dry	1	287	ND	76	47-134%	---	---	
Aroclor 1260	256	2.30	4.60	ug/kg dry	1	287	ND	89	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 97 %*		*Limits: 60-125 %*		*Dilution: 1x*					

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100400-BLK1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 21:10								**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 22:20								**C-05**
EPA 8081B												
Aldrin	27.6	1.00	2.00	ug/kg wet	1	50.0	---	55	45-136%	---	---	
gamma-BHC (Lindane)	30.2	1.00	2.00	ug/kg wet	1	50.0	---	60	49-135%	---	---	Q-41
cis-Chlordane	40.4	1.00	2.00	ug/kg wet	1	50.0	---	81	54-133%	---	---	
trans-Chlordane	39.2	1.00	2.00	ug/kg wet	1	50.0	---	78	53-135%	---	---	
4,4'-DDD	54.1	1.00	2.00	ug/kg wet	1	50.0	---	108	56-139%	---	---	
4,4'-DDE	45.9	1.00	2.00	ug/kg wet	1	50.0	---	92	56-134%	---	---	
4,4'-DDT	51.7	1.00	2.00	ug/kg wet	1	50.0	---	103	50-141%	---	---	
Dieldrin	40.6	1.00	2.00	ug/kg wet	1	50.0	---	81	56-136%	---	---	
Endosulfan I	41.9	1.00	2.00	ug/kg wet	1	50.0	---	84	53-132%	---	---	
Endosulfan II	55.0	1.00	2.00	ug/kg wet	1	50.0	---	110	53-134%	---	---	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 22:20								**C-05**
Endosulfan sulfate	61.5	1.00	2.00	ug/kg wet	1	50.0	---	123	55-136%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*112 %*	*55-130 %*			*"*					
LCS (0100400-BS2)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 22:38								**C-05**
EPA 8081B												
cis-Nonachlor	50.0	1.00	2.00	ug/kg wet	1	50.0	---	100	68-121%	---	---	
2,4'-DDD	48.5	1.00	2.00	ug/kg wet	1	50.0	---	97	58-128%	---	---	
2,4'-DDE	38.2	1.00	2.00	ug/kg wet	1	50.0	---	76	49-125%	---	---	
2,4'-DDT	54.0	1.00	2.00	ug/kg wet	1	50.0	---	108	66-145%	---	---	
Oxychlordane	35.8	1.00	2.00	ug/kg wet	1	50.0	---	72	56-120%	---	---	
trans-Nonachlor	38.9	1.00	2.00	ug/kg wet	1	50.0	---	78	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 56 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 23:13								**C-05**
QC Source Sample: Non-SDG (A0I0826-11RE1)												
Aldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Dieldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	34.3	68.6	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							**C-05**
QC Source Sample: Non-SDG (A0I0826-11RE1)												
Oxychlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 44 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*95 %*		*55-130 %*			*"*				
Matrix Spike (0100400-MS1)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:06							**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
EPA 8081B												
Aldrin	52.1	9.92	19.8	ug/kg dry	5	49.6	ND	105	45-136%	---	---	
gamma-BHC (Lindane)	66.9	19.8	19.8	ug/kg dry	5	49.6	ND	135	49-135%	---	---	
cis-Chlordane	62.6	9.92	19.8	ug/kg dry	5	49.6	ND	126	54-133%	---	---	
trans-Chlordane	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-135%	---	---	
4,4'-DDD	73.3	19.8	19.8	ug/kg dry	5	49.6	ND	**148**	**56-139%**	---	---	Q-02
4,4'-DDE	74.6	9.92	19.8	ug/kg dry	5	49.6	25.8	98	56-134%	---	---	
4,4'-DDT	349	9.92	19.8	ug/kg dry	5	49.6	268	**165**	**50-141%**	---	---	Q-03
Dieldrin	52.8	9.92	19.8	ug/kg dry	5	49.6	ND	106	56-136%	---	---	
Endosulfan I	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-132%	---	---	
Endosulfan II	56.4	9.92	19.8	ug/kg dry	5	49.6	ND	114	53-134%	---	---	
Endosulfan sulfate	78.8	31.7	31.7	ug/kg dry	5	49.6	ND	**159**	**55-136%**	---	---	Q-41, R-02
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*		*Limits: 42-129 %*			*Dilution: 5x*				
Decachlorobiphenyl (Surr)			*347 %*		*55-130 %*			*"*				S-04
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:23							**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
EPA 8081B												
cis-Nonachlor	66.7	19.9	19.9	ug/kg dry	5	49.7	ND	**134**	**68-121%**	---	---	Q-02
2,4'-DDD	55.1	9.94	19.9	ug/kg dry	5	49.7	ND	111	58-128%	---	---	
2,4'-DDE	54.9	9.94	19.9	ug/kg dry	5	49.7	ND	110	49-125%	---	---	
2,4'-DDT	93.0	9.94	19.9	ug/kg dry	5	49.7	43.3	100	66-145%	---	---	
Oxychlordane	56.9	9.94	19.9	ug/kg dry	5	49.7	ND	114	56-120%	---	---	
trans-Nonachlor	48.9	9.94	19.9	ug/kg dry	5	49.7	ND	98	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*		*Limits: 42-129 %*			*Dilution: 5x*				

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56 Analyzed: 10/18/20 00:23									**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 340 %*	*Limits: 55-130 %*			*Dilution: 5x*					S-04

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
Blank (0100353-BLK1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:12									
EPA 8270E												
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	---	---	---	---	---	---	Q-30
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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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
Blank (0100353-BLK1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:12									
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 83 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*75 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*78 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*83 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*78 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*74 %*		*39-132 %*			*"*				
LCS (0100353-BS1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:55									
EPA 8270E												
Acenaphthene	441	2.66	5.34	ug/kg wet	2	533	---	83	40-123%	---	---	
Acenaphthylene	464	2.66	5.34	ug/kg wet	2	533	---	87	32-132%	---	---	
Anthracene	431	2.66	5.34	ug/kg wet	2	533	---	81	47-123%	---	---	
Benz(a)anthracene	440	2.66	5.34	ug/kg wet	2	533	---	82	49-126%	---	---	
Benzo(a)pyrene	452	4.00	8.00	ug/kg wet	2	533	---	85	45-129%	---	---	
Benzo(b)fluoranthene	448	4.00	8.00	ug/kg wet	2	533	---	84	45-132%	---	---	
Benzo(k)fluoranthene	432	4.00	8.00	ug/kg wet	2	533	---	81	47-132%	---	---	
Benzo(g,h,i)perylene	431	2.66	5.34	ug/kg wet	2	533	---	81	43-134%	---	---	
Chrysene	438	2.66	5.34	ug/kg wet	2	533	---	82	50-124%	---	---	
Dibenz(a,h)anthracene	415	2.66	5.34	ug/kg wet	2	533	---	78	45-134%	---	---	
Fluoranthene	448	2.66	5.34	ug/kg wet	2	533	---	84	50-127%	---	---	
Fluorene	433	2.66	5.34	ug/kg wet	2	533	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	398	2.66	5.34	ug/kg wet	2	533	---	75	45-133%	---	---	
1-Methylnaphthalene	458	5.34	10.7	ug/kg wet	2	533	---	86	40-120%	---	---	
2-Methylnaphthalene	471	5.34	10.7	ug/kg wet	2	533	---	88	38-122%	---	---	
Naphthalene	428	5.34	10.7	ug/kg wet	2	533	---	80	35-123%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
LCS (0100353-BS1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 10:55							
Phenanthrene	408	2.66	5.34	ug/kg wet	2	533	---	77	50-121%	---	---	
Pyrene	456	2.66	5.34	ug/kg wet	2	533	---	86	47-127%	---	---	
Carbazole	231	4.00	8.00	ug/kg wet	2	533	---	**43**	**50-123%**	---	---	Q-30
Dibenzofuran	432	2.66	5.34	ug/kg wet	2	533	---	81	44-120%	---	---	
2-Chlorophenol	420	13.3	26.6	ug/kg wet	2	533	---	79	34-121%	---	---	
4-Chloro-3-methylphenol	525	26.6	53.4	ug/kg wet	2	533	---	99	45-122%	---	---	
2,4-Dichlorophenol	490	13.3	26.6	ug/kg wet	2	533	---	92	40-122%	---	---	
2,4-Dimethylphenol	506	13.3	26.6	ug/kg wet	2	533	---	95	30-127%	---	---	
2,4-Dinitrophenol	537	66.6	133	ug/kg wet	2	533	---	101	10-137%	---	---	
4,6-Dinitro-2-methylphenol	469	66.6	133	ug/kg wet	2	533	---	88	29-132%	---	---	
2-Methylphenol	460	6.66	13.3	ug/kg wet	2	533	---	86	32-122%	---	---	
3+4-Methylphenol(s)	465	6.66	13.3	ug/kg wet	2	533	---	87	34-120%	---	---	
2-Nitrophenol	464	26.6	53.4	ug/kg wet	2	533	---	87	36-123%	---	---	
4-Nitrophenol	473	26.6	53.4	ug/kg wet	2	533	---	89	30-132%	---	---	
Pentachlorophenol (PCP)	440	26.6	53.4	ug/kg wet	2	533	---	82	25-133%	---	---	
Phenol	439	5.34	10.7	ug/kg wet	2	533	---	82	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	448	13.3	26.6	ug/kg wet	2	533	---	84	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	462	13.3	26.6	ug/kg wet	2	533	---	87	40-120%	---	---	
2,4,5-Trichlorophenol	456	13.3	26.6	ug/kg wet	2	533	---	85	41-124%	---	---	
2,4,6-Trichlorophenol	455	13.3	26.6	ug/kg wet	2	533	---	85	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	496	40.0	80.0	ug/kg wet	2	533	---	93	51-133%	---	---	
Butyl benzyl phthalate	495	26.6	53.4	ug/kg wet	2	533	---	93	48-132%	---	---	
Diethylphthalate	433	26.6	53.4	ug/kg wet	2	533	---	81	50-124%	---	---	
Dimethylphthalate	442	26.6	53.4	ug/kg wet	2	533	---	83	48-124%	---	---	
Di-n-butylphthalate	463	26.6	53.4	ug/kg wet	2	533	---	87	51-128%	---	---	
Di-n-octyl phthalate	483	26.6	53.4	ug/kg wet	2	533	---	91	45-140%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 79 %*		*Limits: 37-122 %*			*Dilution: 2x*				
2-Fluorobiphenyl (Surr)			*79 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*80 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*80 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*77 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*81 %*		*39-132 %*			*"*				
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 13:42							

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 13:42							
QC Source Sample: Non-SDG (A0I0826-01RE1)												
Acenaphthene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Acenaphthylene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Anthracene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Benz(a)anthracene	**18.9**	5.30	10.6	ug/kg wet	4	---	27.2	---	---	**36**	**30%**	Q-04
Benzo(a)pyrene	**31.6**	7.97	15.9	ug/kg wet	4	---	45.1	---	---	**35**	**30%**	Q-04
Benzo(b)fluoranthene	**37.9**	7.97	15.9	ug/kg wet	4	---	55.9	---	---	**38**	**30%**	Q-04
Benzo(k)fluoranthene	**15.1**	7.97	15.9	ug/kg wet	4	---	21.1	---	---	**34**	**30%**	Q-05, Ja
Benzo(g,h,i)perylene	**24.1**	5.30	10.6	ug/kg wet	4	---	35.0	---	---	**37**	**30%**	Q-04
Chrysene	**20.6**	5.30	10.6	ug/kg wet	4	---	32.2	---	---	**44**	**30%**	Q-04
Dibenz(a,h)anthracene	ND	5.30	10.6	ug/kg wet	4	---	6.88	---	---	***	**30%**	Q-05
Fluoranthene	**26.7**	5.30	10.6	ug/kg wet	4	---	42.3	---	---	**45**	**30%**	Q-04
Fluorene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**20.4**	5.30	10.6	ug/kg wet	4	---	29.7	---	---	**37**	**30%**	Q-04
1-Methylnaphthalene	ND	10.6	21.2	ug/kg wet	4	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	10.6	21.2	ug/kg wet	4	---	ND	---	---	---	30%	
Naphthalene	ND	10.6	21.2	ug/kg wet	4	---	ND	---	---	---	30%	
Phenanthrene	**11.0**	5.30	10.6	ug/kg wet	4	---	18.0	---	---	**48**	**30%**	Q-05
Pyrene	**27.6**	5.30	10.6	ug/kg wet	4	---	42.9	---	---	**43**	**30%**	Q-04
Carbazole	ND	7.97	15.9	ug/kg wet	4	---	ND	---	---	---	30%	Q-30
Dibenzofuran	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
2-Chlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	133	266	ug/kg wet	4	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	133	266	ug/kg wet	4	---	ND	---	---	---	30%	
2-Methylphenol	ND	13.3	26.6	ug/kg wet	4	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	13.3	26.6	ug/kg wet	4	---	ND	---	---	---	30%	
2-Nitrophenol	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
4-Nitrophenol	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Phenol	ND	10.6	21.2	ug/kg wet	4	---	21.3	---	---	***	**30%**	Q-05
2,3,4,6-Tetrachlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 13:42									
QC Source Sample: Non-SDG (A0I0826-01RE1)												
2,3,5,6-Tetrachlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	79.7	159	ug/kg wet	4	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Diethylphthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Dimethylphthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*60 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*55 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*66 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*59 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*62 %*		*39-132 %*		*"*					
Matrix Spike (0100353-MS1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 15:49									
QC Source Sample: Non-SDG (A0J0265-03RE2)												
EPA 8270E												
Acenaphthene	417	2.64	5.30	ug/kg wet	2	529	ND	79	40-123%	---	---	
Acenaphthylene	444	2.64	5.30	ug/kg wet	2	529	ND	84	32-132%	---	---	
Anthracene	428	2.64	5.30	ug/kg wet	2	529	ND	81	47-123%	---	---	
Benz(a)anthracene	427	2.64	5.30	ug/kg wet	2	529	ND	81	49-126%	---	---	
Benzo(a)pyrene	431	3.97	7.94	ug/kg wet	2	529	ND	81	45-129%	---	---	
Benzo(b)fluoranthene	435	3.97	7.94	ug/kg wet	2	529	ND	82	45-132%	---	---	
Benzo(k)fluoranthene	406	3.97	7.94	ug/kg wet	2	529	ND	77	47-132%	---	---	
Benzo(g,h,i)perylene	393	2.64	5.30	ug/kg wet	2	529	ND	74	43-134%	---	---	
Chrysene	431	2.64	5.30	ug/kg wet	2	529	ND	81	50-124%	---	---	
Dibenz(a,h)anthracene	394	2.64	5.30	ug/kg wet	2	529	ND	74	45-134%	---	---	
Fluoranthene	432	2.64	5.30	ug/kg wet	2	529	2.87	81	50-127%	---	---	
Fluorene	412	2.64	5.30	ug/kg wet	2	529	ND	78	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	368	2.64	5.30	ug/kg wet	2	529	ND	69	45-133%	---	---	
1-Methylnaphthalene	433	5.30	10.6	ug/kg wet	2	529	ND	82	40-120%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
Matrix Spike (0100353-MS1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 15:49							
QC Source Sample: Non-SDG (A0J0265-03RE2)												
2-Methylnaphthalene	444	5.30	10.6	ug/kg wet	2	529	ND	84	38-122%	---	---	
Naphthalene	397	5.30	10.6	ug/kg wet	2	529	5.39	74	35-123%	---	---	
Phenanthrene	405	2.64	5.30	ug/kg wet	2	529	3.51	76	50-121%	---	---	
Pyrene	437	2.64	5.30	ug/kg wet	2	529	ND	82	47-127%	---	---	
Carbazole	403	3.97	7.94	ug/kg wet	2	529	ND	76	50-123%	---	---	Q-30
Dibenzofuran	412	2.64	5.30	ug/kg wet	2	529	ND	78	44-120%	---	---	
2-Chlorophenol	389	13.2	26.4	ug/kg wet	2	529	ND	73	34-121%	---	---	
4-Chloro-3-methylphenol	445	26.4	53.0	ug/kg wet	2	529	ND	84	45-122%	---	---	
2,4-Dichlorophenol	424	13.2	26.4	ug/kg wet	2	529	ND	80	40-122%	---	---	
2,4-Dimethylphenol	325	13.2	26.4	ug/kg wet	2	529	ND	61	30-127%	---	---	
2,4-Dinitrophenol	552	66.1	132	ug/kg wet	2	529	ND	104	10-137%	---	---	
4,6-Dinitro-2-methylphenol	427	66.1	132	ug/kg wet	2	529	ND	81	29-132%	---	---	
2-Methylphenol	365	6.61	13.2	ug/kg wet	2	529	ND	69	32-122%	---	---	
3+4-Methylphenol(s)	382	6.61	13.2	ug/kg wet	2	529	ND	72	34-120%	---	---	
2-Nitrophenol	445	26.4	53.0	ug/kg wet	2	529	ND	84	36-123%	---	---	
4-Nitrophenol	394	26.4	53.0	ug/kg wet	2	529	ND	74	30-132%	---	---	
Pentachlorophenol (PCP)	490	26.4	53.0	ug/kg wet	2	529	ND	93	25-133%	---	---	
Phenol	382	5.30	10.6	ug/kg wet	2	529	ND	72	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	420	13.2	26.4	ug/kg wet	2	529	ND	79	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	435	13.2	26.4	ug/kg wet	2	529	ND	82	40-120%	---	---	
2,4,5-Trichlorophenol	424	13.2	26.4	ug/kg wet	2	529	ND	80	41-124%	---	---	
2,4,6-Trichlorophenol	412	13.2	26.4	ug/kg wet	2	529	ND	78	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	581	39.7	79.4	ug/kg wet	2	529	40.8	102	51-133%	---	---	
Butyl benzyl phthalate	521	26.4	53.0	ug/kg wet	2	529	ND	98	48-132%	---	---	
Diethylphthalate	418	26.4	53.0	ug/kg wet	2	529	ND	79	50-124%	---	---	
Dimethylphthalate	428	26.4	53.0	ug/kg wet	2	529	ND	81	48-124%	---	---	
Di-n-butylphthalate	462	26.4	53.0	ug/kg wet	2	529	ND	87	51-128%	---	---	
Di-n-octyl phthalate	548	26.4	53.0	ug/kg wet	2	529	ND	104	45-140%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 77 %*	*Limits: 37-122 %*	*Dilution: 2x*
2-Fluorobiphenyl (Surr)	*72 %*	*44-120 %*	*"*
Phenol-d6 (Surr)	*70 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*79 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*64 %*	*35-120 %*	*"*

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Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100353 - EPA 3546							**Soil**					
Matrix Spike (0100353-MS1)					Prepared: 10/10/20 09:20 Analyzed: 10/12/20 15:49							
QC Source Sample: Non-SDG (A0J0265-03RE2)												
Surr: 2,4,6-Tribromophenol (Surr)					*Recovery: 73 %*	*Limits: 39-132 %*						*Dilution: 2x*

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100304 - EPA 3051A							**Soil**					
Blank (0100304-BLK1)			Prepared: 10/09/20 08:39 Analyzed: 10/13/20 14:42									
EPA 6020A												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (0100304-BS1)			Prepared: 10/09/20 08:39 Analyzed: 10/13/20 15:08									
EPA 6020A												
Arsenic	48.7	0.500	1.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Cadmium	48.8	0.100	0.200	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Copper	50.9	1.00	2.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Lead	49.2	0.100	0.200	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Mercury	1.04	0.0400	0.0800	mg/kg wet	10	1.00	---	104	80-120%	---	---	
Zinc	48.8	2.00	4.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Duplicate (0100304-DUP1)			Prepared: 10/09/20 08:39 Analyzed: 10/13/20 15:24									
QC Source Sample: Non-SDG (A0J0032-02)												
Arsenic	**5.21**	0.540	1.08	mg/kg dry	10	---	4.96	---	---	5	20%	
Cadmium	ND	0.108	0.216	mg/kg dry	10	---	0.140	---	---	***	**20%**	Q-05
Copper	**14.8**	1.08	2.16	mg/kg dry	10	---	15.0	---	---	1	20%	
Lead	**10.5**	0.108	0.216	mg/kg dry	10	---	11.0	---	---	5	20%	
Mercury	ND	0.0432	0.0865	mg/kg dry	10	---	ND	---	---	---	20%	
Zinc	**53.3**	2.16	4.32	mg/kg dry	10	---	53.9	---	---	1	20%	
Matrix Spike (0100304-MS1)			Prepared: 10/09/20 08:39 Analyzed: 10/13/20 15:29									
QC Source Sample: Non-SDG (A0J0032-02)												
EPA 6020A												
Arsenic	54.5	0.535	1.07	mg/kg dry	10	53.5	4.96	93	75-125%	---	---	
Cadmium	51.4	0.107	0.214	mg/kg dry	10	53.5	0.140	96	75-125%	---	---	
Copper	67.9	1.07	2.14	mg/kg dry	10	53.5	15.0	99	75-125%	---	---	
Lead	64.5	0.107	0.214	mg/kg dry	10	53.5	11.0	100	75-125%	---	---	

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100304 - EPA 3051A							**Soil**					
Matrix Spike (0100304-MS1)				Prepared: 10/09/20 08:39		Analyzed: 10/13/20 15:29						
QC Source Sample: Non-SDG (A0J0032-02)												
Mercury	1.08	0.0428	0.0856	mg/kg dry	10	1.07	ND	101	75-125%	---	---	
Zinc	105	2.14	4.28	mg/kg dry	10	53.5	53.9	95	75-125%	---	---	

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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 0100156 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100156-DUP1)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: Non-SDG (A0I0799-02)												
% Solids	**96.5**	---	1.00	%	1	---	96.5	---	---	0.01	10%	
Duplicate (0100156-DUP2)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: Non-SDG (A0J0002-03)												
% Solids	**90.0**	---	1.00	%	1	---	90.5	---	---	0.6	10%	
Duplicate (0100156-DUP3)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: Non-SDG (A0J0062-06)												
% Solids	**90.1**	---	1.00	%	1	---	90.5	---	---	0.4	10%	
Duplicate (0100156-DUP4)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: T4RB-2U (A0J0123-02)												
EPA 8000D												
% Solids	**93.1**	---	1.00	%	1	---	93.2	---	---	0.1	10%	
Duplicate (0100156-DUP5)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: T4RB-8L (A0J0123-14)												
EPA 8000D												
% Solids	**76.0**	---	1.00	%	1	---	75.7	---	---	0.4	10%	
Duplicate (0100156-DUP6)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: Non-SDG (A0J0128-02)												
% Solids	**89.5**	---	1.00	%	1	---	90.1	---	---	0.6	10%	
Duplicate (0100156-DUP7)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: Non-SDG (A0J0128-13)												
% Solids	**90.1**	---	1.00	%	1	---	89.8	---	---	0.2	10%	
Duplicate (0100156-DUP8)			Prepared: 10/06/20 09:09		Analyzed: 10/07/20 07:58							
QC Source Sample: Non-SDG (A0J0128-24)												

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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 0100156 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100156-DUP8)			Prepared: 10/06/20 09:09			Analyzed: 10/07/20 07:58						
QC Source Sample: Non-SDG (A0J0128-24)												
% Solids	**83.4**	---	1.00	%	1	---	82.7	---	---	0.8	10%	
Duplicate (0100156-DUP9)			Prepared: 10/06/20 19:08			Analyzed: 10/07/20 07:58						
QC Source Sample: Non-SDG (A0J0173-01)												
% Solids	**79.9**	---	1.00	%	1	---	80.2	---	---	0.4	10%	
Duplicate (0100156-DUPA)			Prepared: 10/06/20 19:08			Analyzed: 10/07/20 07:58						
QC Source Sample: Non-SDG (A0J0184-04)												
% Solids	**67.7**	---	1.00	%	1	---	67.3	---	---	0.6	10%	
Duplicate (0100156-DUPB)			Prepared: 10/06/20 19:17			Analyzed: 10/07/20 07:58						
QC Source Sample: Non-SDG (A0J0187-02)												
% Solids	**90.8**	---	1.00	%	1	---	90.9	---	---	0.1	10%	

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

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Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0400 - EPA 3546 (Microwave)							**Solid**					
Blank (BIJ0400-BLK1)			Prepared: 10/14/20 10:50 Analyzed: 10/20/20 11:52									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.450	3.86	ug/kg wet	1	---	---	---	---	---	---	U
Surr: Tripentyltin		*Recovery:*	*73.0 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*56.3 %*		*30-160 %*			*"*				
LCS (BIJ0400-BS1)			Prepared: 10/14/20 10:50 Analyzed: 10/20/20 12:09									
EPA 8270E-SIM												
Tributyltin Ion	36.3	0.450	3.86	ug/kg wet	1	44.554	---	81.6	30-160%	---	---	
Surr: Tripentyltin		*Recovery:*	*86.7 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*73.1 %*		*30-160 %*			*"*				
LCS Dup (BIJ0400-BSD1)			Prepared: 10/14/20 10:50 Analyzed: 10/20/20 12:25									
EPA 8270E-SIM												
Tributyltin Ion	39.3	0.450	3.86	ug/kg wet	1	44.554	---	88.2	30-160%	7.76	30%	
Surr: Tripentyltin		*Recovery:*	*94.5 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*75.5 %*		*30-160 %*			*"*				

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100257							
A0J0123-01	Soil	NWTPH-Dx	09/30/20 09:45	10/08/20 08:17	10.25g/5mL	10g/5mL	0.98
A0J0123-02	Soil	NWTPH-Dx	09/30/20 10:15	10/08/20 08:17	10.47g/5mL	10g/5mL	0.96
A0J0123-03	Soil	NWTPH-Dx	09/30/20 10:45	10/08/20 08:17	10.2g/5mL	10g/5mL	0.98
A0J0123-04	Soil	NWTPH-Dx	09/30/20 11:20	10/08/20 08:17	10.14g/5mL	10g/5mL	0.99
A0J0123-05	Soil	NWTPH-Dx	09/30/20 12:20	10/08/20 08:17	10.07g/5mL	10g/5mL	0.99
A0J0123-06	Soil	NWTPH-Dx	09/30/20 12:50	10/08/20 08:17	10.34g/5mL	10g/5mL	0.97
A0J0123-08	Soil	NWTPH-Dx	09/30/20 00:00	10/08/20 08:17	10.58g/5mL	10g/5mL	0.95
Batch: 0100286							
A0J0123-09	Soil	NWTPH-Dx	10/01/20 09:50	10/08/20 13:09	10.28g/5mL	10g/5mL	0.97
A0J0123-10RE1	Soil	NWTPH-Dx	10/01/20 10:25	10/08/20 13:09	10.28g/5mL	10g/5mL	0.97
A0J0123-11	Soil	NWTPH-Dx	10/01/20 11:20	10/08/20 13:09	10.32g/5mL	10g/5mL	0.97
A0J0123-12	Soil	NWTPH-Dx	10/01/20 12:15	10/08/20 13:09	10.8g/5mL	10g/5mL	0.93
A0J0123-13	Soil	NWTPH-Dx	10/01/20 13:05	10/08/20 13:09	10.5g/5mL	10g/5mL	0.95
A0J0123-14	Soil	NWTPH-Dx	10/01/20 14:05	10/08/20 13:09	10.59g/5mL	10g/5mL	0.94
A0J0123-15	Soil	NWTPH-Dx	10/01/20 14:35	10/08/20 13:09	10.35g/5mL	10g/5mL	0.97
A0J0123-16	Soil	NWTPH-Dx	10/02/20 09:50	10/08/20 13:09	10.54g/5mL	10g/5mL	0.95
A0J0123-17	Soil	NWTPH-Dx	10/02/20 10:25	10/08/20 13:09	10.32g/5mL	10g/5mL	0.97
A0J0123-18	Soil	NWTPH-Dx	10/02/20 11:05	10/08/20 13:09	10.21g/5mL	10g/5mL	0.98
A0J0123-19	Soil	NWTPH-Dx	10/02/20 11:25	10/08/20 13:09	10.44g/5mL	10g/5mL	0.96
A0J0123-20RE1	Soil	NWTPH-Dx	10/02/20 12:00	10/08/20 13:09	10.81g/5mL	10g/5mL	0.93
A0J0123-21	Soil	NWTPH-Dx	10/02/20 12:25	10/08/20 13:09	10.44g/5mL	10g/5mL	0.96
A0J0123-22	Soil	NWTPH-Dx	10/02/20 00:00	10/08/20 13:09	10.57g/5mL	10g/5mL	0.95

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100356							
A0J0123-23	Water	EPA 8260D	09/30/20 00:00	10/10/20 14:14	5mL/5mL	5mL/5mL	1.00

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100430							
A0J0123-03	Soil	5035A/8260D	09/30/20 10:45	09/30/20 10:45	5.63g/5mL	5g/5mL	0.89
A0J0123-10	Soil	5035A/8260D	10/01/20 10:25	10/01/20 10:25	4.91g/5mL	5g/5mL	1.02

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

SAMPLE PREPARATION INFORMATION

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0J0123-13	Soil	5035A/8260D	10/01/20 13:05	10/01/20 13:05	4.91g/5mL	5g/5mL	1.02
A0J0123-16	Soil	5035A/8260D	10/02/20 09:50	10/02/20 09:50	3.78g/5mL	5g/5mL	1.32
A0J0123-22	Soil	5035A/8260D	10/02/20 00:00	10/02/20 00:00	2.96g/5mL	5g/5mL	1.69

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100443							
A0J0123-01	Soil	EPA 8082A	09/30/20 09:45	10/14/20 07:34	10.01g/2mL	10g/2mL	1.00
A0J0123-02	Soil	EPA 8082A	09/30/20 10:15	10/14/20 07:34	10.34g/2mL	10g/2mL	0.97
A0J0123-03	Soil	EPA 8082A	09/30/20 10:45	10/14/20 07:34	10.06g/2mL	10g/2mL	0.99
A0J0123-04	Soil	EPA 8082A	09/30/20 11:20	10/14/20 07:34	10.13g/2mL	10g/2mL	0.99
A0J0123-05	Soil	EPA 8082A	09/30/20 12:20	10/14/20 07:34	10.16g/2mL	10g/2mL	0.98
A0J0123-06	Soil	EPA 8082A	09/30/20 12:50	10/14/20 07:34	10.28g/2mL	10g/2mL	0.97
A0J0123-08	Soil	EPA 8082A	09/30/20 00:00	10/14/20 07:34	10.08g/2mL	10g/2mL	0.99
A0J0123-09	Soil	EPA 8082A	10/01/20 09:50	10/14/20 07:34	10.43g/2mL	10g/2mL	0.96
A0J0123-10	Soil	EPA 8082A	10/01/20 10:25	10/14/20 07:34	10.28g/2mL	10g/2mL	0.97
A0J0123-13	Soil	EPA 8082A	10/01/20 13:05	10/14/20 07:34	10.08g/2mL	10g/2mL	0.99
A0J0123-16	Soil	EPA 8082A	10/02/20 09:50	10/14/20 07:34	10.03g/2mL	10g/2mL	1.00
A0J0123-22	Soil	EPA 8082A	10/02/20 00:00	10/14/20 07:34	10.4g/2mL	10g/2mL	0.96

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100400							
A0J0123-03RE1	Soil	EPA 8081B	09/30/20 10:45	10/10/20 09:56	10.58g/10mL	10g/5mL	1.89
A0J0123-10RE1	Soil	EPA 8081B	10/01/20 10:25	10/10/20 09:56	10.36g/20mL	10g/5mL	3.86
A0J0123-13RE1	Soil	EPA 8081B	10/01/20 13:05	10/10/20 09:56	10.32g/10mL	10g/5mL	1.94
A0J0123-16RE1	Soil	EPA 8081B	10/02/20 09:50	10/10/20 09:56	10.3g/10mL	10g/5mL	1.94
A0J0123-22RE1	Soil	EPA 8081B	10/02/20 00:00	10/10/20 09:56	10.63g/10mL	10g/5mL	1.88

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

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

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100353							
A0J0123-03RE3	Soil	EPA 8270E	09/30/20 10:45	10/10/20 09:20	15.2g/2mL	15g/2mL	0.99
A0J0123-10RE1	Soil	EPA 8270E	10/01/20 10:25	10/10/20 09:20	15.37g/2mL	15g/2mL	0.98
A0J0123-13	Soil	EPA 8270E	10/01/20 13:05	10/10/20 09:20	15.22g/2mL	15g/2mL	0.99
A0J0123-16RE1	Soil	EPA 8270E	10/02/20 09:50	10/10/20 09:20	15.19g/2mL	15g/2mL	0.99
A0J0123-22RE1	Soil	EPA 8270E	10/02/20 00:00	10/10/20 09:20	15.22g/2mL	15g/2mL	0.99

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100304							
A0J0123-03	Soil	EPA 6020A	09/30/20 10:45	10/09/20 08:39	0.45g/50mL	0.5g/50mL	1.11
A0J0123-10	Soil	EPA 6020A	10/01/20 10:25	10/09/20 08:39	0.452g/50mL	0.5g/50mL	1.11
A0J0123-13	Soil	EPA 6020A	10/01/20 13:05	10/09/20 08:39	0.451g/50mL	0.5g/50mL	1.11
A0J0123-16	Soil	EPA 6020A	10/02/20 09:50	10/09/20 08:39	0.483g/50mL	0.5g/50mL	1.04
A0J0123-16RE1	Soil	EPA 6020A	10/02/20 09:50	10/09/20 08:39	0.483g/50mL	0.5g/50mL	1.04
A0J0123-22	Soil	EPA 6020A	10/02/20 00:00	10/09/20 08:39	0.453g/50mL	0.5g/50mL	1.10

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100156							
A0J0123-01	Soil	EPA 8000D	09/30/20 09:45	10/06/20 09:09			NA
A0J0123-02	Soil	EPA 8000D	09/30/20 10:15	10/06/20 09:09			NA
A0J0123-03	Soil	EPA 8000D	09/30/20 10:45	10/06/20 09:09			NA
A0J0123-04	Soil	EPA 8000D	09/30/20 11:20	10/06/20 09:09			NA
A0J0123-05	Soil	EPA 8000D	09/30/20 12:20	10/06/20 09:09			NA
A0J0123-06	Soil	EPA 8000D	09/30/20 12:50	10/06/20 09:09			NA
A0J0123-08	Soil	EPA 8000D	09/30/20 00:00	10/06/20 09:09			NA
A0J0123-09	Soil	EPA 8000D	10/01/20 09:50	10/06/20 09:09			NA
A0J0123-10	Soil	EPA 8000D	10/01/20 10:25	10/06/20 09:09			NA
A0J0123-11	Soil	EPA 8000D	10/01/20 11:20	10/06/20 09:09			NA
A0J0123-12	Soil	EPA 8000D	10/01/20 12:15	10/06/20 09:09			NA
A0J0123-13	Soil	EPA 8000D	10/01/20 13:05	10/06/20 09:09			NA
A0J0123-14	Soil	EPA 8000D	10/01/20 14:05	10/06/20 09:09			NA

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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0J0123-15	Soil	EPA 8000D	10/01/20 14:35	10/06/20 09:09			NA
A0J0123-16	Soil	EPA 8000D	10/02/20 09:50	10/06/20 09:09			NA
A0J0123-17	Soil	EPA 8000D	10/02/20 10:25	10/06/20 09:09			NA
A0J0123-18	Soil	EPA 8000D	10/02/20 11:05	10/06/20 09:09			NA
A0J0123-19	Soil	EPA 8000D	10/02/20 11:25	10/06/20 09:09			NA
A0J0123-20	Soil	EPA 8000D	10/02/20 12:00	10/06/20 09:09			NA
A0J0123-21	Soil	EPA 8000D	10/02/20 12:25	10/06/20 09:09			NA
A0J0123-22	Soil	EPA 8000D	10/02/20 00:00	10/06/20 09:09			NA

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Butyl Tins

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0400							
A0J0123-03	Soil	EPA 8270E-SIM	09/30/20 10:45	10/14/20 10:50	6.04g/0.5mL	5g/0.5mL	0.83
A0J0123-10	Soil	EPA 8270E-SIM	10/01/20 10:25	10/14/20 10:50	5.79g/0.5mL	5g/0.5mL	0.86
A0J0123-13	Soil	EPA 8270E-SIM	10/01/20 13:05	10/14/20 10:50	5.34g/0.5mL	5g/0.5mL	0.94
A0J0123-16	Soil	EPA 8270E-SIM	10/02/20 09:50	10/14/20 10:50	6.07g/0.5mL	5g/0.5mL	0.82
A0J0123-22	Soil	EPA 8270E-SIM	10/02/20 00:00	10/14/20 10:50	5.99g/0.5mL	5g/0.5mL	0.84

Apex Laboratories



Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

QUALIFIER DEFINITIONS

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

Apex Laboratories

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
EST	Result reported as an Estimated Value. Results Estimated. Initial Calibration Verification (ICV) failed low.
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.
Ja	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
P-09	Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
P-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
P-12	Result estimated due to the presence of multiple PCB Aroclors and/or PCB congeners not defined as Aroclors.
Q-02	Spike recovery is outside of established control limits due to matrix interference.
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-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-54	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-54a	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +20%. 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 -2%. 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.
S-04	Surrogate recovery is outside of established control limits due to a sample matrix effect.

Apex Laboratories



Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project:	**POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number:	**2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager:	**Steve Misner**	**A0J0123 - 11 17 20 1242**

Analytical Resources, Inc.

U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

Apex Laboratories



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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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



Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

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.

Apex Laboratories, LLC

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



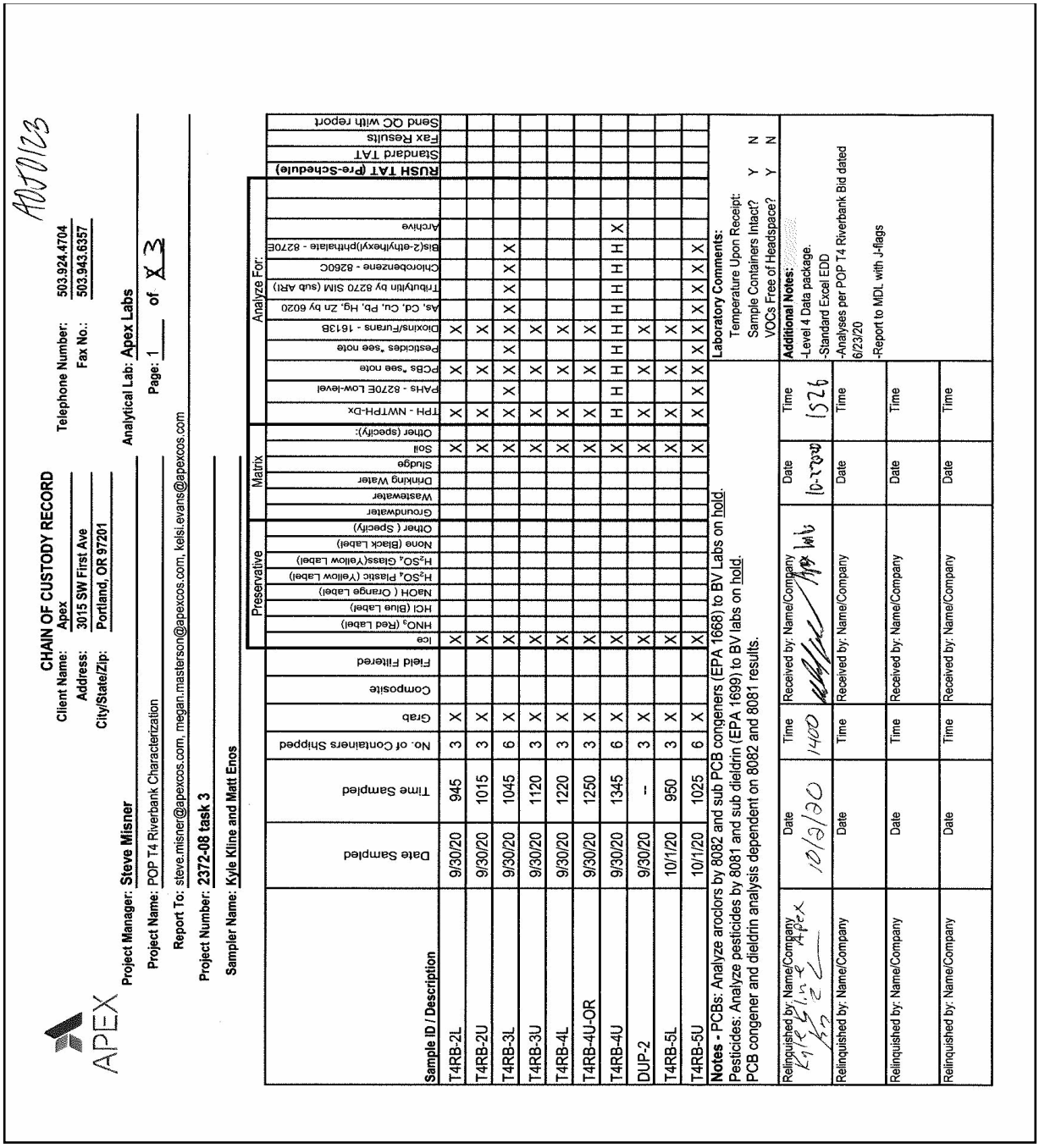
Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**



CHAIN OF CUSTODY RECORD

A0J0123

Client Name: Apex — Telephone Number: 503.924.4704
Address: 3015 SW First Ave — Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 — Analytical Lab: Apex Labs
Page: 1 of 3

Project Manager: Steve Misner
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs "see note	Pesticides "see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-2L	9/30/20	945	3	X			X												X		X		X		X								
T4RB-2U	9/30/20	1015	3	X			X												X		X		X		X								
T4RB-3L	9/30/20	1045	6	X			X												X		X		X		X		X	X					
T4RB-3U	9/30/20	1120	3	X			X												X		X		X		X								
T4RB-4L	9/30/20	1220	3	X			X												X		X		X		X								
T4RB-4U-OR	9/30/20	1250	3	X			X												X		X		X		X								
T4RB-4U	9/30/20	1345	6	X			X												X		H	H	H		H	H	H	H	X				
DUP-2	9/30/20	--	3	X			X												X		X		X		X								
T4RB-5L	10/1/20	950	3	X			X												X		X		X		X								
T4RB-5U	10/1/20	1025	6	X			X												X		X	X	X		X	X	X	X	X				

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time	Relinquished by: Name/Company	Date	Time
Kyle Kline / Apex	10/2/20	1400		10-2-20	1526			
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time	Relinquished by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time	Relinquished by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time	Relinquished by: Name/Company	Date	Time

Apex Laboratories

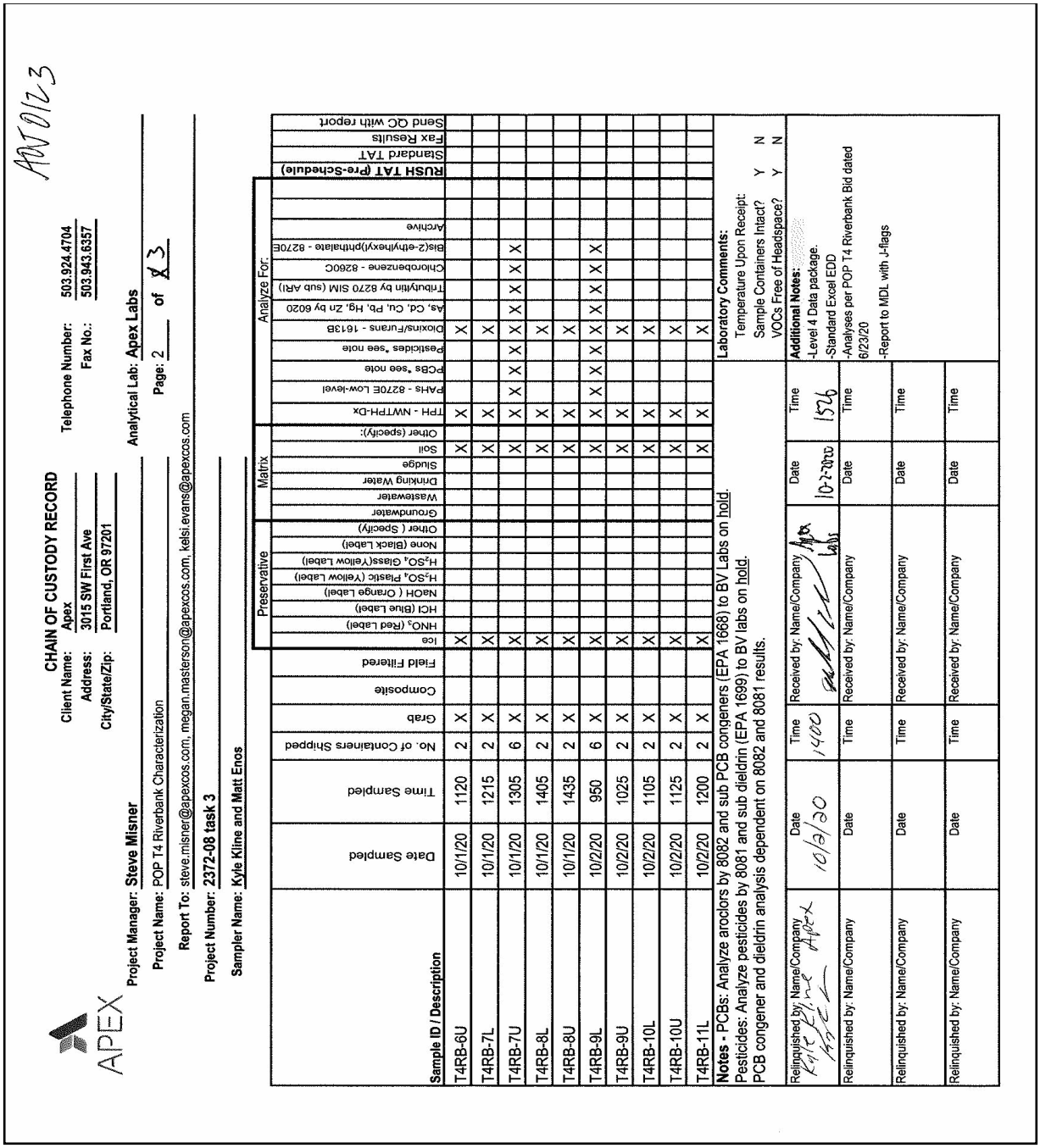
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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**



CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 | Analytical Lab: Apex Labs
Page: 2 of 3

Project Manager: Steve Misner
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-6U	10/1/20	1120	2	X			X												X		X				X								
T4RB-7L	10/1/20	1215	2	X			X												X		X				X								
T4RB-7U	10/1/20	1305	6	X			X												X		X				X								
T4RB-8L	10/1/20	1405	2	X			X												X		X				X								
T4RB-8U	10/1/20	1435	2	X			X												X		X				X								
T4RB-9L	10/2/20	950	6	X			X												X		X				X								
T4RB-9U	10/2/20	1025	2	X			X												X		X				X								
T4RB-10L	10/2/20	1105	2	X			X												X		X				X								
T4RB-10U	10/2/20	1125	2	X			X												X		X				X								
T4RB-11L	10/2/20	1200	2	X			X												X		X				X								

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt: Y N
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline, Apex	10/3/20	1400		10-2-20	1526
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

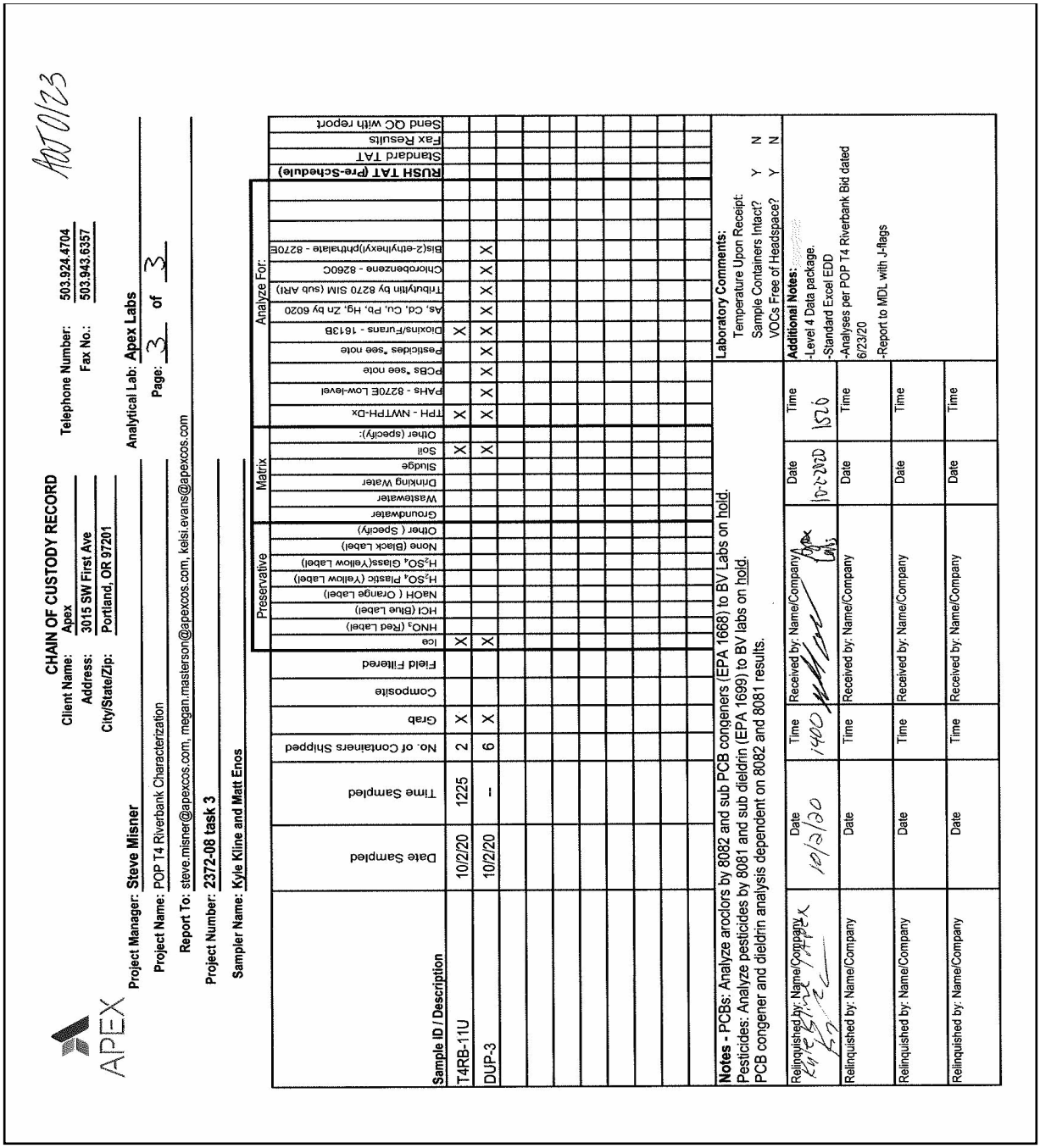
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503-718-2323
ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**



CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 | Analytical Lab: Apex Labs | Page: 3 of 3

Project Manager: Steve Misner
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

A0J0123

APEX

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ART)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-11U	10/2/20	1225	2	X			X												X		X	X	X	X	X	X	X	X					
DUP-3	10/2/20	-	6	X			X												X		X	X	X	X	X	X	X	X					

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
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-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
[illegible]	10/2/20	1400	[illegible]	10/2/20	1520
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0123 - 11 17 20 1242**

APEX LABS COOLER RECEIPT FORM

Client: Apex Co Element WO#: A0 J0123

Project/Project #: POP T4 Riverbank Characterization

Delivery Info:

Date/time received: 10-2-2020 @ 1526 By: MK

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

Cooler Inspection Date/time inspected: 10-2-2020 @ 1650 By: MK

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	5.0	0.8					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	Y	Y					
Ice type: (Gel/Real/Other)	Real	"					
Condition:	good	"					

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

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

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

Samples Inspection: Date/time inspected: 10/5/20 @ 12:00 By: 10/5 KMS ~~12:00 KMS~~

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

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

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

Comments ___

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

Comments: ___

Additional information: TB #2431

Labeled by: KMS Witness: JS Cooler Inspected by: KAS See Project Contact Form: Y

Analytical Resources, Incorporated
Analytical Chemists and Consultants

21 October 2020

Darrell Auvil
Apex Laboratories LLC
12232 SW Garden Place
Tigard, OR 97223

RE: A0J0123

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20J0079	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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.

ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

SUBCONTRACT ORDER

Apex Laboratories

20J0079 AB 10/15/20 **A0J0123** TAT

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

Sample Name: A0J0123-03 **Soil** **Sampled: 09/30/20 10:45** (T4RB-3L)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/15/20 17:00	10/14/20 10:45	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0123-10 **Soil** **Sampled: 10/01/20 10:25** (T4RB-5U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/15/20 17:00	10/15/20 10:25	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0123-13 **Soil** **Sampled: 10/01/20 13:05** (T4RB-7U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/15/20 17:00	10/15/20 13:05	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0123-16 **Soil** **Sampled: 10/02/20 09:50** (T4RB-9L)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/15/20 17:00	10/16/20 09:50	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Standard TAT

Released By	Date	Received By	Date
	14:00 10/6/20	UPS (Shipper)	
UPS (Shipper)			
Released By	Date	Received By	Date
			10/7/2020 1034

SUBCONTRACT ORDER

Apex Laboratories

20J0079 **A0J0123** TAT

Sample Name: A0J0123-22 **Soil** **Sampled: 10/02/20 00:00** (DUP-3)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/15/20 17:00	10/16/20 00:00	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

standard TAT

10/6/20 14:00		UPS (Shipper)	
Released By	Date	Received By	Date
UPS (Shipper)		Jacob Hall 10/7/2020 1034	
Released By	Date	Received By	Date

Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A0J0123-03	20J0079-01	Solid	30-Sep-2020 10:45	07-Oct-2020 10:34
A0J0123-10	20J0079-02	Solid	01-Oct-2020 10:25	07-Oct-2020 10:34
A0J0123-13	20J0079-03	Solid	01-Oct-2020 13:05	07-Oct-2020 10:34
A0J0123-16	20J0079-04	Solid	02-Oct-2020 09:50	07-Oct-2020 10:34
A0J0123-22	20J0079-05	Solid	02-Oct-2020 00:00	07-Oct-2020 10:34

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received 07-Oct-2020 10:34 under ARI work order 20J0079. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The samples were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The blank spike/blank spike duplicate (BS/LCS/BSD/LCSD) percent recoveries and RPD were within control limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex

Project Name: AOJ0123

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 20J0079

Tracking No: 12X472OR0196000710 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1034 2.4

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00 SJ06

Cooler Accepted by: Date: 10/07/2020 Time: 1034

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Trash bag

Was sufficient ice used (if appropriate)? NA YES NO

How were bottles sealed in plastic bags? Individually Grouped Not

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI NA

Were the sample(s) split by ARI? NA YES Date/Time: Equipment: Split by:

Samples Logged by: JSm Date: 10/07/2020 Time: 1107 Labels checked by: JSm

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

A0J0123-03

20J0079-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 09/30/2020 10:45

Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 17:41

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0079-01 A 01
	Preparation Batch: BIJ0400	Sample Size: 6.04 g (wet)	Dry Weight:5.01 g
	Prepared: 10/14/2020	Final Volume: 0.5 mL	% Solids: 82.87
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0079-01 A 01
	Cleanup Batch: CIJ0169	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.450	3.86	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*90.1*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*83.3*	*%*	

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

A0J0123-10

20J0079-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/01/2020 10:25

Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 17:58

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0079-02 A 01
	Preparation Batch: BIJ0400	Sample Size: 5.79 g (wet)	Dry Weight:5.07 g
	Prepared: 10/14/2020	Final Volume: 0.5 mL	% Solids: 87.59
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0079-02 A 01
	Cleanup Batch: CIJ0169	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.444	3.81	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*57.6*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*54.7*	*%*	

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

A0J0123-13

20J0079-03 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/01/2020 13:05

Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 18:14

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0079-03 A 01
	Preparation Batch: BIJ0400	Sample Size: 5.34 g (wet)	Dry Weight:5.00 g
	Prepared: 10/14/2020	Final Volume: 0.5 mL	% Solids: 93.66
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0079-03 A 01
	Cleanup Batch: CIJ0169	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.450	3.86	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*74.3*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*55.2*	*%*	

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

A0J0123-16

20J0079-04 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/02/2020 09:50

Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 18:31

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0079-04 A 01
	Preparation Batch: BIJ0400	Sample Size: 6.07 g (wet)	Dry Weight:5.04 g
	Prepared: 10/14/2020	Final Volume: 0.5 mL	% Solids: 83.11
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0079-04 A 01
	Cleanup Batch: CIJ0169	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.446	3.83	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*68.9*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*49.9*	*%*	

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

A0J0123-22

20J0079-05 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/02/2020 00:00
Instrument: NT8 Analyst: JZ — Analyzed: 10/20/2020 18:47

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0079-05 A 01
	Preparation Batch: BIJ0400	Sample Size: 5.99 g (wet)	Dry Weight:5.00 g
	Prepared: 10/14/2020	Final Volume: 0.5 mL	% Solids: 83.42
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0079-05 A 01
	Cleanup Batch: CIJ0169	Initial Volume: 0.5 mL	
	Cleaned: 19-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.450	3.86	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*67.7*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*50.4*	*%*	

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

Butyl Tins - Quality Control

Batch BIJ0400 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0400-BLK1)					Prepared: 14-Oct-2020 Analyzed: 20-Oct-2020 11:52						
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Surrogate: Tripentyltin	33.0			ug/kg	*45.2*		*73.0*	*30-160*			
Surrogate: Tripropyltin	24.6			ug/kg	*43.7*		*56.3*	*30-160*			
LCS (BIJ0400-BS1)					Prepared: 14-Oct-2020 Analyzed: 20-Oct-2020 12:09						
Tributyltin Ion	36.3	0.450	3.86	ug/kg	44.6		81.6	30-160			
Surrogate: Tripentyltin	39.2			ug/kg	*45.2*		*86.7*	*30-160*			
Surrogate: Tripropyltin	32.0			ug/kg	*43.7*		*73.1*	*30-160*			
LCS Dup (BIJ0400-BSD1)					Prepared: 14-Oct-2020 Analyzed: 20-Oct-2020 12:25						
Tributyltin Ion	39.3	0.450	3.86	ug/kg	44.6		88.2	30-160	7.76	30	
Surrogate: Tripentyltin	42.7			ug/kg	*45.2*		*94.5*	*30-160*			
Surrogate: Tripropyltin	33.0			ug/kg	*43.7*		*75.5*	*30-160*			

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Butyltin Ion	WADOE
Butyltin Ion	
Butyltin Ion	WADOE
Butyltin Ion	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Apex Laboratories LLC	Project: A0J0123	
12232 SW Garden Place	Project Number: A0J0123	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	21-Oct-2020 13:16

Notes and Definitions

J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Your Project #: A0J0123
Your C.O.C. #: na

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2020/11/17
Report #: R6414103
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0Q2516
Received: 2020/10/07, 12:28

Sample Matrix: Soil
Samples Received: 21

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	5	2020/10/16	2020/10/25	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	10	2020/10/16	2020/10/26	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	1	2020/10/16	2020/10/28	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	2	2020/10/16	2020/11/03	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	3	2020/10/17	2020/10/30	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	1	2020/10/16	2020/10/27	BRL SOP-00406	EPA M8290A / M1613
2378TCDF Confirmation (M8290A/M1613)	1	2020/10/16	2020/11/10	BRL SOP-00406	EPA M8290A / M1613
Moisture	21	N/A	2020/10/15	CAM SOP-00445	Carter 2nd ed 51.2 m

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bvlabs.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C0Q2516
Report Date: 2020/11/17

Apex Laboratories
Client Project #: A0J0123

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NVE868	NVE868	NVE869	NVE870	NVE871	NVE872	NVE873			
Sampling Date		2020/09/30 09:45	2020/09/30 09:45	2020/09/30 10:15	2020/09/30 10:45	2020/09/30 11:20	2020/09/30 12:20	2020/09/30 12:50			
COC Number		na	na	na	na	na	na	na			
	UNITS	T4RB-2L	T4RB-2L Lab-Dup	T4RB-2U	T4RB-3L	T4RB-3U	T4RB-4L	T4RB-4U-OR	RDL	MDL	QC Batch
Moisture	%	23	24	6.2	19	7.6	21	4.4	1.0	0.50	7002094

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		NVE874	NVE875	NVE876	NVE877	NVE878	NVE879	NVE880			
Sampling Date		2020/09/30 00:00	2020/10/01 09:50	2020/10/01 10:25	2020/10/01 11:20	2020/10/01 12:15	2020/10/01 13:05	2020/10/01 14:05			
COC Number		na	na	na	na	na	na	na			
	UNITS	DUP-2	T4RB-5L	T4RB-5U	T4RB-6U	T4RB-7L	T4RB-7U	T4RB-8L	RDL	MDL	QC Batch
Moisture	%	7.2	11	13	7.3	21	6.0	23	1.0	0.50	7002094

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		NVE881	NVE882	NVE883	NVE884	NVE885	NVE886	NVE887			
Sampling Date		2020/10/01 14:35	2020/10/02 09:50	2020/10/02 10:25	2020/10/02 11:05	2020/10/02 11:25	2020/10/02 12:00	2020/10/02 12:25			
COC Number		na	na	na	na	na	na	na			
	UNITS	T4RB-8U	T4RB-9L	T4RB-9U	T4RB-10L	T4RB-10U	T4RB-11L	T4RB-11U	RDL	MDL	QC Batch
Moisture	%	4.6	16	8.9	5.3	6.8	7.4	7.5	1.0	0.50	7002094

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		NVE888			
Sampling Date		2020/10/02 00:00			
COC Number		na			
	UNITS	DUP-3	RDL	MDL	QC Batch
Moisture	%	16	1.0	0.50	7002150

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE868							
Sampling Date		2020/09/30 09:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-2L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.265 J	0.102	0.999	0.0400	1.00	0.265	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	0.524 J	0.119	5.00	0.0400	1.00	0.524	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	1.28 J	0.112	5.00	0.0400	0.100	0.128	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	9.44	0.111	5.00	0.0400	0.100	0.944	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	3.23 J	0.116	5.00	0.0400	0.100	0.323	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	489	0.0985	5.00	0.0400	0.0100	4.89	N/A	7015723
Octa CDD *	pg/g	7680 (1)	2.49	200	0.0799	0.000300	2.30	N/A	7015723
Total Tetra CDD *	pg/g	0.879 J	0.102	0.999	0.0400	N/A	N/A	4	7015723
Total Penta CDD *	pg/g	1.97 J	0.119	5.00	0.0400	N/A	N/A	6	7015723
Total Hexa CDD *	pg/g	51.8	0.113	5.00	0.0400	N/A	N/A	8	7015723
Total Hepta CDD *	pg/g	1040	0.0985	5.00	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	0.471 J	0.115	0.999	0.0400	0.100	0.0471	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	0.365 J	0.115	5.00	0.0400	0.0300	0.0110	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	0.603 J	0.107	5.00	0.0400	0.300	0.181	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	3.93 J	0.107	5.00	0.0400	0.100	0.393	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	1.01 J	0.110	5.00	0.0400	0.100	0.101	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	0.561 J	0.106	5.00	0.0400	0.100	0.0561	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	0.111 U	0.111	5.00	0.0400	0.100	0.0111	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	97.2	0.110	5.00	0.0400	0.0100	0.972	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	25.8	0.109	5.00	0.0400	0.0100	0.258	N/A	7015723
Octa CDF **	pg/g	537	0.103	9.99	0.0799	0.000300	0.161	N/A	7015723
Total Tetra CDF **	pg/g	3.45	0.115	0.999	0.0400	N/A	N/A	10	7015723
Total Penta CDF **	pg/g	13.2	0.111	5.00	0.0400	N/A	N/A	9	7015723
Total Hexa CDF **	pg/g	89.4	0.109	5.00	0.0400	N/A	N/A	9	7015723
Total Hepta CDF **	pg/g	123	0.110	5.00	0.0400	N/A	N/A	2	7015723
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	11.6	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) Results obtained from 20x dilution and RDL is adjusted accordingly

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE868							
Sampling Date		2020/09/30 09:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-2L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	125	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	112 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) Results obtained from 20x dilution

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE869							
Sampling Date		2020/09/30 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-2U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.111 U	0.111	0.998	0.0399	1.00	0.111	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.102 U	0.102	4.99	0.0399	1.00	0.102	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.0997 U	0.0997	4.99	0.0399	0.100	0.00997	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	0.0994 U	0.0994	4.99	0.0399	0.100	0.00994	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	0.104 U	0.104	4.99	0.0399	0.100	0.0104	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1.16 J	0.117	4.99	0.0399	0.0100	0.0116	N/A	7016913
Octa CDD *	pg/g	11.0	0.113	9.98	0.0799	0.000300	0.00330	N/A	7016913
Total Tetra CDD *	pg/g	0.111 U	0.111	0.998	0.0399	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.102 U	0.102	4.99	0.0399	N/A	N/A	0	7016913
Total Hexa CDD *	pg/g	0.202 U (1)	0.202	4.99	0.0399	N/A	N/A	0	7016913
Total Hepta CDD *	pg/g	2.39 J	0.117	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.107 U	0.107	0.998	0.0399	0.100	0.0107	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.114 U	0.114	4.99	0.0399	0.0300	0.00342	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.107 U	0.107	4.99	0.0399	0.300	0.0321	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	0.102 U	0.102	4.99	0.0399	0.100	0.0102	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.105 U	0.105	4.99	0.0399	0.100	0.0105	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.102 U	0.102	4.99	0.0399	0.100	0.0102	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.106 U	0.106	4.99	0.0399	0.100	0.0106	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	0.494 J	0.110	4.99	0.0399	0.0100	0.00494	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.110 U	0.110	4.99	0.0399	0.0100	0.00110	N/A	7016913
Octa CDF **	pg/g	0.701 J	0.110	9.98	0.0799	0.000300	0.000210	N/A	7016913
Total Tetra CDF **	pg/g	0.107 U	0.107	0.998	0.0399	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	0.110 U	0.110	4.99	0.0399	N/A	N/A	0	7016913
Total Hexa CDF **	pg/g	0.248 J	0.104	4.99	0.0399	N/A	N/A	2	7016913
Total Hepta CDF **	pg/g	1.01 J	0.110	4.99	0.0399	N/A	N/A	2	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.352	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE869							
Sampling Date		2020/09/30 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-2U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE870							
Sampling Date		2020/09/30 10:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-3L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.105 U	0.105	0.999	0.0400	1.00	0.105	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.317 J	0.114	5.00	0.0400	1.00	0.317	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	1.37 J	0.113	5.00	0.0400	0.100	0.137	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	24.6	0.113	5.00	0.0400	0.100	2.46	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	4.55 J	0.118	5.00	0.0400	0.100	0.455	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1160	0.119	5.00	0.0400	0.0100	11.6	N/A	7016913
Octa CDD *	pg/g	12000 (1)	1.05	99.9	0.0799	0.000300	3.60	N/A	7016913
Total Tetra CDD *	pg/g	0.105 U	0.105	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.461 J	0.114	5.00	0.0400	N/A	N/A	2	7016913
Total Hexa CDD *	pg/g	97.8	0.114	5.00	0.0400	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	2560	0.119	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.117 U	0.117	0.999	0.0400	0.100	0.0117	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.116 U	0.116	5.00	0.0400	0.0300	0.00348	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.108 U	0.108	5.00	0.0400	0.300	0.0324	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	2.98 J	0.110	5.00	0.0400	0.100	0.298	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.609 J	0.113	5.00	0.0400	0.100	0.0609	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.247 J	0.109	5.00	0.0400	0.100	0.0247	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.114 U	0.114	5.00	0.0400	0.100	0.0114	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	230	0.115	5.00	0.0400	0.0100	2.30	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	11.4	0.115	5.00	0.0400	0.0100	0.114	N/A	7016913
Octa CDF **	pg/g	1950 U (2)	1950	9.99	0.0799	0.000300	0.585	N/A	7016913
Total Tetra CDF **	pg/g	0.117 U	0.117	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	1.43 J	0.112	5.00	0.0400	N/A	N/A	2	7016913
Total Hexa CDF **	pg/g	170	0.112	5.00	0.0400	N/A	N/A	8	7016913
Total Hepta CDF **	pg/g	242	0.115	5.00	0.0400	N/A	N/A	2	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	22.1	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 10xdiln

(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE870							
Sampling Date		2020/09/30 10:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-3L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	134 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 10xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE871							
Sampling Date		2020/09/30 11:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-3U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.109 U	0.109	0.999	0.0399	1.00	0.109	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.670 J	0.114	4.99	0.0399	1.00	0.670	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	1.86 J	0.114	4.99	0.0399	0.100	0.186	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	15.0	0.113	4.99	0.0399	0.100	1.50	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	4.04 J	0.118	4.99	0.0399	0.100	0.404	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	663	0.106	4.99	0.0399	0.0100	6.63	N/A	7016913
Octa CDD *	pg/g	6540 (1)	1.08	99.9	0.0799	0.000300	1.96	N/A	7016913
Total Tetra CDD *	pg/g	0.109 U	0.109	0.999	0.0399	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	1.05 J	0.114	4.99	0.0399	N/A	N/A	2	7016913
Total Hexa CDD *	pg/g	54.3	0.115	4.99	0.0399	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	1220	0.106	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.113 U	0.113	0.999	0.0399	0.100	0.0113	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.108 U	0.108	4.99	0.0399	0.0300	0.00324	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.101 U	0.101	4.99	0.0399	0.300	0.0303	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.48 J	0.112	4.99	0.0399	0.100	0.148	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.504 J	0.115	4.99	0.0399	0.100	0.0504	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.382 J	0.111	4.99	0.0399	0.100	0.0382	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.116 U	0.116	4.99	0.0399	0.100	0.0116	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	152	0.107	4.99	0.0399	0.0100	1.52	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	7.69	0.106	4.99	0.0399	0.0100	0.0769	N/A	7016913
Octa CDF **	pg/g	1210	0.113	9.99	0.0799	0.000300	0.363	N/A	7016913
Total Tetra CDF **	pg/g	0.113 U	0.113	0.999	0.0399	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	1.69 J	0.104	4.99	0.0399	N/A	N/A	3	7016913
Total Hexa CDF **	pg/g	104	0.114	4.99	0.0399	N/A	N/A	9	7016913
Total Hepta CDF **	pg/g	160	0.106	4.99	0.0399	N/A	N/A	2	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	13.7	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) from 10xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE871							
Sampling Date		2020/09/30 11:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-3U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	143 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 10xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE872							
Sampling Date		2020/09/30 12:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-4L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.111 U	0.111	0.999	0.0400	1.00	0.111	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.348 J	0.114	5.00	0.0400	1.00	0.348	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.718 J	0.107	5.00	0.0400	0.100	0.0718	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	6.04	0.107	5.00	0.0400	0.100	0.604	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	2.13 J	0.111	5.00	0.0400	0.100	0.213	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	242	0.113	5.00	0.0400	0.0100	2.42	N/A	7016913
Octa CDD *	pg/g	2710	0.102	9.99	0.0799	0.000300	0.813	N/A	7016913
Total Tetra CDD *	pg/g	0.130 U (1)	0.130	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	1.35 J	0.114	5.00	0.0400	N/A	N/A	4	7016913
Total Hexa CDD *	pg/g	26.2	0.108	5.00	0.0400	N/A	N/A	6	7016913
Total Hepta CDD *	pg/g	522	0.113	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.230 J	0.101	0.999	0.0400	0.100	0.0230	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.137 U (1)	0.137	5.00	0.0400	0.0300	0.00411	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.115 U (1)	0.115	5.00	0.0400	0.300	0.0345	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.27 J	0.107	5.00	0.0400	0.100	0.127	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.565 J	0.110	5.00	0.0400	0.100	0.0565	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.255 J	0.107	5.00	0.0400	0.100	0.0255	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.112 U	0.112	5.00	0.0400	0.100	0.0112	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	60.2	0.116	5.00	0.0400	0.0100	0.602	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	3.11 J	0.115	5.00	0.0400	0.0100	0.0311	N/A	7016913
Octa CDF **	pg/g	388	0.116	9.99	0.0799	0.000300	0.116	N/A	7016913
Total Tetra CDF **	pg/g	0.501 J	0.101	0.999	0.0400	N/A	N/A	3	7016913
Total Penta CDF **	pg/g	2.20 J	0.109	5.00	0.0400	N/A	N/A	3	7016913
Total Hexa CDF **	pg/g	49.3	0.109	5.00	0.0400	N/A	N/A	9	7016913
Total Hepta CDF **	pg/g	344	0.116	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	5.61	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE872							
Sampling Date		2020/09/30 12:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-4L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	125	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	148	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE873							
Sampling Date		2020/09/30 12:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-4U-OR	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.114 U	0.114	0.999	0.0399	1.00	0.114	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.279 J	0.105	4.99	0.0399	1.00	0.279	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.881 J	0.101	4.99	0.0399	0.100	0.0881	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	7.61	0.101	4.99	0.0399	0.100	0.761	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	2.02 J	0.105	4.99	0.0399	0.100	0.202	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	306	0.107	4.99	0.0399	0.0100	3.06	N/A	7016913
Octa CDD *	pg/g	3210	0.114	9.99	0.0799	0.000300	0.963	N/A	7016913
Total Tetra CDD *	pg/g	0.114 U	0.114	0.999	0.0399	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.279 J	0.105	4.99	0.0399	N/A	N/A	1	7016913
Total Hexa CDD *	pg/g	25.8	0.102	4.99	0.0399	N/A	N/A	5	7016913
Total Hepta CDD *	pg/g	610	0.107	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.105 J	0.104	0.999	0.0399	0.100	0.0105	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.120 U	0.120	4.99	0.0399	0.0300	0.00360	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.112 U (1)	0.112	4.99	0.0399	0.300	0.0336	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	2.33 J	0.0998	4.99	0.0399	0.100	0.233	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.602 J	0.103	4.99	0.0399	0.100	0.0602	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.174 J	0.0994	4.99	0.0399	0.100	0.0174	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.104 U	0.104	4.99	0.0399	0.100	0.0104	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	113	0.102	4.99	0.0399	0.0100	1.13	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	7.45	0.102	4.99	0.0399	0.0100	0.0745	N/A	7016913
Octa CDF **	pg/g	701	0.110	9.99	0.0799	0.000300	0.210	N/A	7016913
Total Tetra CDF **	pg/g	0.105 J	0.104	0.999	0.0399	N/A	N/A	1	7016913
Total Penta CDF **	pg/g	1.54 J	0.116	4.99	0.0399	N/A	N/A	2	7016913
Total Hexa CDF **	pg/g	79.2	0.101	4.99	0.0399	N/A	N/A	7	7016913
Total Hepta CDF **	pg/g	641	0.102	4.99	0.0399	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	7.25	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE873							
Sampling Date		2020/09/30 12:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-4U-OR	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	150	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE874							
Sampling Date		2020/09/30 00:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-2	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.113 U	0.113	0.999	0.0400	1.00	0.113	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.654 J	0.116	5.00	0.0400	1.00	0.654	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	2.23 J	0.111	5.00	0.0400	0.100	0.223	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	19.8	0.111	5.00	0.0400	0.100	1.98	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	5.07	0.116	5.00	0.0400	0.100	0.507	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	773	0.110	5.00	0.0400	0.0100	7.73	N/A	7016913
Octa CDD *	pg/g	8130 (1)	1.02	99.9	0.0800	0.000300	2.44	N/A	7016913
Total Tetra CDD *	pg/g	0.113 U	0.113	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.972 J	0.116	5.00	0.0400	N/A	N/A	2	7016913
Total Hexa CDD *	pg/g	62.9	0.112	5.00	0.0400	N/A	N/A	6	7016913
Total Hepta CDD *	pg/g	1400	0.110	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.104 U	0.104	0.999	0.0400	0.100	0.0104	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.110 U	0.110	5.00	0.0400	0.0300	0.00330	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.102 U	0.102	5.00	0.0400	0.300	0.0306	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.82 J	0.112	5.00	0.0400	0.100	0.182	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.538 U (2)	0.538	5.00	0.0400	0.100	0.0538	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.537 J	0.112	5.00	0.0400	0.100	0.0537	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.117 U	0.117	5.00	0.0400	0.100	0.0117	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	166	0.109	5.00	0.0400	0.0100	1.66	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	8.66	0.109	5.00	0.0400	0.0100	0.0866	N/A	7016913
Octa CDF **	pg/g	1380	0.115	9.99	0.0800	0.000300	0.414	N/A	7016913
Total Tetra CDF **	pg/g	0.104 U	0.104	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	1.94 J	0.106	5.00	0.0400	N/A	N/A	3	7016913
Total Hexa CDF **	pg/g	107	0.114	5.00	0.0400	N/A	N/A	7	7016913
Total Hepta CDF **	pg/g	180	0.109	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	16.2	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) from 10xdiln
(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE874							
Sampling Date		2020/09/30 00:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-2	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	128	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	157 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 10xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE875							
Sampling Date		2020/10/01 09:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-5L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	1.09	0.114	0.999	0.0400	1.00	1.09	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	9.68	0.112	4.99	0.0400	1.00	9.68	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	20.3	0.119	4.99	0.0400	0.100	2.03	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	106	0.118	4.99	0.0400	0.100	10.6	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	42.7	0.124	4.99	0.0400	0.100	4.27	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	5000 (1)	2.04	99.9	0.0400	0.0100	50.0	N/A	7015723
Octa CDD *	pg/g	69400 (1)	1.63	200	0.0799	0.000300	20.8	N/A	7015723
Total Tetra CDD *	pg/g	3.36	0.114	0.999	0.0400	N/A	N/A	8	7015723
Total Penta CDD *	pg/g	32.5	0.112	4.99	0.0400	N/A	N/A	11	7015723
Total Hexa CDD *	pg/g	485	0.120	4.99	0.0400	N/A	N/A	7	7015723
Total Hepta CDD *	pg/g	10200 (2)	2.04	99.9	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	0.890 J	0.122	0.999	0.0400	0.100	0.0890	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	1.38 J	0.120	4.99	0.0400	0.0300	0.0414	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	2.99 J	0.112	4.99	0.0400	0.300	0.897	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	54.5	0.103	4.99	0.0400	0.100	5.45	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	30.1	0.106	4.99	0.0400	0.100	3.01	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	5.99	0.103	4.99	0.0400	0.100	0.599	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	0.219 U (3)	0.219	4.99	0.0400	0.100	0.0219	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	1440	0.116	4.99	0.0400	0.0100	14.4	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	69.2	0.116	4.99	0.0400	0.0100	0.692	N/A	7015723
Octa CDF **	pg/g	10700 (1)	1.91	200	0.0799	0.000300	3.21	N/A	7015723
Total Tetra CDF **	pg/g	7.29	0.122	0.999	0.0400	N/A	N/A	11	7015723
Total Penta CDF **	pg/g	63.4	0.116	4.99	0.0400	N/A	N/A	10	7015723
Total Hexa CDF **	pg/g	1400	0.105	4.99	0.0400	N/A	N/A	9	7015723
Total Hepta CDF **	pg/g	1510	0.116	4.99	0.0400	N/A	N/A	2	7015723
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	127	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Results obtained from 20x dilution and RDL is adjusted accordingly

(2) Results obtained from 20x dilution

(3) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE875							
Sampling Date		2020/10/01 09:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-5L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDD *	%	74 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	86 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) Results obtained from 20x dilution

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE876							
Sampling Date		2020/10/01 10:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-5U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.529 J	0.101	0.998	0.0399	1.00	0.529	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	2.96 J	0.119	4.99	0.0399	1.00	2.96	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	5.91	0.106	4.99	0.0399	0.100	0.591	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	46.4	0.106	4.99	0.0399	0.100	4.64	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	14.4	0.111	4.99	0.0399	0.100	1.44	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1880	0.106	4.99	0.0399	0.0100	18.8	N/A	7016913
Octa CDD *	pg/g	22800 (1)	2.02	200	0.0799	0.000300	6.84	N/A	7016913
Total Tetra CDD *	pg/g	2.83	0.101	0.998	0.0399	N/A	N/A	8	7016913
Total Penta CDD *	pg/g	11.2	0.119	4.99	0.0399	N/A	N/A	9	7016913
Total Hexa CDD *	pg/g	197	0.107	4.99	0.0399	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	3760	0.106	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	1.13	0.119	0.998	0.0399	0.100	0.113	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.831 J	0.115	4.99	0.0399	0.0300	0.0249	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	1.07 J	0.108	4.99	0.0399	0.300	0.321	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	11.4	0.105	4.99	0.0399	0.100	1.14	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	4.00 J	0.108	4.99	0.0399	0.100	0.400	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	2.99 J	0.105	4.99	0.0399	0.100	0.299	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.172 J	0.109	4.99	0.0399	0.100	0.0172	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	600	0.110	4.99	0.0399	0.0100	6.00	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	26.6	0.110	4.99	0.0399	0.0100	0.266	N/A	7016913
Octa CDF **	pg/g	2760 U (2)	2760	9.98	0.0799	0.000300	0.828	N/A	7016913
Total Tetra CDF **	pg/g	9.14	0.119	0.998	0.0399	N/A	N/A	11	7016913
Total Penta CDF **	pg/g	35.2	0.111	4.99	0.0399	N/A	N/A	11	7016913
Total Hexa CDF **	pg/g	556	0.107	4.99	0.0399	N/A	N/A	10	7016913
Total Hepta CDF **	pg/g	626	0.110	4.99	0.0399	N/A	N/A	2	7016913
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.65 J	0.14	1.0	0.18	0.100	0.0650	N/A	7022840

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 20xdiln

(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE876							
Sampling Date		2020/10/01 10:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-5U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	45.2	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	133	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	131	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	134	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	126	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	149 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913
Confirmation C13-2378 TetraCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7022840

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan
(1) from 20xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE877							
Sampling Date		2020/10/01 11:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-6U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.112 U	0.112	0.999	0.0400	1.00	0.112	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.108 U	0.108	4.99	0.0400	1.00	0.108	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	1.06 J	0.105	4.99	0.0400	0.100	0.106	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	3.97 J	0.105	4.99	0.0400	0.100	0.397	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	1.24 J	0.109	4.99	0.0400	0.100	0.124	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	162	0.109	4.99	0.0400	0.0100	1.62	N/A	7016913
Octa CDD *	pg/g	2370	0.106	9.99	0.0799	0.000300	0.711	N/A	7016913
Total Tetra CDD *	pg/g	0.112 U	0.112	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	2.13 J	0.108	4.99	0.0400	N/A	N/A	1	7016913
Total Hexa CDD *	pg/g	17.5	0.106	4.99	0.0400	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	341	0.109	4.99	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.110 U	0.110	0.999	0.0400	0.100	0.0110	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.110 U	0.110	4.99	0.0400	0.0300	0.00330	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.102 U	0.102	4.99	0.0400	0.300	0.0306	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	0.627 U (1)	0.627	4.99	0.0400	0.100	0.0627	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.157 U (1)	0.157	4.99	0.0400	0.100	0.0157	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.178 J	0.114	4.99	0.0400	0.100	0.0178	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.119 U	0.119	4.99	0.0400	0.100	0.0119	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	70.3	0.213	4.99	0.0400	0.0100	0.703	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.94 J	0.212	4.99	0.0400	0.0100	0.0294	N/A	7016913
Octa CDF **	pg/g	384	0.108	9.99	0.0799	0.000300	0.115	N/A	7016913
Total Tetra CDF **	pg/g	0.110 U	0.110	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	0.609 J	0.106	4.99	0.0400	N/A	N/A	2	7016913
Total Hexa CDF **	pg/g	50.0	0.116	4.99	0.0400	N/A	N/A	5	7016913
Total Hepta CDF **	pg/g	382	0.212	4.99	0.0400	N/A	N/A	4	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	4.18	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE877							
Sampling Date		2020/10/01 11:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-6U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	126	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE878							
Sampling Date		2020/10/01 12:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-7L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.116 U	0.116	0.998	0.0399	1.00	0.116	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.119 U	0.119	4.99	0.0399	1.00	0.119	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.142 U (1)	0.142	4.99	0.0399	0.100	0.0142	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	5.80	0.118	4.99	0.0399	0.100	0.580	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	0.985 J	0.124	4.99	0.0399	0.100	0.0985	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	255	0.113	4.99	0.0399	0.0100	2.55	N/A	7016913
Octa CDD *	pg/g	3870	0.119	9.98	0.0799	0.000300	1.16	N/A	7016913
Total Tetra CDD *	pg/g	0.116 U	0.116	0.998	0.0399	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.119 U	0.119	4.99	0.0399	N/A	N/A	0	7016913
Total Hexa CDD *	pg/g	20.4	0.120	4.99	0.0399	N/A	N/A	5	7016913
Total Hepta CDD *	pg/g	594	0.113	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.108 U	0.108	0.998	0.0399	0.100	0.0108	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.122 U	0.122	4.99	0.0399	0.0300	0.00366	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.113 U	0.113	4.99	0.0399	0.300	0.0339	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.30 J	0.104	4.99	0.0399	0.100	0.130	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.232 U (1)	0.232	4.99	0.0399	0.100	0.0232	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.135 U (1)	0.135	4.99	0.0399	0.100	0.0135	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.109 U	0.109	4.99	0.0399	0.100	0.0109	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	103	0.117	4.99	0.0399	0.0100	1.03	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	3.98 J	0.116	4.99	0.0399	0.0100	0.0398	N/A	7016913
Octa CDF **	pg/g	606	0.107	9.98	0.0799	0.000300	0.182	N/A	7016913
Total Tetra CDF **	pg/g	0.108 U	0.108	0.998	0.0399	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	1.25 J	0.117	4.99	0.0399	N/A	N/A	2	7016913
Total Hexa CDF **	pg/g	83.2	0.106	4.99	0.0399	N/A	N/A	5	7016913
Total Hepta CDF **	pg/g	581	0.116	4.99	0.0399	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	6.12	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE878							
Sampling Date		2020/10/01 12:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-7L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE879							
Sampling Date		2020/10/01 13:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-7U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.108 U	0.108	1.00	0.0400	1.00	0.108	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.107 U	0.107	5.00	0.0400	1.00	0.107	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.126 U (1)	0.126	5.00	0.0400	0.100	0.0126	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	0.665 J	0.116	5.00	0.0400	0.100	0.0665	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	0.193 U (1)	0.193	5.00	0.0400	0.100	0.0193	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	26.6	0.107	5.00	0.0400	0.0100	0.266	N/A	7016913
Octa CDD *	pg/g	327	0.112	10.0	0.0800	0.000300	0.0981	N/A	7016913
Total Tetra CDD *	pg/g	0.108 U	0.108	1.00	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.107 U	0.107	5.00	0.0400	N/A	N/A	0	7016913
Total Hexa CDD *	pg/g	2.37 J	0.117	5.00	0.0400	N/A	N/A	3	7016913
Total Hepta CDD *	pg/g	57.2	0.107	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.107 U	0.107	1.00	0.0400	0.100	0.0107	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.123 U	0.123	5.00	0.0400	0.0300	0.00369	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.115 U	0.115	5.00	0.0400	0.300	0.0345	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	0.113 U	0.113	5.00	0.0400	0.100	0.0113	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.116 U	0.116	5.00	0.0400	0.100	0.0116	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.113 U	0.113	5.00	0.0400	0.100	0.0113	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.118 U	0.118	5.00	0.0400	0.100	0.0118	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	9.47	0.114	5.00	0.0400	0.0100	0.0947	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.363 U (1)	0.363	5.00	0.0400	0.0100	0.00363	N/A	7016913
Octa CDF **	pg/g	56.8	0.103	10.0	0.0800	0.000300	0.0170	N/A	7016913
Total Tetra CDF **	pg/g	0.107 U	0.107	1.00	0.0400	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	0.119 U	0.119	5.00	0.0400	N/A	N/A	0	7016913
Total Hexa CDF **	pg/g	7.11	0.115	5.00	0.0400	N/A	N/A	2	7016913
Total Hepta CDF **	pg/g	54.3	0.114	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.888	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE879							
Sampling Date		2020/10/01 13:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-7U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	55	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	47	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	61	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	53	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	51	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	56	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	62	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE879							
Sampling Date		2020/10/01 13:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-7U Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.111 U	0.111	1.00	0.0400	1.00	0.111	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.117 U	0.117	5.00	0.0400	1.00	0.117	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.163 J	0.109	5.00	0.0400	0.100	0.0163	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	0.699 J	0.109	5.00	0.0400	0.100	0.0699	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	0.267 U (1)	0.267	5.00	0.0400	0.100	0.0267	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	23.8	0.109	5.00	0.0400	0.0100	0.238	N/A	7016913
Octa CDD *	pg/g	317	0.107	10.0	0.0800	0.000300	0.0951	N/A	7016913
Total Tetra CDD *	pg/g	0.111 U	0.111	1.00	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.117 U	0.117	5.00	0.0400	N/A	N/A	0	7016913
Total Hexa CDD *	pg/g	2.68 J	0.110	5.00	0.0400	N/A	N/A	5	7016913
Total Hepta CDD *	pg/g	50.5	0.109	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.107 U	0.107	1.00	0.0400	0.100	0.0107	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.116 U	0.116	5.00	0.0400	0.0300	0.00348	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.108 U	0.108	5.00	0.0400	0.300	0.0324	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	0.164 J	0.113	5.00	0.0400	0.100	0.0164	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.120 U (1)	0.120	5.00	0.0400	0.100	0.0120	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.113 U	0.113	5.00	0.0400	0.100	0.0113	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.117 U	0.117	5.00	0.0400	0.100	0.0117	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	8.38	0.112	5.00	0.0400	0.0100	0.0838	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.612 J	0.112	5.00	0.0400	0.0100	0.00612	N/A	7016913
Octa CDF **	pg/g	52.1	0.111	10.0	0.0800	0.000300	0.0156	N/A	7016913
Total Tetra CDF **	pg/g	0.107 U	0.107	1.00	0.0400	N/A	N/A	0	7016913
Total Penta CDF **	pg/g	0.112 U	0.112	5.00	0.0400	N/A	N/A	0	7016913
Total Hexa CDF **	pg/g	7.15	0.115	5.00	0.0400	N/A	N/A	3	7016913
Total Hepta CDF **	pg/g	48.1	0.112	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.878	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE879							
Sampling Date		2020/10/01 13:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-7U Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE880							
Sampling Date		2020/10/01 14:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-8L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.112 U	0.112	1.00	0.0400	1.00	0.112	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.109 U	0.109	5.00	0.0400	1.00	0.109	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.155 J	0.105	5.00	0.0400	0.100	0.0155	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	0.669 U (1)	0.669	5.00	0.0400	0.100	0.0669	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	0.525 J	0.110	5.00	0.0400	0.100	0.0525	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	24.5	0.113	5.00	0.0400	0.0100	0.245	N/A	7016913
Octa CDD *	pg/g	342	0.117	10.0	0.0800	0.000300	0.103	N/A	7016913
Total Tetra CDD *	pg/g	0.234 J	0.112	1.00	0.0400	N/A	N/A	1	7016913
Total Penta CDD *	pg/g	0.365 J	0.109	5.00	0.0400	N/A	N/A	2	7016913
Total Hexa CDD *	pg/g	3.38 J	0.106	5.00	0.0400	N/A	N/A	4	7016913
Total Hepta CDD *	pg/g	48.7	0.113	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.189 J	0.119	1.00	0.0400	0.100	0.0189	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.178 U (2)	0.178	5.00	0.0400	0.0300	0.00534	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.108 U	0.108	5.00	0.0400	0.300	0.0324	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	0.706 J	0.110	5.00	0.0400	0.100	0.0706	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.198 U (1)	0.198	5.00	0.0400	0.100	0.0198	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.160 J	0.109	5.00	0.0400	0.100	0.0160	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.114 U	0.114	5.00	0.0400	0.100	0.0114	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	6.97	0.116	5.00	0.0400	0.0100	0.0697	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.578 J	0.116	5.00	0.0400	0.0100	0.00578	N/A	7016913
Octa CDF **	pg/g	40.7	0.114	10.0	0.0800	0.000300	0.0122	N/A	7016913
Total Tetra CDF **	pg/g	0.189 J	0.119	1.00	0.0400	N/A	N/A	1	7016913
Total Penta CDF **	pg/g	0.178 J	0.112	5.00	0.0400	N/A	N/A	1	7016913
Total Hexa CDF **	pg/g	5.28	0.111	5.00	0.0400	N/A	N/A	4	7016913
Total Hepta CDF **	pg/g	32.1	0.116	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.966	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE880							
Sampling Date		2020/10/01 14:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-8L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE881							
Sampling Date		2020/10/01 14:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-8U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.103 U	0.103	0.999	0.0400	1.00	0.103	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.223 U (1)	0.223	5.00	0.0400	1.00	0.223	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.561 J	0.114	5.00	0.0400	0.100	0.0561	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	8.24	0.114	5.00	0.0400	0.100	0.824	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	2.21 J	0.119	5.00	0.0400	0.100	0.221	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	356	0.108	5.00	0.0400	0.0100	3.56	N/A	7016913
Octa CDD *	pg/g	6930 (2)	2.09	200	0.0800	0.000300	2.08	N/A	7016913
Total Tetra CDD *	pg/g	0.137 J	0.103	0.999	0.0400	N/A	N/A	1	7016913
Total Penta CDD *	pg/g	0.519 U (1)	0.519	5.00	0.0400	N/A	N/A	0	7016913
Total Hexa CDD *	pg/g	34.5	0.115	5.00	0.0400	N/A	N/A	6	7016913
Total Hepta CDD *	pg/g	700	0.108	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.301 J	0.119	0.999	0.0400	0.100	0.0301	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.175 U (1)	0.175	5.00	0.0400	0.0300	0.00525	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.200 J	0.0987	5.00	0.0400	0.300	0.0600	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.41 J	0.104	5.00	0.0400	0.100	0.141	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.517 J	0.107	5.00	0.0400	0.100	0.0517	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.557 J	0.104	5.00	0.0400	0.100	0.0557	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.108 U	0.108	5.00	0.0400	0.100	0.0108	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	87.9	0.103	5.00	0.0400	0.0100	0.879	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	4.99 J	0.103	5.00	0.0400	0.0100	0.0499	N/A	7016913
Octa CDF **	pg/g	641	0.105	9.99	0.0800	0.000300	0.192	N/A	7016913
Total Tetra CDF **	pg/g	0.758 J	0.119	0.999	0.0400	N/A	N/A	3	7016913
Total Penta CDF **	pg/g	3.94 J	0.102	5.00	0.0400	N/A	N/A	3	7016913
Total Hexa CDF **	pg/g	69.4	0.106	5.00	0.0400	N/A	N/A	8	7016913
Total Hepta CDF **	pg/g	494	0.103	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	8.54	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) ** From 20X Dilution **

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE881							
Sampling Date		2020/10/01 14:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-8U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	133	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	120 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) ** From 20X Dilution **

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE882							
Sampling Date		2020/10/02 09:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-9L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.106 U	0.106	0.998	0.0399	1.00	0.106	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.264 J	0.116	4.99	0.0399	1.00	0.264	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.368 J	0.117	4.99	0.0399	0.100	0.0368	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	2.35 J	0.117	4.99	0.0399	0.100	0.235	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	1.06 J	0.122	4.99	0.0399	0.100	0.106	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	59.6	0.110	4.99	0.0399	0.0100	0.596	N/A	7016913
Octa CDD *	pg/g	557	0.122	9.98	0.0798	0.000300	0.167	N/A	7016913
Total Tetra CDD *	pg/g	0.106 U	0.106	0.998	0.0399	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	1.08 J	0.116	4.99	0.0399	N/A	N/A	5	7016913
Total Hexa CDD *	pg/g	10.9	0.118	4.99	0.0399	N/A	N/A	5	7016913
Total Hepta CDD *	pg/g	119	0.110	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.156 J	0.108	0.998	0.0399	0.100	0.0156	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.176 J	0.126	4.99	0.0399	0.0300	0.00528	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.193 J	0.117	4.99	0.0399	0.300	0.0579	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.16 J	0.103	4.99	0.0399	0.100	0.116	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.306 J	0.106	4.99	0.0399	0.100	0.0306	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.553 J (1)	0.103	4.99	0.0399	0.100	0.0553	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.107 U	0.107	4.99	0.0399	0.100	0.0107	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	11.8	0.113	4.99	0.0399	0.0100	0.118	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.763 J	0.113	4.99	0.0399	0.0100	0.00763	N/A	7016913
Octa CDF **	pg/g	46.6	0.116	9.98	0.0798	0.000300	0.0140	N/A	7016913
Total Tetra CDF **	pg/g	0.514 J	0.108	0.998	0.0399	N/A	N/A	3	7016913
Total Penta CDF **	pg/g	4.22 J	0.122	4.99	0.0399	N/A	N/A	7	7016913
Total Hexa CDF **	pg/g	15.9	0.105	4.99	0.0399	N/A	N/A	8	7016913
Total Hepta CDF **	pg/g	49.1	0.113	4.99	0.0399	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.94	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / Merged Peak

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE882							
Sampling Date		2020/10/02 09:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-9L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE883							
Sampling Date		2020/10/02 10:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-9U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.117 U	0.117	0.999	0.0400	1.00	0.117	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	0.285 U (1)	0.285	5.00	0.0400	1.00	0.285	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	0.387 J	0.104	5.00	0.0400	0.100	0.0387	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	2.05 J	0.104	5.00	0.0400	0.100	0.205	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	1.02 J	0.108	5.00	0.0400	0.100	0.102	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	79.4	0.103	5.00	0.0400	0.0100	0.794	N/A	7015723
Octa CDD *	pg/g	846	0.0955	9.99	0.0799	0.000300	0.254	N/A	7015723
Total Tetra CDD *	pg/g	0.141 J	0.117	0.999	0.0400	N/A	N/A	1	7015723
Total Penta CDD *	pg/g	0.432 J	0.112	5.00	0.0400	N/A	N/A	2	7015723
Total Hexa CDD *	pg/g	11.4	0.105	5.00	0.0400	N/A	N/A	5	7015723
Total Hepta CDD *	pg/g	153	0.103	5.00	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	0.281 J	0.103	0.999	0.0400	0.100	0.0281	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	0.245 U (2)	0.245	5.00	0.0400	0.0300	0.00735	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	0.233 J	0.115	5.00	0.0400	0.300	0.0699	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	1.21 J	0.102	5.00	0.0400	0.100	0.121	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	0.402 J	0.105	5.00	0.0400	0.100	0.0402	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	0.279 J	0.102	5.00	0.0400	0.100	0.0279	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	0.106 U	0.106	5.00	0.0400	0.100	0.0106	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	15.4 U (3)	15.4	5.00	0.0400	0.0100	0.154	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.790 J	0.121	5.00	0.0400	0.0100	0.00790	N/A	7015723
Octa CDF **	pg/g	60.4	0.102	9.99	0.0799	0.000300	0.0181	N/A	7015723
Total Tetra CDF **	pg/g	0.830 J	0.103	0.999	0.0400	N/A	N/A	4	7015723
Total Penta CDF **	pg/g	4.05 J	0.119	5.00	0.0400	N/A	N/A	7	7015723
Total Hexa CDF **	pg/g	17.7	0.104	5.00	0.0400	N/A	N/A	8	7015723
Total Hepta CDF **	pg/g	51.2	0.121	5.00	0.0400	N/A	N/A	2	7015723

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) RT > 3 seconds - PCDD/DF analysis - Peak detected exceeds expected retention time (from internal standard) by greater than 3 seconds.

(3) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE883							
Sampling Date		2020/10/02 10:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-9U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	2.28	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	133	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE884							
Sampling Date		2020/10/02 11:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-10L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.155 U (1)	0.155	0.999	0.0400	1.00	0.155	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	1.90 J	0.120	5.00	0.0400	1.00	1.90	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	3.17 J	0.110	5.00	0.0400	0.100	0.317	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	28.1	0.110	5.00	0.0400	0.100	2.81	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	8.04	0.115	5.00	0.0400	0.100	0.804	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1140	0.108	5.00	0.0400	0.0100	11.4	N/A	7016913
Octa CDD *	pg/g	13200 (2)	3.86	200	0.0799	0.000300	3.96	N/A	7016913
Total Tetra CDD *	pg/g	0.155 U (1)	0.155	0.999	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	5.93	0.120	5.00	0.0400	N/A	N/A	7	7016913
Total Hexa CDD *	pg/g	101	0.111	5.00	0.0400	N/A	N/A	5	7016913
Total Hepta CDD *	pg/g	2040	0.108	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.109 U	0.109	0.999	0.0400	0.100	0.0109	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.108 U	0.108	5.00	0.0400	0.0300	0.00324	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.244 J	0.101	5.00	0.0400	0.300	0.0732	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	3.02 J	0.115	5.00	0.0400	0.100	0.302	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.846 J	0.118	5.00	0.0400	0.100	0.0846	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.823 J	0.115	5.00	0.0400	0.100	0.0823	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.120 U	0.120	5.00	0.0400	0.100	0.0120	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	269	0.110	5.00	0.0400	0.0100	2.69	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	12.5	0.109	5.00	0.0400	0.0100	0.125	N/A	7016913
Octa CDF **	pg/g	2270	0.109	9.99	0.0799	0.000300	0.681	N/A	7016913
Total Tetra CDF **	pg/g	0.177 J	0.109	0.999	0.0400	N/A	N/A	1	7016913
Total Penta CDF **	pg/g	6.42	0.104	5.00	0.0400	N/A	N/A	5	7016913
Total Hexa CDF **	pg/g	188	0.117	5.00	0.0400	N/A	N/A	7	7016913
Total Hepta CDF **	pg/g	281	0.109	5.00	0.0400	N/A	N/A	2	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	25.4	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) ** From 20X Dilution **

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE884							
Sampling Date		2020/10/02 11:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-10L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	73	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	87 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) ** From 20X Dilution **

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE885							
Sampling Date		2020/10/02 11:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-10U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.157 J	0.106	0.999	0.0400	1.00	0.157	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.816 U (1)	0.816	5.00	0.0400	1.00	0.816	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	2.51 J	0.111	5.00	0.0400	0.100	0.251	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	52.7	0.110	5.00	0.0400	0.100	5.27	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	9.54	0.115	5.00	0.0400	0.100	0.954	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	2060 (2)	2.09	99.9	0.0400	0.0100	20.6	N/A	7016913
Octa CDD *	pg/g	27700 (2)	2.05	200	0.0799	0.000300	8.31	N/A	7016913
Total Tetra CDD *	pg/g	0.443 J	0.106	0.999	0.0400	N/A	N/A	2	7016913
Total Penta CDD *	pg/g	1.71 J	0.112	5.00	0.0400	N/A	N/A	4	7016913
Total Hexa CDD *	pg/g	194	0.111	5.00	0.0400	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	4200 (2)	2.09	99.9	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.716 J	0.112	0.999	0.0400	0.100	0.0716	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.486 J	0.118	5.00	0.0400	0.0300	0.0146	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.593 U (1)	0.593	5.00	0.0400	0.300	0.178	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	5.96	0.108	5.00	0.0400	0.100	0.596	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	1.88 J	0.111	5.00	0.0400	0.100	0.188	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	1.17 J	0.107	5.00	0.0400	0.100	0.117	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.112 U	0.112	5.00	0.0400	0.100	0.0112	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	531	0.116	5.00	0.0400	0.0100	5.31	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	20.9	0.115	5.00	0.0400	0.0100	0.209	N/A	7016913
Octa CDF **	pg/g	4220 (2)	2.02	200	0.0799	0.000300	1.27	N/A	7016913
Total Tetra CDF **	pg/g	2.46	0.112	0.999	0.0400	N/A	N/A	5	7016913
Total Penta CDF **	pg/g	19.1	0.114	5.00	0.0400	N/A	N/A	5	7016913
Total Hexa CDF **	pg/g	432	0.109	5.00	0.0400	N/A	N/A	10	7016913
Total Hepta CDF **	pg/g	3330	0.116	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	44.3	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) ** From 20X Dilution **

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE885							
Sampling Date		2020/10/02 11:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-10U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	80 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	101 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) ** From 20X Dilution **

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE886							
Sampling Date		2020/10/02 12:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-11L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	9.87	0.113	1.00	0.0400	1.00	9.87	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	86.3	0.114	5.00	0.0400	1.00	86.3	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	191	0.117	5.00	0.0400	0.100	19.1	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	841	0.116	5.00	0.0400	0.100	84.1	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	357	0.121	5.00	0.0400	0.100	35.7	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	34900 (1)	2.09	100	0.0400	0.0100	349	N/A	7016913
Octa CDD *	pg/g	126000 (2)	2.00	200	0.0800	0.000300	37.8	N/A	7016913
Total Tetra CDD *	pg/g	18.9	0.113	1.00	0.0400	N/A	N/A	8	7016913
Total Penta CDD *	pg/g	237	0.114	5.00	0.0400	N/A	N/A	11	7016913
Total Hexa CDD *	pg/g	3850	0.118	5.00	0.0400	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	67900	2.09	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	2.85	0.110	1.00	0.0400	0.100	0.285	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	9.37	0.410	5.00	0.0400	0.0300	0.281	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	34.1	0.382	5.00	0.0400	0.300	10.2	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	252	0.105	5.00	0.0400	0.100	25.2	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	70.7	0.108	5.00	0.0400	0.100	7.07	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	42.7	0.104	5.00	0.0400	0.100	4.27	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	1.21 U (3)	1.21	100	0.0400	0.100	0.121	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	8270	0.248	5.00	0.0400	0.0100	82.7	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	366	0.247	5.00	0.0400	0.0100	3.66	N/A	7016913
Octa CDF **	pg/g	64400 U (4)	64400	200	0.0800	0.000300	19.3	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 20xdiln

(2) from 20xdiln

EMCL - PCDD/DF analysis - Exceeds Maximum Calibration Limit

(3) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(4) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

from 20xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE886							
Sampling Date		2020/10/02 12:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-11L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total Tetra CDF **	pg/g	18.1	0.110	1.00	0.0400	N/A	N/A	12	7016913
Total Penta CDF **	pg/g	553	0.395	5.00	0.0400	N/A	N/A	10	7016913
Total Hexa CDF **	pg/g	7010	0.106	5.00	0.0400	N/A	N/A	10	7016913
Total Hepta CDF **	pg/g	8640	0.247	5.00	0.0400	N/A	N/A	2	7016913
Confirmation 2,3,7,8-Tetra CDF **	pg/g	2.78	0.13	1.0	0.18	0.100	0.278	N/A	7050334
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	775	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	116 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	111 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913
Confirmation C13-2378 TetraCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7050334

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

N/A = Not Applicable

* CDD = Chloro Dibenzo-p-Dioxin

(1) from 20xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE887							
Sampling Date		2020/10/02 12:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-11U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.144 J	0.106	0.998	0.0399	1.00	0.144	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.815 J	0.125	4.99	0.0399	1.00	0.815	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	2.03 J	0.108	4.99	0.0399	0.100	0.203	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	21.2	0.109	4.99	0.0399	0.100	2.12	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	8.60	0.115	4.99	0.0399	0.100	0.860	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	981	0.104	4.99	0.0399	0.0100	9.81	N/A	7016913
Octa CDD *	pg/g	9670 (1)	2.11	200	0.0799	0.000300	2.90	N/A	7016913
Total Tetra CDD *	pg/g	0.144 J	0.106	0.998	0.0399	N/A	N/A	1	7016913
Total Penta CDD *	pg/g	2.89 J	0.125	4.99	0.0399	N/A	N/A	8	7016913
Total Hexa CDD *	pg/g	124	0.112	4.99	0.0399	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	2120	0.104	4.99	0.0399	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.241 J	0.128	0.998	0.0399	0.100	0.0241	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.226 U (2)	0.226	4.99	0.0399	0.0300	0.00678	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.311 J	0.109	4.99	0.0399	0.300	0.0933	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	2.65 J	0.117	4.99	0.0399	0.100	0.265	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.890 J	0.120	4.99	0.0399	0.100	0.0890	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.620 J	0.114	4.99	0.0399	0.100	0.0620	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.122 U	0.122	4.99	0.0399	0.100	0.0122	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	183	0.108	4.99	0.0399	0.0100	1.83	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	7.00	0.104	4.99	0.0399	0.0100	0.0700	N/A	7016913
Octa CDF **	pg/g	1320	0.135	9.98	0.0799	0.000300	0.396	N/A	7016913
Total Tetra CDF **	pg/g	0.526 J	0.128	0.998	0.0399	N/A	N/A	2	7016913
Total Penta CDF **	pg/g	5.44	0.114	4.99	0.0399	N/A	N/A	5	7016913
Total Hexa CDF **	pg/g	138	0.118	4.99	0.0399	N/A	N/A	9	7016913
Total Hepta CDF **	pg/g	1060	0.106	4.99	0.0399	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	19.7	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) Results obtained from 20x dilution and RDL is raised accordingly
(2) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE887							
Sampling Date		2020/10/02 12:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-11U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	138 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Results obtained from 20x dilution

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE888							
Sampling Date		2020/10/02 00:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-3	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.110 U	0.110	1.00	0.0400	1.00	0.110	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	0.209 J	0.114	5.00	0.0400	1.00	0.209	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	0.369 J	0.120	5.00	0.0400	0.100	0.0369	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	2.37 J	0.121	5.00	0.0400	0.100	0.237	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	1.36 J	0.128	5.00	0.0400	0.100	0.136	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	73.3	0.126	5.00	0.0400	0.0100	0.733	N/A	7016913
Octa CDD *	pg/g	832	0.120	10.0	0.0800	0.000300	0.250	N/A	7016913
Total Tetra CDD *	pg/g	0.110 U	0.110	1.00	0.0400	N/A	N/A	0	7016913
Total Penta CDD *	pg/g	0.209 J	0.114	5.00	0.0400	N/A	N/A	1	7016913
Total Hexa CDD *	pg/g	11.4	0.125	5.00	0.0400	N/A	N/A	6	7016913
Total Hepta CDD *	pg/g	142	0.126	5.00	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	0.119 U	0.119	1.00	0.0400	0.100	0.0119	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	0.197 J	0.124	5.00	0.0400	0.0300	0.00591	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	0.237 J	0.113	5.00	0.0400	0.300	0.0711	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	1.25 J	0.117	5.00	0.0400	0.100	0.125	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	0.336 J	0.120	5.00	0.0400	0.100	0.0336	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	0.275 J	0.113	5.00	0.0400	0.100	0.0275	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	0.121 U	0.121	5.00	0.0400	0.100	0.0121	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	13.8	0.105	5.00	0.0400	0.0100	0.138	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.801 J	0.102	5.00	0.0400	0.0100	0.00801	N/A	7016913
Octa CDF **	pg/g	74.3	0.0988	10.0	0.0800	0.000300	0.0223	N/A	7016913
Total Tetra CDF **	pg/g	0.174 J	0.119	1.00	0.0400	N/A	N/A	1	7016913
Total Penta CDF **	pg/g	3.89 J	0.118	5.00	0.0400	N/A	N/A	7	7016913
Total Hexa CDF **	pg/g	14.6	0.118	5.00	0.0400	N/A	N/A	8	7016913
Total Hepta CDF **	pg/g	56.5	0.103	5.00	0.0400	N/A	N/A	3	7016913
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	2.17	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVE888							
Sampling Date		2020/10/02 00:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-3	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
** CDF = Chloro Dibenzo-p-Furan
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE868
Sample ID: T4RB-2L
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/30	Angel Guerrero
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE868 Dup
Sample ID: T4RB-2L
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE869
Sample ID: T4RB-2U
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/25	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE870
Sample ID: T4RB-3L
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/25	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE871
Sample ID: T4RB-3U
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/25	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE872
Sample ID: T4RB-4L
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/25	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE873
Sample ID: T4RB-4U-OR
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/25	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE874
Sample ID: DUP-2
Matrix: Soil

Collected: 2020/09/30
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE875
Sample ID: T4RB-5L
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/30	Angel Guerrero
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE876
Sample ID: T4RB-5U
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7022840	2020/10/16	2020/10/27	Angel Guerrero
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE877
Sample ID: T4RB-6U
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE878
Sample ID: T4RB-7L
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE879
Sample ID: T4RB-7U
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE879 Dup
Sample ID: T4RB-7U
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby

BV Labs ID: NVE880
Sample ID: T4RB-8L
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE881
Sample ID: T4RB-8U
Matrix: Soil

Collected: 2020/10/01
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE882
Sample ID: T4RB-9L
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/28	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE883
Sample ID: T4RB-9U
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/30	Angel Guerrero
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVE884
Sample ID: T4RB-10L
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE885
Sample ID: T4RB-10U
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE886
Sample ID: T4RB-11L
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/26	Owen Cosby
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7050334	2020/10/16	2020/11/10	Angel Guerrero
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE887
Sample ID: T4RB-11U
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/11/03	Owen Cosby
Moisture	BAL	7002094	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NVE888
Sample ID: DUP-3
Matrix: Soil

Collected: 2020/10/02
Shipped:
Received: 2020/10/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/11/03	Owen Cosby
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.6°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7002094	MYG	RPD - Sample/Sample Dup	Moisture	2020/10/15	3.0		%	20
7002150	MYG	RPD - Sample/Sample Dup	Moisture	2020/10/15	4.0		%	20
7015723	AGU	Matrix Spike	37CL4 2378 Tetra CDD	2020/10/28		107	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/28		92	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/28		86	%	28 - 143
			C13-123478 HexaCDD	2020/10/28		91	%	32 - 141
			C13-123478 HexaCDF	2020/10/28		87	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/28		100	%	26 - 138
			C13-123678 HexaCDD	2020/10/28		110	%	28 - 130
			C13-123678 HexaCDF	2020/10/28		83	%	26 - 123
			C13-12378 PentaCDD	2020/10/28		100	%	25 - 181
			C13-12378 PentaCDF	2020/10/28		87	%	24 - 185
			C13-123789 HexaCDF	2020/10/28		113	%	29 - 147
			C13-234678 HexaCDF	2020/10/28		88	%	28 - 136
			C13-23478 PentaCDF	2020/10/28		102	%	21 - 178
			C13-2378 TetraCDD	2020/10/28		97	%	25 - 164
			C13-2378 TetraCDF	2020/10/28		96	%	24 - 169
			C13-OCDD	2020/10/28		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/28		105	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/28		104	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/28		103	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/28		101	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/28		103	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/28		107	%	70 - 140
			Octa CDD	2020/10/28		135	%	78 - 144
			Total Tetra CDD	2020/10/28		21	%	N/A
			Total Penta CDD	2020/10/28		104	%	N/A
			Total Hexa CDD	2020/10/28		308	%	N/A
			Total Hepta CDD	2020/10/28		133	%	N/A
			2,3,7,8-Tetra CDF	2020/10/28		105	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/28		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/28		98	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/28		103	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/28		112	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/28		105	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/28		104	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/28		97	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/28		109	%	78 - 138
			Octa CDF	2020/10/28		97	%	63 - 170
			Total Tetra CDF	2020/10/28		21	%	N/A
			Total Penta CDF	2020/10/28		206	%	N/A
			Total Hexa CDF	2020/10/28		426	%	N/A
			Total Hepta CDF	2020/10/28		214	%	N/A
7015723	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/10/28		93	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/28		94	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/28		84	%	28 - 143
			C13-123478 HexaCDD	2020/10/28		89	%	32 - 141
			C13-123478 HexaCDF	2020/10/28		86	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/28		95	%	26 - 138
			C13-123678 HexaCDD	2020/10/28		102	%	28 - 130
			C13-123678 HexaCDF	2020/10/28		93	%	26 - 123
			C13-12378 PentaCDD	2020/10/28		95	%	25 - 181
			C13-12378 PentaCDF	2020/10/28		85	%	24 - 185

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-123789 HexaCDF	2020/10/28		110	%	29 - 147
			C13-234678 HexaCDF	2020/10/28		86	%	28 - 136
			C13-23478 PentaCDF	2020/10/28		98	%	21 - 178
			C13-2378 TetraCDD	2020/10/28		90	%	25 - 164
			C13-2378 TetraCDF	2020/10/28		95	%	24 - 169
			C13-OCDD	2020/10/28		109	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/28		104	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/28		104	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/28		105	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/28		100	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/28		105	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/28		97	%	70 - 140
			Octa CDD	2020/10/28		97	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/28		100	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/28		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/28		104	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/28		99	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/28		92	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/28		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/28		93	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/28		100	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/28		110	%	78 - 138
			Octa CDF	2020/10/28		97	%	63 - 170
7015723	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/10/29		101	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/29		91	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/29		86	%	28 - 143
			C13-123478 HexaCDD	2020/10/29		94	%	32 - 141
			C13-123478 HexaCDF	2020/10/29		88	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/29		93	%	26 - 138
			C13-123678 HexaCDD	2020/10/29		106	%	28 - 130
			C13-123678 HexaCDF	2020/10/29		86	%	26 - 123
			C13-12378 PentaCDD	2020/10/29		98	%	25 - 181
			C13-12378 PentaCDF	2020/10/29		86	%	24 - 185
			C13-123789 HexaCDF	2020/10/29		114	%	29 - 147
			C13-234678 HexaCDF	2020/10/29		89	%	28 - 136
			C13-23478 PentaCDF	2020/10/29		100	%	21 - 178
			C13-2378 TetraCDD	2020/10/29		99	%	25 - 164
			C13-2378 TetraCDF	2020/10/29		100	%	24 - 169
			C13-OCDD	2020/10/29		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/29	0.147 U, EDL=0.147		pg/g	
			1,2,3,7,8-Penta CDD	2020/10/29	0.146 U, EDL=0.146		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/10/29	0.177 U, EDL=0.177		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/10/29	0.176 U, EDL=0.176		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/10/29	0.184 U, EDL=0.184		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/10/29	0.143 U, EDL=0.143		pg/g	
			Octa CDD	2020/10/29	0.791 J, EDL=0.147		pg/g	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Tetra CDD	2020/10/29	0.147 U, EDL=0.147		pg/g	
			Total Penta CDD	2020/10/29	0.146 U, EDL=0.146		pg/g	
			Total Hexa CDD	2020/10/29	0.178 U, EDL=0.178		pg/g	
			Total Hepta CDD	2020/10/29	0.143 U, EDL=0.143		pg/g	
			2,3,7,8-Tetra CDF	2020/10/29	0.116 U, EDL=0.116		pg/g	
			1,2,3,7,8-Penta CDF	2020/10/29	0.147 U, EDL=0.147		pg/g	
			2,3,4,7,8-Penta CDF	2020/10/29	0.137 U, EDL=0.137		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/10/29	0.102 U, EDL=0.102		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/10/29	0.105 U, EDL=0.105		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/10/29	0.102 U, EDL=0.102		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/10/29	0.106 U, EDL=0.106		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/10/29	0.116 U, EDL=0.116		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/10/29	0.115 U, EDL=0.115		pg/g	
			Octa CDF	2020/10/29	0.142 U, EDL=0.142		pg/g	
			Total Tetra CDF	2020/10/29	0.116 U, EDL=0.116		pg/g	
			Total Penta CDF	2020/10/29	0.141 U, EDL=0.141		pg/g	
			Total Hexa CDF	2020/10/29	0.104 U, EDL=0.104		pg/g	
			Total Hepta CDF	2020/10/29	0.115 U, EDL=0.115		pg/g	
7015723	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/10/31	NC		%	25
			1,2,3,7,8-Penta CDD	2020/10/31	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/10/31	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/10/31	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/10/31	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/10/31	9.1		%	25
			Octa CDD	2020/10/31	11		%	25
			Total Tetra CDD	2020/10/31	NC		%	25
			Total Penta CDD	2020/10/31	NC		%	25
			Total Hexa CDD	2020/10/31	NC		%	25
			Total Hepta CDD	2020/10/31	8.2		%	25
			2,3,7,8-Tetra CDF	2020/10/31	NC		%	25
			1,2,3,7,8-Penta CDF	2020/10/31	NC		%	25
			2,3,4,7,8-Penta CDF	2020/10/31	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/10/31	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/10/31	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/10/31	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/10/31	NC		%	25

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,4,6,7,8-Hepta CDF	2020/10/31	23		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/10/31	NC		%	25
			Octa CDF	2020/10/31	23		%	25
			Total Tetra CDF	2020/10/31	2.4		%	25
			Total Penta CDF	2020/10/31	4.6		%	25
			Total Hexa CDF	2020/10/31	23		%	25
			Total Hepta CDF	2020/10/31	17		%	25
7016913	OBC	Matrix Spike(NVE882)	37CL4 2378 Tetra CDD	2020/10/25		80	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/25		92	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/25		85	%	28 - 143
			C13-123478 HexaCDD	2020/10/25		73	%	32 - 141
			C13-123478 HexaCDF	2020/10/25		74	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/25		104	%	26 - 138
			C13-123678 HexaCDD	2020/10/25		88	%	28 - 130
			C13-123678 HexaCDF	2020/10/25		71	%	26 - 123
			C13-12378 PentaCDD	2020/10/25		87	%	25 - 181
			C13-12378 PentaCDF	2020/10/25		84	%	24 - 185
			C13-123789 HexaCDF	2020/10/25		108	%	29 - 147
			C13-234678 HexaCDF	2020/10/25		76	%	28 - 136
			C13-23478 PentaCDF	2020/10/25		98	%	21 - 178
			C13-2378 TetraCDD	2020/10/25		85	%	25 - 164
			C13-2378 TetraCDF	2020/10/25		90	%	24 - 169
			C13-OCDD	2020/10/25		114	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/25		101	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/25		108	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/25		113	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/25		103	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/25		124	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/25		110	%	70 - 140
			Octa CDD	2020/10/25		109	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/25		109	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/25		109	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/25		98	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/25		107	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/25		113	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/25		106	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/25		99	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/25		101	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/25		107	%	78 - 138
			Octa CDF	2020/10/25		106	%	63 - 170
7016913	OBC	Spiked Blank	37CL4 2378 Tetra CDD	2020/10/25		67	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/25		91	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/25		85	%	28 - 143
			C13-123478 HexaCDD	2020/10/25		73	%	32 - 141
			C13-123478 HexaCDF	2020/10/25		72	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/25		101	%	26 - 138
			C13-123678 HexaCDD	2020/10/25		85	%	28 - 130
			C13-123678 HexaCDF	2020/10/25		70	%	26 - 123
			C13-12378 PentaCDD	2020/10/25		86	%	25 - 181
			C13-12378 PentaCDF	2020/10/25		83	%	24 - 185
			C13-123789 HexaCDF	2020/10/25		104	%	29 - 147
			C13-234678 HexaCDF	2020/10/25		75	%	28 - 136
			C13-23478 PentaCDF	2020/10/25		97	%	21 - 178

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-2378 TetraCDD	2020/10/25		75	%	25 - 164
			C13-2378 TetraCDF	2020/10/25		81	%	24 - 169
			C13-OCDD	2020/10/25		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/25		111	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/25		109	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/25		108	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/25		104	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/25		113	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/25		107	%	70 - 140
			Octa CDD	2020/10/25		100	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/25		111	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/25		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/25		104	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/25		106	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/25		110	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/25		109	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/25		105	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/25		101	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/25		116	%	78 - 138
			Octa CDF	2020/10/25		105	%	63 - 170
7016913	OBC	Method Blank	37CL4 2378 Tetra CDD	2020/10/25		101	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/25		116	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/25		106	%	28 - 143
			C13-123478 HexaCDD	2020/10/25		90	%	32 - 141
			C13-123478 HexaCDF	2020/10/25		87	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/25		128	%	26 - 138
			C13-123678 HexaCDD	2020/10/25		115	%	28 - 130
			C13-123678 HexaCDF	2020/10/25		86	%	26 - 123
			C13-12378 PentaCDD	2020/10/25		100	%	25 - 181
			C13-12378 PentaCDF	2020/10/25		89	%	24 - 185
			C13-123789 HexaCDF	2020/10/25		131	%	29 - 147
			C13-234678 HexaCDF	2020/10/25		95	%	28 - 136
			C13-23478 PentaCDF	2020/10/25		108	%	21 - 178
			C13-2378 TetraCDD	2020/10/25		92	%	25 - 164
			C13-2378 TetraCDF	2020/10/25		102	%	24 - 169
			C13-OCDD	2020/10/25		146	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/25	0.117 U, EDL=0.117		pg/g	
			1,2,3,7,8-Penta CDD	2020/10/25	0.118 U, EDL=0.118		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/10/25	0.106 U, EDL=0.106		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/10/25	0.106 U, EDL=0.106		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/10/25	0.110 U, EDL=0.110		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/10/25	0.497 J, EDL=0.117		pg/g	
			Octa CDD	2020/10/25	3.90 J, EDL=0.108		pg/g	
			Total Tetra CDD	2020/10/25	0.117 U, EDL=0.117		pg/g	
			Total Penta CDD	2020/10/25	0.118 U, EDL=0.118		pg/g	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Hexa CDD	2020/10/25	0.107 U, EDL=0.107		pg/g	
			Total Hepta CDD	2020/10/25	0.826 J, EDL=0.117		pg/g	
			2,3,7,8-Tetra CDF	2020/10/25	0.114 U, EDL=0.114		pg/g	
			1,2,3,7,8-Penta CDF	2020/10/25	0.142 J, EDL=0.112		pg/g	
			2,3,4,7,8-Penta CDF	2020/10/25	0.105 U, EDL=0.105		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/10/25	0.106 U, EDL=0.106		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/10/25	0.109 U, EDL=0.109		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/10/25	0.105 U, EDL=0.105		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/10/25	0.110 U, EDL=0.110		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/10/25	0.221 J, EDL=0.114		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/10/25	0.114 U, EDL=0.114		pg/g	
			Octa CDF	2020/10/25	0.846 J, EDL=0.100		pg/g	
			Total Tetra CDF	2020/10/25	0.114 U, EDL=0.114		pg/g	
			Total Penta CDF	2020/10/25	0.142 J, EDL=0.108		pg/g	
			Total Hexa CDF	2020/10/25	0.107 U, EDL=0.107		pg/g	
			Total Hepta CDF	2020/10/25	0.619 J, EDL=0.114		pg/g	
7016913	OBC	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/10/26	NC		%	25
			1,2,3,7,8-Penta CDD	2020/10/26	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/10/26	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/10/26	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/10/26	NC (1)		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/10/26	11		%	25
			Octa CDD	2020/10/26	3.0		%	25
			Total Tetra CDD	2020/10/26	NC		%	25
			Total Penta CDD	2020/10/26	NC		%	25
			Total Hexa CDD	2020/10/26	NC		%	25
			Total Hepta CDD	2020/10/26	12		%	25
			2,3,7,8-Tetra CDF	2020/10/26	NC		%	25
			1,2,3,7,8-Penta CDF	2020/10/26	NC		%	25
			2,3,4,7,8-Penta CDF	2020/10/26	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/10/26	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/10/26	NC (1)		%	25
			2,3,4,6,7,8-Hexa CDF	2020/10/26	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/10/26	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/10/26	12		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/10/26	NC		%	25
			Octa CDF	2020/10/26	8.7		%	25
			Total Tetra CDF	2020/10/26	NC		%	25

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Penta CDF	2020/10/26	NC		%	25
			Total Hexa CDF	2020/10/26	0.59		%	25
			Total Hepta CDF	2020/10/26	12		%	25
7022840	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/10/27	0.15 U, EDL=0.15		pg/g	
			Confirmation C13-2378 TetraCDF	2020/10/27		87	%	40 - 135
7050334	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/11/10	0.12 U, EDL=0.12		pg/g	
			Confirmation C13-2378 TetraCDF	2020/11/10		83	%	40 - 135
7050334	AGU	RPD - Sample/Sample Dup	Confirmation 2,3,7,8-Tetra CDF	2020/11/10	0.33		%	100

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

Melissa DiGrazia, Operations Manager, HRMS Department

Owen Cosby, BSc.C.Chem, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SUBCONTRACT ORDER

Apex Laboratories

A0J0123



10/15/20

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

Sample Name: T4RB-2L **Soil** **Sampled: 09/30/20 09:45** (A0J0123-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 09:45	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-2U **Soil** **Sampled: 09/30/20 10:15** (A0J0123-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 10:15	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-3L **Soil** **Sampled: 09/30/20 10:45** (A0J0123-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 10:45	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-3U **Soil** **Sampled: 09/30/20 11:20** (A0J0123-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 11:20	BV/ Maxxam -- Level 4 Data package

07-Oct-20 12:28
Lori Dufour
C0Q2516
ENV-1302

Standard TAT AFR ASR

10/6/20 14:18 — Fed Ex (Shipper)

Released By / Date — Received By / Date

Fed Ex (Shipper) — DIPIKA SINGH 2020/10/07 12:28

Released By / Date — Received By / Date

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4.1/5.6/4.1

SUBCONTRACT ORDER

Apex Laboratories

A0J0123

Sample Name: T4RB-4L	Soil	Sampled: 09/30/20 12:20	(A0J0123-05)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 12:20	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-4U-OR	Soil	Sampled: 09/30/20 12:50	(A0J0123-06)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 12:50	BV/ Maxxam -- Level 4 Data package

Sample Name: DUP-2	Soil	Sampled: 09/30/20 00:00	(A0J0123-08)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/29/21 00:00	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-5L	Soil	Sampled: 10/01/20 09:50	(A0J0123-09)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/30/21 09:50	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-5U	Soil	Sampled: 10/01/20 10:25	(A0J0123-10)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/30/21 10:25	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-6U	Soil	Sampled: 10/01/20 11:20	(A0J0123-11)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/30/21 11:20	BV/ Maxxam -- Level 4 Data package

Standard TAT

10/6/20 14:18 — Fed Ex (Shipper)

Released By — Date — Received By — Date

Fed Ex (Shipper) — DIPIKA SINGH 2020/10/07 12:28

Released By — Date — Received By — Date

4.1 5.6 4.1

SUBCONTRACT ORDER

Apex Laboratories

A0J0123

OB 101520

Sample Name: T4RB-7L	Soil	Sampled: 10/01/20 12:15	(A0J0123-12)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/30/21 12:15	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-7U	Soil	Sampled: 10/01/20 13:05	(A0J0123-13)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/30/21 13:05	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-8L	Soil	Sampled: 10/01/20 14:05	(A0J0123-14)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/30/21 14:05	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-8U	Soil	Sampled: 10/01/20 14:35	(A0J0123-15)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/30/21 14:35	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-9L	Soil	Sampled: 10/02/20 09:50	(A0J0123-16)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/31/21 09:50	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-9U	Soil	Sampled: 10/02/20 10:25	(A0J0123-17)
Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/31/21 10:25	BV/ Maxxam -- Level 4 Data package

Standard TAT

10/6/20 1418 — Fed Ex (Shipper)

Released By — Date — Received By — Date

Fed Ex (Shipper) — DIPIKA SINGH 2020/10/07 12:28

Released By — Date — Received By — Date

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4.1)5.6/4.1

SUBCONTRACT ORDER

Apex Laboratories

OB 10/5/20 **A0J0123**

Sample Name: T4RB-10L		Soil	Sampled: 10/02/20 11:05	(A0J0123-18)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/31/21 11:05	BV/ Maxxam -- Level 4 Data package	

Sample Name: T4RB-10U		Soil	Sampled: 10/02/20 11:25	(A0J0123-19)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/31/21 11:25	BV/ Maxxam -- Level 4 Data package	

Sample Name: T4RB-11L		Soil	Sampled: 10/02/20 12:00	(A0J0123-20)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/31/21 12:00	BV/ Maxxam -- Level 4 Data package	

Sample Name: T4RB-11U		Soil	Sampled: 10/02/20 12:25	(A0J0123-21)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (B)8 oz Glass Jar	10/15/20 17:00	03/31/21 12:25	BV/ Maxxam -- Level 4 Data package	

Sample Name: DUP-3		Soil	Sampled: 10/02/20 00:00	(A0J0123-22)
Analysis	Due	Expires	Comments	
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/15/20 17:00	03/31/21 00:00	BV/ Maxxam -- Level 4 Data package	

Standard TAT

Released By	Date	Received By	Date
	10/6/20 14:18	Fed Ex (Shipper)	
Fed Ex (Shipper)		DIPIKA SINGH	2020/10/07 12:28

4.1 | 5.6 | 4.1

Page 4 of 4

Apex Laboratories, LLC

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

Thursday, November 5, 2020

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0J0199 - POP --- T4 Riverbank - 2372-08 Task 3

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 A0J0199, which was received by the laboratory on 10/7/2020 at 10:02:00AM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	1.3 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



Darrell Auvil, Project Manager

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

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T4RB-18U	A0J0199-01	Soil	10/05/20 12:25	10/07/20 10:02
T4RB-19U	A0J0199-03	Soil	10/05/20 14:10	10/07/20 10:02
T4RB-19L	A0J0199-04	Soil	10/05/20 14:45	10/07/20 10:02
T4RB-20L	A0J0199-05	Soil	10/06/20 09:30	10/07/20 10:02
T4RB-20U	A0J0199-06	Soil	10/06/20 09:55	10/07/20 10:02
T4RB-21U	A0J0199-07	Soil	10/06/20 10:35	10/07/20 10:02
T4RB-21L	A0J0199-08	Soil	10/06/20 11:05	10/07/20 10:02
T4RB-22U	A0J0199-09	Soil	10/06/20 12:20	10/07/20 10:02
T4RB-22L	A0J0199-10	Soil	10/06/20 12:45	10/07/20 10:02
DUP-4	A0J0199-11	Soil	10/06/20 00:00	10/07/20 10:02

Apex Laboratories



Darrell Auvil, Project Manager

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

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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
T4RB-18U (A0J0199-01)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	ND	11.2	25.0	mg/kg dry	1	10/13/20 23:41	NWTPH-Dx	
Oil	**318**	22.4	50.0	mg/kg dry	1	10/13/20 23:41	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 85 %*		*Limits: 50-150 %*	*1*	*10/13/20 23:41*	*NWTPH-Dx*	
T4RB-19U (A0J0199-03)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	**93.5**	10.1	25.0	mg/kg dry	1	10/14/20 00:01	NWTPH-Dx	**F-11, F-15**
Oil	**236**	20.2	50.0	mg/kg dry	1	10/14/20 00:01	NWTPH-Dx	**F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 94 %*		*Limits: 50-150 %*	*1*	*10/14/20 00:01*	*NWTPH-Dx*	
T4RB-19L (A0J0199-04)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	ND	10.3	25.0	mg/kg dry	1	10/14/20 01:45	NWTPH-Dx	
Oil	**41.8**	20.7	50.0	mg/kg dry	1	10/14/20 01:45	NWTPH-Dx	**J**
Surrogate: o-Terphenyl (Surr)		*Recovery: 75 %*		*Limits: 50-150 %*	*1*	*10/14/20 01:45*	*NWTPH-Dx*	
T4RB-20L (A0J0199-05)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	ND	10.4	25.0	mg/kg dry	1	10/14/20 02:05	NWTPH-Dx	
Oil	ND	20.9	50.0	mg/kg dry	1	10/14/20 02:05	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*		*Limits: 50-150 %*	*1*	*10/14/20 02:05*	*NWTPH-Dx*	
T4RB-20U (A0J0199-06)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	**16.9**	10.2	25.0	mg/kg dry	1	10/14/20 02:26	NWTPH-Dx	**J**
Oil	**77.9**	20.4	50.0	mg/kg dry	1	10/14/20 02:26	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*10/14/20 02:26*	*NWTPH-Dx*	
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	**12.3**	10.1	25.0	mg/kg dry	1	10/14/20 02:46	NWTPH-Dx	**J**
Oil	**109**	20.1	50.0	mg/kg dry	1	10/14/20 02:46	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 94 %*		*Limits: 50-150 %*	*1*	*10/14/20 02:46*	*NWTPH-Dx*	
T4RB-21L (A0J0199-08)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	ND	10.2	25.0	mg/kg dry	1	10/14/20 03:07	NWTPH-Dx	
Oil	**95.5**	20.5	50.0	mg/kg dry	1	10/14/20 03:07	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*10/14/20 03:07*	*NWTPH-Dx*	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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
T4RB-22U (A0J0199-09)				**Matrix: Soil**		**Batch: 0100429**		
Diesel	ND	9.79	25.0	mg/kg dry	1	10/13/20 22:59	NWTPH-Dx	
Oil	**173**	19.6	50.0	mg/kg dry	1	10/13/20 22:59	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 100 %*		*Limits: 50-150 %*	*1*	*10/13/20 22:59*	*NWTPH-Dx*	*Q-41*
T4RB-22L (A0J0199-10)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	ND	10.2	25.0	mg/kg dry	1	10/14/20 03:28	NWTPH-Dx	
Oil	**20.4**	20.4	50.0	mg/kg dry	1	10/14/20 03:28	NWTPH-Dx	**J**
Surrogate: o-Terphenyl (Surr)		*Recovery: 92 %*		*Limits: 50-150 %*	*1*	*10/14/20 03:28*	*NWTPH-Dx*	
DUP-4 (A0J0199-11)				**Matrix: Soil**		**Batch: 0100418**		
Diesel	ND	10.6	25.0	mg/kg dry	1	10/14/20 03:48	NWTPH-Dx	
Oil	**269**	21.1	50.0	mg/kg dry	1	10/14/20 03:48	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 89 %*		*Limits: 50-150 %*	*1*	*10/14/20 03:48*	*NWTPH-Dx*	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-19L (A0J0199-04)				**Matrix: Soil**		**Batch: 0100450**		
Chlorobenzene	ND	14.4	28.8	ug/kg dry	50	10/14/20 18:02	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/14/20 18:02*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*10/14/20 18:02*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*	*1*	*10/14/20 18:02*	*5035A/8260D*	
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100450**		
Chlorobenzene	ND	15.6	31.1	ug/kg dry	50	10/14/20 18:30	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*10/14/20 18:30*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*10/14/20 18:30*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/14/20 18:30*	*5035A/8260D*	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-18U (A0J0199-01)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1221	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1232	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1242	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1248	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1254	**62.2**	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	**P-12**
Aroclor 1260	**51.2**	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	**P-12, Q-42**
Aroclor 1262	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1268	ND	2.14	4.29	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 96 %*		*Limits: 60-125 %*	*1*	*10/19/20 16:15*	*EPA 8082A*	
T4RB-19U (A0J0199-03)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1221	ND	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1232	ND	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1242	ND	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1248	ND	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1254	**49.9**	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	**P-12**
Aroclor 1260	**26.9**	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	**P-12**
Aroclor 1262	ND	1.92	3.85	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1268	ND	7.31	7.31	ug/kg dry	1	10/19/20 17:28	EPA 8082A	R-02
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 107 %*		*Limits: 60-125 %*	*1*	*10/19/20 17:28*	*EPA 8082A*	
T4RB-19L (A0J0199-04)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1221	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1232	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1242	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1248	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1254	**9.36**	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	**P-12**
Aroclor 1260	**7.58**	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	**P-12**
Aroclor 1262	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1268	ND	2.02	4.03	ug/kg dry	1	10/19/20 18:05	EPA 8082A	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-19L (A0J0199-04)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 103 %*	*Limits: 60-125 %*		*1*	*10/19/20 18:05*	*EPA 8082A*	
T4RB-20L (A0J0199-05)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1221	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1232	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1242	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1248	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1254	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1260	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1262	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1268	ND	2.12	4.25	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 100 %*	*Limits: 60-125 %*		*1*	*10/19/20 18:42*	*EPA 8082A*	
T4RB-20U (A0J0199-06)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	
Aroclor 1221	ND	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	
Aroclor 1232	ND	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	
Aroclor 1242	ND	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	
Aroclor 1248	ND	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	
Aroclor 1254	**10.9**	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	**P-12**
Aroclor 1260	**29.6**	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	**P-12**
Aroclor 1262	ND	2.00	3.99	ug/kg dry	1	10/19/20 15:38	EPA 8082A	
Aroclor 1268	ND	5.49	5.49	ug/kg dry	1	10/19/20 15:38	EPA 8082A	R-02
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 99 %*	*Limits: 60-125 %*		*1*	*10/19/20 15:38*	*EPA 8082A*	
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1221	ND	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1232	ND	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1242	ND	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1248	ND	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1254	**7.99**	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	**P-12**
Aroclor 1260	**15.7**	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	**P-12**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1262	ND	2.04	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Aroclor 1268	ND	4.09	4.09	ug/kg dry	1	10/19/20 16:15	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 101 %*		*Limits: 60-125 %*	*1*	*10/19/20 16:15*	*EPA 8082A*	
T4RB-21L (A0J0199-08)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1221	ND	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1232	ND	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1242	ND	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1248	ND	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1254	ND	6.06	6.06	ug/kg dry	1	10/19/20 16:52	EPA 8082A	R-02
Aroclor 1260	**11.0**	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1262	ND	2.09	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Aroclor 1268	ND	4.18	4.18	ug/kg dry	1	10/19/20 16:52	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 98 %*		*Limits: 60-125 %*	*1*	*10/19/20 16:52*	*EPA 8082A*	
T4RB-22U (A0J0199-09)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1221	ND	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1232	ND	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1242	ND	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1248	ND	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1254	**25.3**	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	**P-12**
Aroclor 1260	**35.7**	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	**P-12**
Aroclor 1262	ND	1.92	3.83	ug/kg dry	1	10/19/20 17:28	EPA 8082A	
Aroclor 1268	ND	5.17	5.17	ug/kg dry	1	10/19/20 17:28	EPA 8082A	R-02
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 98 %*		*Limits: 60-125 %*	*1*	*10/19/20 17:28*	*EPA 8082A*	
T4RB-22L (A0J0199-10)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.02	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1221	ND	14.5	14.5	ug/kg dry	1	10/19/20 18:05	EPA 8082A	R-02
Aroclor 1232	ND	4.04	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1242	ND	2.02	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-22L (A0J0199-10)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1248	ND	2.02	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1254	ND	2.02	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1260	**6.93**	2.02	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	**P-09**
Aroclor 1262	ND	2.02	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Aroclor 1268	ND	4.04	4.04	ug/kg dry	1	10/19/20 18:05	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 99 %*		*Limits: 60-125 %*	*1*	*10/19/20 18:05*	*EPA 8082A*	
DUP-4 (A0J0199-11)				**Matrix: Soil**		**Batch: 0100594**		**C-07**
Aroclor 1016	ND	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1221	ND	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1232	ND	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1242	ND	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1248	ND	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1254	ND	6.17	6.17	ug/kg dry	1	10/19/20 18:42	EPA 8082A	R-02
Aroclor 1260	**13.5**	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1262	ND	2.02	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Aroclor 1268	ND	4.05	4.05	ug/kg dry	1	10/19/20 18:42	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 96 %*		*Limits: 60-125 %*	*1*	*10/19/20 18:42*	*EPA 8082A*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-19L (A0J0199-04RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
gamma-BHC (Lindane)	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
cis-Chlordane	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
trans-Chlordane	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
4,4'-DDD	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
4,4'-DDE	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
4,4'-DDT	**1.90**	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	**J, P-11**
Dieldrin	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
Endosulfan I	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
Endosulfan II	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
Endosulfan sulfate	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
Chlordane (Technical)	ND	30.8	61.5	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
cis-Nonachlor	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
2,4'-DDD	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
2,4'-DDE	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
2,4'-DDT	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
Oxychlordane	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
trans-Nonachlor	ND	1.03	2.05	ug/kg dry	1	10/19/20 16:31	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery: 46 %*		*Limits: 42-129 %*	*1*	*10/19/20 16:31*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*117 %*	*55-130 %*	*1*	*10/19/20 16:31*	*EPA 8081B*	
T4RB-21U (A0J0199-07RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	0.996	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
gamma-BHC (Lindane)	ND	1.99	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
cis-Chlordane	ND	0.996	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
trans-Chlordane	ND	0.996	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
4,4'-DDD	ND	8.96	8.96	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
4,4'-DDE	ND	2.29	2.29	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
4,4'-DDT	**11.3**	0.996	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
Dieldrin	ND	1.99	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
Endosulfan I	ND	2.39	2.39	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
Endosulfan II	ND	1.99	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
Endosulfan sulfate	ND	1.99	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-21U (A0J0199-07RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Chlordane (Technical)	ND	29.9	59.7	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
cis-Nonachlor	ND	5.58	5.58	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
2,4'-DDD	ND	4.48	4.48	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
2,4'-DDE	ND	2.49	2.49	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
2,4'-DDT	ND	3.98	3.98	ug/kg dry	1	10/19/20 16:48	EPA 8081B	R-02
Oxychlordane	ND	1.99	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
trans-Nonachlor	ND	1.99	1.99	ug/kg dry	1	10/19/20 16:48	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*55 %*	*Limits: 42-129 %*	*1*	*10/19/20 16:48*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*120 %*	*55-130 %*	*1*	*10/19/20 16:48*	*EPA 8081B*	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-18U (A0J0199-01)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Acenaphthylene	**100**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	**J**
Anthracene	**78.5**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	**J**
Benz(a)anthracene	**199**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Benzo(a)pyrene	**389**	89.0	178	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Benzo(b)fluoranthene	**400**	89.0	178	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Benzo(k)fluoranthene	**167**	89.0	178	ug/kg dry	40	10/14/20 00:07	EPA 8270E	**J**
Benzo(g,h,i)perylene	**354**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Chrysene	**238**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Dibenz(a,h)anthracene	ND	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Fluoranthene	**334**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Fluorene	ND	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**303**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
2-Methylnaphthalene	ND	119	237	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Naphthalene	ND	119	237	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Phenanthrene	**143**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Pyrene	**461**	59.2	119	ug/kg dry	40	10/14/20 00:07	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*61 %*	*Limits: 37-122 %*	*40*	*10/14/20 00:07*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*64 %*	*44-120 %*	*40*	*10/14/20 00:07*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*40 %*	*33-122 %*	*40*	*10/14/20 00:07*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*81 %*	*54-127 %*	*40*	*10/14/20 00:07*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*44 %*	*35-120 %*	*40*	*10/14/20 00:07*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*70 %*	*39-132 %*	*40*	*10/14/20 00:07*	*EPA 8270E*	*S-05*
T4RB-19U (A0J0199-03)				**Matrix: Soil**		**Batch: 0100353**		
Acenaphthene	ND	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Acenaphthylene	ND	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Anthracene	**62.1**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	**J**
Benz(a)anthracene	**147**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Benzo(a)pyrene	**173**	79.9	160	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Benzo(b)fluoranthene	**337**	79.9	160	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Benzo(k)fluoranthene	**154**	79.9	160	ug/kg dry	40	10/14/20 00:42	EPA 8270E	**J**
Benzo(g,h,i)perylene	**86.8**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	**J**
Chrysene	**263**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-19U (A0J0199-03)				**Matrix: Soil**		**Batch: 0100353**		
Dibenz(a,h)anthracene	ND	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Fluoranthene	**311**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Fluorene	ND	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**82.2**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	**J**
2-Methylnaphthalene	ND	107	213	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Naphthalene	ND	107	213	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Phenanthrene	**346**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Pyrene	**307**	53.1	107	ug/kg dry	40	10/14/20 00:42	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*80 %*	*Limits: 37-122 %*	*40*	*10/14/20 00:42*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*40*	*10/14/20 00:42*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*50 %*	*33-122 %*	*40*	*10/14/20 00:42*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*96 %*	*54-127 %*	*40*	*10/14/20 00:42*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*66 %*	*35-120 %*	*40*	*10/14/20 00:42*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*99 %*	*39-132 %*	*40*	*10/14/20 00:42*	*EPA 8270E*	*S-05*
T4RB-19L (A0J0199-04RE1)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Acenaphthylene	ND	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Anthracene	ND	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	Q-42
Benz(a)anthracene	**56.7**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Benzo(a)pyrene	**76.7**	20.3	40.5	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Benzo(b)fluoranthene	**113**	20.3	40.5	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Benzo(k)fluoranthene	**49.9**	20.3	40.5	ug/kg dry	10	10/19/20 17:59	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**78.6**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Chrysene	**62.0**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Dibenz(a,h)anthracene	ND	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	Q-42
Fluoranthene	**91.7**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Fluorene	ND	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**67.5**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
2-Methylnaphthalene	ND	27.1	54.0	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Naphthalene	ND	27.1	54.0	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Phenanthrene	**50.3**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Pyrene	**92.9**	13.5	27.1	ug/kg dry	10	10/19/20 17:59	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	203	405	ug/kg dry	10	10/19/20 17:59	EPA 8270E	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-19L (A0J0199-04RE1)				**Matrix: Soil**		**Batch: 0100616**		
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*69 %*	*Limits: 37-122 %*	*10*	*10/19/20 17:59*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*79 %*	*44-120 %*	*10*	*10/19/20 17:59*	*EPA 8270E*	
Phenol-d6 (Surr)			*26 %*	*33-122 %*	*10*	*10/19/20 17:59*	*EPA 8270E*	*S-03*
p-Terphenyl-d14 (Surr)			*88 %*	*54-127 %*	*10*	*10/19/20 17:59*	*EPA 8270E*	
2-Fluorophenol (Surr)			*33 %*	*35-120 %*	*10*	*10/19/20 17:59*	*EPA 8270E*	*S-03*
2,4,6-Tribromophenol (Surr)			*48 %*	*39-132 %*	*10*	*10/19/20 17:59*	*EPA 8270E*	
T4RB-20L (A0J0199-05)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Acenaphthylene	**3.15**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Anthracene	ND	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Benz(a)anthracene	**9.64**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Benzo(a)pyrene	**17.5**	2.09	4.18	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Benzo(b)fluoranthene	**16.9**	2.09	4.18	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Benzo(k)fluoranthene	**7.34**	2.09	4.18	ug/kg dry	1	10/19/20 20:24	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**15.1**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Chrysene	**12.0**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Dibenz(a,h)anthracene	**1.80**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	**J**
Fluoranthene	**10.0**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Fluorene	ND	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**12.2**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
2-Methylnaphthalene	ND	2.79	5.57	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Naphthalene	**3.70**	2.79	5.57	ug/kg dry	1	10/19/20 20:24	EPA 8270E	**J**
Phenanthrene	**1.84**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	**J**
Pyrene	**16.3**	1.39	2.79	ug/kg dry	1	10/19/20 20:24	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*76 %*	*Limits: 37-122 %*	*1*	*10/19/20 20:24*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*1*	*10/19/20 20:24*	*EPA 8270E*	
Phenol-d6 (Surr)			*61 %*	*33-122 %*	*1*	*10/19/20 20:24*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*86 %*	*54-127 %*	*1*	*10/19/20 20:24*	*EPA 8270E*	
2-Fluorophenol (Surr)			*60 %*	*35-120 %*	*1*	*10/19/20 20:24*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*83 %*	*39-132 %*	*1*	*10/19/20 20:24*	*EPA 8270E*	
T4RB-20U (A0J0199-06)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	35.7	35.7	ug/kg dry	10	10/19/20 21:00	EPA 8270E	R-02
Acenaphthylene	ND	30.7	30.7	ug/kg dry	10	10/19/20 21:00	EPA 8270E	R-02

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-20U (A0J0199-06)				**Matrix: Soil**		**Batch: 0100616**		
Anthracene	**28.8**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Benz(a)anthracene	**100**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Benzo(a)pyrene	**83.3**	19.8	39.7	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Benzo(b)fluoranthene	**152**	19.8	39.7	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Benzo(k)fluoranthene	**60.9**	19.8	39.7	ug/kg dry	10	10/19/20 21:00	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**73.0**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Chrysene	**173**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Dibenz(a,h)anthracene	**14.4**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	**J**
Fluoranthene	**514**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Fluorene	**35.0**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**68.5**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
2-Methylnaphthalene	**275**	26.5	52.8	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Naphthalene	**94.5**	26.5	52.8	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Phenanthrene	**547**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Pyrene	**298**	13.2	26.5	ug/kg dry	10	10/19/20 21:00	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*70 %*	*Limits: 37-122 %*	*10*	*10/19/20 21:00*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*79 %*	*44-120 %*	*10*	*10/19/20 21:00*	*EPA 8270E*	
Phenol-d6 (Surr)			*42 %*	*33-122 %*	*10*	*10/19/20 21:00*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*86 %*	*54-127 %*	*10*	*10/19/20 21:00*	*EPA 8270E*	
2-Fluorophenol (Surr)			*49 %*	*35-120 %*	*10*	*10/19/20 21:00*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*79 %*	*39-132 %*	*10*	*10/19/20 21:00*	*EPA 8270E*	
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	56.3	56.3	ug/kg dry	10	10/19/20 21:35	EPA 8270E	R-02
Acenaphthylene	ND	67.1	67.1	ug/kg dry	10	10/19/20 21:35	EPA 8270E	R-02
Anthracene	**184**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Benz(a)anthracene	**454**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Benzo(a)pyrene	**416**	19.7	39.5	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Benzo(b)fluoranthene	**524**	19.7	39.5	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Benzo(k)fluoranthene	**209**	19.7	39.5	ug/kg dry	10	10/19/20 21:35	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**242**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Chrysene	**505**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Dibenz(a,h)anthracene	**51.3**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Fluoranthene	**1240**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100616**		
Fluorene	**81.6**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**238**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
2-Methylnaphthalene	**176**	26.4	52.6	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Naphthalene	**78.9**	26.4	52.6	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Phenanthrene	**958**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Pyrene	**1130**	13.1	26.4	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	197	395	ug/kg dry	10	10/19/20 21:35	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*77 %*	*Limits: 37-122 %*	*10*	*10/19/20 21:35*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*10*	*10/19/20 21:35*	*EPA 8270E*	
Phenol-d6 (Surr)			*54 %*	*33-122 %*	*10*	*10/19/20 21:35*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*89 %*	*54-127 %*	*10*	*10/19/20 21:35*	*EPA 8270E*	
2-Fluorophenol (Surr)			*60 %*	*35-120 %*	*10*	*10/19/20 21:35*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*88 %*	*39-132 %*	*10*	*10/19/20 21:35*	*EPA 8270E*	
T4RB-21L (A0J0199-08)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Acenaphthylene	ND	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Anthracene	ND	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Benz(a)anthracene	**23.2**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	**J**
Benzo(a)pyrene	**41.4**	21.0	42.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	**J**
Benzo(b)fluoranthene	**50.0**	21.0	42.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Benzo(k)fluoranthene	**23.4**	21.0	42.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	**J**
Benzo(g,h,i)perylene	**38.7**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Chrysene	**26.3**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	**J**
Dibenz(a,h)anthracene	ND	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Fluoranthene	**34.8**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Fluorene	ND	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**29.9**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
2-Methylnaphthalene	ND	28.1	56.0	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Naphthalene	ND	28.1	56.0	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Phenanthrene	**33.0**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Pyrene	**37.9**	14.0	28.1	ug/kg dry	10	10/19/20 22:12	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*79 %*	*Limits: 37-122 %*	*10*	*10/19/20 22:12*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*73 %*	*44-120 %*	*10*	*10/19/20 22:12*	*EPA 8270E*	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-21L (A0J0199-08)				**Matrix: Soil**		**Batch: 0100616**		
Surrogate: Phenol-d6 (Surr)		*Recovery:*	*43 %*	*Limits: 33-122 %*	*10*	*10/19/20 22:12*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*91 %*	*54-127 %*	*10*	*10/19/20 22:12*	*EPA 8270E*	
2-Fluorophenol (Surr)			*51 %*	*35-120 %*	*10*	*10/19/20 22:12*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*10*	*10/19/20 22:12*	*EPA 8270E*	
T4RB-22U (A0J0199-09)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	47.8	47.8	ug/kg dry	10	10/19/20 22:48	EPA 8270E	R-02
Acenaphthylene	ND	59.2	59.2	ug/kg dry	10	10/19/20 22:48	EPA 8270E	R-02
Anthracene	**78.7**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Benz(a)anthracene	**191**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Benzo(a)pyrene	**207**	19.1	38.2	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Benzo(b)fluoranthene	**298**	19.1	38.2	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Benzo(k)fluoranthene	**112**	19.1	38.2	ug/kg dry	10	10/19/20 22:48	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**164**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Chrysene	**309**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Dibenz(a,h)anthracene	**35.1**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Fluoranthene	**699**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Fluorene	**89.7**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**148**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
2-Methylnaphthalene	**162**	25.5	50.9	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Naphthalene	**158**	25.5	50.9	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Phenanthrene	**1010**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Pyrene	**451**	12.7	25.5	ug/kg dry	10	10/19/20 22:48	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*68 %*	*Limits: 37-122 %*	*10*	*10/19/20 22:48*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*67 %*	*44-120 %*	*10*	*10/19/20 22:48*	*EPA 8270E*	
Phenol-d6 (Surr)			*44 %*	*33-122 %*	*10*	*10/19/20 22:48*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*88 %*	*54-127 %*	*10*	*10/19/20 22:48*	*EPA 8270E*	
2-Fluorophenol (Surr)			*47 %*	*35-120 %*	*10*	*10/19/20 22:48*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*84 %*	*39-132 %*	*10*	*10/19/20 22:48*	*EPA 8270E*	
T4RB-22L (A0J0199-10RE1)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Acenaphthylene	**5.55**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	**J**
Anthracene	ND	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Benz(a)anthracene	**8.47**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	**J**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-22L (A0J0199-10RE1)				**Matrix: Soil**		**Batch: 0100616**		
Benzo(a)pyrene	**24.4**	8.20	16.4	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Benzo(b)fluoranthene	**24.6**	8.20	16.4	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Benzo(k)fluoranthene	**11.8**	8.20	16.4	ug/kg dry	4	10/20/20 09:53	EPA 8270E	**J**
Benzo(g,h,i)perylene	**30.8**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Chrysene	**10.1**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	**J**
Dibenz(a,h)anthracene	ND	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Fluoranthene	**16.5**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Fluorene	ND	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**23.1**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
2-Methylnaphthalene	ND	10.9	21.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Naphthalene	**13.2**	10.9	21.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	**J**
Phenanthrene	**11.5**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Pyrene	**16.1**	5.45	10.9	ug/kg dry	4	10/20/20 09:53	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*73 %*	*Limits: 37-122 %*	*4*	*10/20/20 09:53*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*4*	*10/20/20 09:53*	*EPA 8270E*	
Phenol-d6 (Surr)			*51 %*	*33-122 %*	*4*	*10/20/20 09:53*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*80 %*	*54-127 %*	*4*	*10/20/20 09:53*	*EPA 8270E*	
2-Fluorophenol (Surr)			*62 %*	*35-120 %*	*4*	*10/20/20 09:53*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*66 %*	*39-132 %*	*4*	*10/20/20 09:53*	*EPA 8270E*	
DUP-4 (A0J0199-11RE1)				**Matrix: Soil**		**Batch: 0100616**		
Acenaphthene	ND	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Acenaphthylene	**7.18**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	**J**
Anthracene	**10.9**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	**J**
Benz(a)anthracene	**27.5**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Benzo(a)pyrene	**42.6**	10.3	20.5	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Benzo(b)fluoranthene	**49.4**	10.3	20.5	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Benzo(k)fluoranthene	**23.2**	10.3	20.5	ug/kg dry	5	10/19/20 19:12	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**43.4**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Chrysene	**31.9**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Dibenz(a,h)anthracene	ND	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Fluoranthene	**49.6**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Fluorene	ND	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**34.8**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-4 (A0J0199-11RE1)				**Matrix: Soil**		**Batch: 0100616**		
2-Methylnaphthalene	ND	13.7	27.4	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Naphthalene	ND	13.7	27.4	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Phenanthrene	**25.8**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Pyrene	**55.6**	6.83	13.7	ug/kg dry	5	10/19/20 19:12	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*73 %*	*Limits: 37-122 %*	*5*	*10/19/20 19:12*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*5*	*10/19/20 19:12*	*EPA 8270E*	
Phenol-d6 (Surr)			*41 %*	*33-122 %*	*5*	*10/19/20 19:12*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*89 %*	*54-127 %*	*5*	*10/19/20 19:12*	*EPA 8270E*	
2-Fluorophenol (Surr)			*50 %*	*35-120 %*	*5*	*10/19/20 19:12*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*75 %*	*39-132 %*	*5*	*10/19/20 19:12*	*EPA 8270E*	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-18U (A0J0199-01)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**4.72**	0.546	1.09	mg/kg dry	10	10/19/20 19:22	EPA 6020A	
Cadmium	**3.80**	0.109	0.218	mg/kg dry	10	10/19/20 19:22	EPA 6020A	
Copper	**26.8**	1.09	2.18	mg/kg dry	10	10/19/20 19:22	EPA 6020A	
Lead	**432**	0.109	0.218	mg/kg dry	10	10/19/20 19:22	EPA 6020A	
Mercury	**0.0556**	0.0437	0.0873	mg/kg dry	10	10/19/20 19:22	EPA 6020A	**J**
Zinc	**631**	2.18	4.37	mg/kg dry	10	10/19/20 19:22	EPA 6020A	
T4RB-19U (A0J0199-03)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**12.5**	0.538	1.08	mg/kg dry	10	10/19/20 19:37	EPA 6020A	
Cadmium	**20.0**	0.108	0.215	mg/kg dry	10	10/19/20 19:37	EPA 6020A	
Copper	**58.5**	1.08	2.15	mg/kg dry	10	10/19/20 19:37	EPA 6020A	
Mercury	**0.150**	0.0431	0.0861	mg/kg dry	10	10/19/20 19:37	EPA 6020A	
T4RB-19U (A0J0199-03RE1)				**Matrix: Soil**				
Batch: 0100604								
Lead	**1280**	0.538	1.08	mg/kg dry	50	10/20/20 14:07	EPA 6020A	
Zinc	**3080**	10.8	21.5	mg/kg dry	50	10/20/20 14:07	EPA 6020A	
T4RB-19L (A0J0199-04)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**4.88**	0.577	1.15	mg/kg dry	10	10/19/20 19:42	EPA 6020A	
Cadmium	**10.0**	0.115	0.231	mg/kg dry	10	10/19/20 19:42	EPA 6020A	
Copper	**28.2**	1.15	2.31	mg/kg dry	10	10/19/20 19:42	EPA 6020A	
Lead	**173**	0.115	0.231	mg/kg dry	10	10/19/20 19:42	EPA 6020A	**Q-42**
Mercury	ND	0.0461	0.0923	mg/kg dry	10	10/19/20 19:42	EPA 6020A	
Zinc	**1420**	2.31	4.61	mg/kg dry	10	10/19/20 19:42	EPA 6020A	**Q-42**
T4RB-20L (A0J0199-05)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**2.46**	0.574	1.15	mg/kg dry	10	10/19/20 19:56	EPA 6020A	
Cadmium	**0.149**	0.115	0.230	mg/kg dry	10	10/19/20 19:56	EPA 6020A	**J**
Copper	**12.8**	1.15	2.30	mg/kg dry	10	10/19/20 19:56	EPA 6020A	
Lead	**4.99**	0.115	0.230	mg/kg dry	10	10/19/20 19:56	EPA 6020A	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-20L (A0J0199-05)				**Matrix: Soil**				
Mercury	ND	0.0459	0.0918	mg/kg dry	10	10/19/20 19:56	EPA 6020A	
Zinc	**51.1**	2.30	4.59	mg/kg dry	10	10/19/20 19:56	EPA 6020A	
T4RB-20U (A0J0199-06)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**4.63**	0.519	1.04	mg/kg dry	10	10/19/20 20:01	EPA 6020A	
Cadmium	**2.14**	0.104	0.208	mg/kg dry	10	10/19/20 20:01	EPA 6020A	
Copper	**24.7**	1.04	2.08	mg/kg dry	10	10/19/20 20:01	EPA 6020A	
Lead	**266**	0.104	0.208	mg/kg dry	10	10/19/20 20:01	EPA 6020A	
Mercury	ND	0.0416	0.0831	mg/kg dry	10	10/19/20 20:01	EPA 6020A	
Zinc	**354**	2.08	4.16	mg/kg dry	10	10/19/20 20:01	EPA 6020A	
T4RB-21U (A0J0199-07)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**8.20**	0.568	1.14	mg/kg dry	10	10/19/20 20:06	EPA 6020A	
Cadmium	**7.60**	0.114	0.227	mg/kg dry	10	10/19/20 20:06	EPA 6020A	
Copper	**40.5**	1.14	2.27	mg/kg dry	10	10/19/20 20:06	EPA 6020A	
Mercury	**0.106**	0.0454	0.0909	mg/kg dry	10	10/19/20 20:06	EPA 6020A	
Zinc	**1010**	2.27	4.54	mg/kg dry	10	10/19/20 20:06	EPA 6020A	
T4RB-21U (A0J0199-07RE1)				**Matrix: Soil**				
Batch: 0100604								
Lead	**705**	0.568	1.14	mg/kg dry	50	10/20/20 14:12	EPA 6020A	
T4RB-21L (A0J0199-08)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**5.08**	0.553	1.11	mg/kg dry	10	10/19/20 20:11	EPA 6020A	
Cadmium	**5.34**	0.111	0.221	mg/kg dry	10	10/19/20 20:11	EPA 6020A	
Copper	**40.7**	1.11	2.21	mg/kg dry	10	10/19/20 20:11	EPA 6020A	
Mercury	**0.0592**	0.0442	0.0885	mg/kg dry	10	10/19/20 20:11	EPA 6020A	**J**
Zinc	**953**	2.21	4.42	mg/kg dry	10	10/19/20 20:11	EPA 6020A	
T4RB-21L (A0J0199-08RE1)				**Matrix: Soil**				
Batch: 0100604								
Lead	**773**	0.553	1.11	mg/kg dry	50	10/20/20 14:17	EPA 6020A	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-22U (A0J0199-09)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**7.29**	0.550	1.10	mg/kg dry	10	10/19/20 20:16	EPA 6020A	
Cadmium	**5.35**	0.110	0.220	mg/kg dry	10	10/19/20 20:16	EPA 6020A	
Copper	**36.7**	1.10	2.20	mg/kg dry	10	10/19/20 20:16	EPA 6020A	
Mercury	**0.0499**	0.0440	0.0880	mg/kg dry	10	10/19/20 20:16	EPA 6020A	**J**
Zinc	**760**	2.20	4.40	mg/kg dry	10	10/19/20 20:16	EPA 6020A	
T4RB-22U (A0J0199-09RE1)				**Matrix: Soil**				
Batch: 0100604								
Lead	**725**	0.550	1.10	mg/kg dry	50	10/20/20 14:22	EPA 6020A	
T4RB-22L (A0J0199-10)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**2.76**	0.539	1.08	mg/kg dry	10	10/19/20 20:21	EPA 6020A	
Cadmium	**0.275**	0.108	0.216	mg/kg dry	10	10/19/20 20:21	EPA 6020A	
Copper	**15.1**	1.08	2.16	mg/kg dry	10	10/19/20 20:21	EPA 6020A	
Lead	**47.5**	0.108	0.216	mg/kg dry	10	10/19/20 20:21	EPA 6020A	
Mercury	ND	0.0431	0.0862	mg/kg dry	10	10/19/20 20:21	EPA 6020A	
Zinc	**59.9**	2.16	4.31	mg/kg dry	10	10/19/20 20:21	EPA 6020A	
DUP-4 (A0J0199-11)				**Matrix: Soil**				
Batch: 0100604								
Arsenic	**4.87**	0.547	1.09	mg/kg dry	10	10/19/20 20:46	EPA 6020A	
Cadmium	**4.27**	0.109	0.219	mg/kg dry	10	10/19/20 20:46	EPA 6020A	
Copper	**37.0**	1.09	2.19	mg/kg dry	10	10/19/20 20:46	EPA 6020A	
Mercury	ND	0.0438	0.0876	mg/kg dry	10	10/19/20 20:46	EPA 6020A	
Zinc	**818**	2.19	4.38	mg/kg dry	10	10/19/20 20:46	EPA 6020A	
DUP-4 (A0J0199-11RE1)				**Matrix: Soil**				
Batch: 0100604								
Lead	**735**	0.547	1.09	mg/kg dry	50	10/20/20 14:27	EPA 6020A	

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Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-18U (A0J0199-01)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**88.8**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-19U (A0J0199-03)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**97.4**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-19L (A0J0199-04)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**93.4**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-20L (A0J0199-05)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**91.7**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-20U (A0J0199-06)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**97.4**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**97.4**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-21L (A0J0199-08)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**93.0**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-22U (A0J0199-09)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**97.5**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
T4RB-22L (A0J0199-10)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**94.9**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	
DUP-4 (A0J0199-11)				**Matrix: Soil**		**Batch: 0100307**		
% Solids	**93.0**	---	1.00	%	1	10/12/20 08:43	EPA 8000D	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Butyl Tins

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-19L (A0J0199-04)				**Matrix: Soil**		**Batch: BIJ0485**		
Batch: BIJ0485								
Tributyltin Ion	ND	0.446	3.82	ug/kg dry	1	10/23/20 14:36	EPA 8270E-SIM	U
Batch: BIJ0485								
Surrogate: Tripentyltin		*Recovery:*	*61.2 %*	*Limits: 30-160 %*	*1*	*10/23/20 14:36*	*EPA 8270E-SIM*	
Tripropyltin			*43.7 %*	*30-160 %*	*1*	*10/23/20 14:36*	*EPA 8270E-SIM*	
T4RB-21U (A0J0199-07)				**Matrix: Soil**		**Batch: BIJ0485**		
Batch: BIJ0485								
Tributyltin Ion	ND	0.445	3.82	ug/kg dry	1	10/23/20 14:52	EPA 8270E-SIM	U
Batch: BIJ0485								
Surrogate: Tripentyltin		*Recovery:*	*74.9 %*	*Limits: 30-160 %*	*1*	*10/23/20 14:52*	*EPA 8270E-SIM*	
Tripropyltin			*56.9 %*	*30-160 %*	*1*	*10/23/20 14:52*	*EPA 8270E-SIM*	

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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 0100418 - EPA 3546 (Fuels)							**Soil**					
Blank (0100418-BLK1)			Prepared: 10/13/20 10:45		Analyzed: 10/13/20 19:54							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (0100418-BS1)			Prepared: 10/13/20 10:45		Analyzed: 10/13/20 20:14							
NWTPH-Dx												
Diesel	123	10.0	25.0	mg/kg wet	1	125	---	98	73-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100418-DUP1)			Prepared: 10/13/20 10:45		Analyzed: 10/13/20 20:55							
QC Source Sample: Non-SDG (A0J0066-01)												
Diesel	**61.2**	12.2	25.0	mg/kg dry	1	---	81.5	---	---	28	30%	F-13
Oil	ND	24.5	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100418-DUP2)			Prepared: 10/13/20 10:45		Analyzed: 10/14/20 05:31							
QC Source Sample: Non-SDG (A0J0212-06)												
Diesel	ND	10.1	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	ND	20.2	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Batch 0100429 - EPA 3546 (Fuels)							**Soil**					
Blank (0100429-BLK1)			Prepared: 10/13/20 13:18		Analyzed: 10/13/20 19:54							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*			*Dilution: 1x*					Q-41
LCS (0100429-BS1)			Prepared: 10/13/20 13:18		Analyzed: 10/13/20 20:14							
NWTPH-Dx												
Diesel	121	10.0	25.0	mg/kg wet	1	125	---	97	73-115%	---	---	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100429 - EPA 3546 (Fuels)							**Soil**					
LCS (0100429-BS1)			Prepared: 10/13/20 13:18		Analyzed: 10/13/20 20:14							
Surr: o-Terphenyl (Surr)			*Recovery: 111 %*	*Limits: 50-150 %*		*Dilution: 1x*						Q-41
Duplicate (0100429-DUP1)			Prepared: 10/13/20 13:18		Analyzed: 10/13/20 20:55							
QC Source Sample: Non-SDG (A0J0136-04)												
Diesel	ND	11.9	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**48.7**	23.8	50.0	mg/kg dry	1	---	48.7	---	---	0.1	30%	J
Surr: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*		*Dilution: 1x*						Q-41
Duplicate (0100429-DUP2)			Prepared: 10/13/20 13:18		Analyzed: 10/14/20 03:48							
QC Source Sample: Non-SDG (A0J0404-02)												
Diesel	**170**	11.1	25.0	mg/kg dry	1	---	327	---	---	**63**	**30%**	F-11, Q-17
Oil	ND	22.2	50.0	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*		*Dilution: 1x*						Q-41

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QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100450 - EPA 5035A							**Soil**					
Blank (0100450-BLK1)			Prepared: 10/14/20 09:00		Analyzed: 10/14/20 11:15							
5035A/8260D												
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*101 %*		*79-120 %*			*"*				
LCS (0100450-BS1)			Prepared: 10/14/20 09:00		Analyzed: 10/14/20 10:20							
5035A/8260D												
Chlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*			*"*				
Duplicate (0100450-DUP1)			Prepared: 10/07/20 13:05		Analyzed: 10/14/20 16:14							
QC Source Sample: Non-SDG (A0J0312-03)												
Chlorobenzene	ND	19.1	38.3	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*			*"*				
Matrix Spike (0100450-MS1)			Prepared: 10/08/20 11:50		Analyzed: 10/14/20 17:08							
QC Source Sample: Non-SDG (A0J0312-07)												
5035A/8260D												
Chlorobenzene	2140	26.7	53.5	ug/kg dry	50	2140	ND	100	79-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				

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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 0100594 - EPA 3546							**Soil**					
Blank (0100594-BLK1)			Prepared: 10/19/20 07:09		Analyzed: 10/19/20 15:38							**C-07**
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1262	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1268	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 98 %*		*Limits: 60-125 %*			*Dilution: 1x*				
LCS (0100594-BS1)			Prepared: 10/19/20 07:09		Analyzed: 10/19/20 15:57							**C-07**
EPA 8082A												
Aroclor 1016	171	2.00	4.00	ug/kg wet	1	250	---	69	47-134%	---	---	
Aroclor 1260	220	2.00	4.00	ug/kg wet	1	250	---	88	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 106 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Duplicate (0100594-DUP1)			Prepared: 10/19/20 07:09		Analyzed: 10/19/20 16:52							**C-07**
QC Source Sample: T4RB-18U (A0J0199-01)												
EPA 8082A												
Aroclor 1016	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	**62.1**	2.13	4.27	ug/kg dry	1	---	62.2	---	---	0.2	30%	P-12
Aroclor 1260	**72.6**	2.13	4.27	ug/kg dry	1	---	51.2	---	---	**35**	**30%**	P-12, Q-17
Aroclor 1262	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1268	ND	2.13	4.27	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 96 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Matrix Spike (0100594-MS1)			Prepared: 10/19/20 07:09		Analyzed: 10/19/20 19:19							**C-07**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100594 - EPA 3546							**Soil**					
Matrix Spike (0100594-MS1)			Prepared: 10/19/20 07:09		Analyzed: 10/19/20 19:19							**C-07**
QC Source Sample: DUP-4 (A0J0199-11)												
Aroclor 1016	174	1.99	3.99	ug/kg dry	1	249	ND	70	47-134%	---	---	
Aroclor 1260	216	1.99	3.99	ug/kg dry	1	249	13.5	81	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*		*Limits: 60-125 %*		*Dilution: 1x*					

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100400-BLK1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 21:10								**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 22:20								**C-05**
EPA 8081B												
Aldrin	27.6	1.00	2.00	ug/kg wet	1	50.0	---	55	45-136%	---	---	
gamma-BHC (Lindane)	30.2	1.00	2.00	ug/kg wet	1	50.0	---	60	49-135%	---	---	Q-41
cis-Chlordane	40.4	1.00	2.00	ug/kg wet	1	50.0	---	81	54-133%	---	---	
trans-Chlordane	39.2	1.00	2.00	ug/kg wet	1	50.0	---	78	53-135%	---	---	
4,4'-DDD	54.1	1.00	2.00	ug/kg wet	1	50.0	---	108	56-139%	---	---	
4,4'-DDE	45.9	1.00	2.00	ug/kg wet	1	50.0	---	92	56-134%	---	---	
4,4'-DDT	51.7	1.00	2.00	ug/kg wet	1	50.0	---	103	50-141%	---	---	
Dieldrin	40.6	1.00	2.00	ug/kg wet	1	50.0	---	81	56-136%	---	---	
Endosulfan I	41.9	1.00	2.00	ug/kg wet	1	50.0	---	84	53-132%	---	---	
Endosulfan II	55.0	1.00	2.00	ug/kg wet	1	50.0	---	110	53-134%	---	---	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 22:20							**C-05**
Endosulfan sulfate	61.5	1.00	2.00	ug/kg wet	1	50.0	---	123	55-136%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*112 %*	*55-130 %*			*"*					
LCS (0100400-BS2)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 22:38							**C-05**
EPA 8081B												
cis-Nonachlor	50.0	1.00	2.00	ug/kg wet	1	50.0	---	100	68-121%	---	---	
2,4'-DDD	48.5	1.00	2.00	ug/kg wet	1	50.0	---	97	58-128%	---	---	
2,4'-DDE	38.2	1.00	2.00	ug/kg wet	1	50.0	---	76	49-125%	---	---	
2,4'-DDT	54.0	1.00	2.00	ug/kg wet	1	50.0	---	108	66-145%	---	---	
Oxychlordane	35.8	1.00	2.00	ug/kg wet	1	50.0	---	72	56-120%	---	---	
trans-Nonachlor	38.9	1.00	2.00	ug/kg wet	1	50.0	---	78	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 56 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							**C-05**
QC Source Sample: Non-SDG (A0I0826-11RE1)												
Aldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Dieldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	34.3	68.6	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							**C-05**
QC Source Sample: Non-SDG (A0I0826-11RE1)												
Oxychlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 44 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*95 %*		*55-130 %*			*"*				
Matrix Spike (0100400-MS1)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:06							**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
EPA 8081B												
Aldrin	52.1	9.92	19.8	ug/kg dry	5	49.6	ND	105	45-136%	---	---	
gamma-BHC (Lindane)	66.9	19.8	19.8	ug/kg dry	5	49.6	ND	135	49-135%	---	---	
cis-Chlordane	62.6	9.92	19.8	ug/kg dry	5	49.6	ND	126	54-133%	---	---	
trans-Chlordane	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-135%	---	---	
4,4'-DDD	73.3	19.8	19.8	ug/kg dry	5	49.6	ND	**148**	**56-139%**	---	---	Q-02
4,4'-DDE	74.6	9.92	19.8	ug/kg dry	5	49.6	25.8	98	56-134%	---	---	
4,4'-DDT	349	9.92	19.8	ug/kg dry	5	49.6	268	**165**	**50-141%**	---	---	Q-03
Dieldrin	52.8	9.92	19.8	ug/kg dry	5	49.6	ND	106	56-136%	---	---	
Endosulfan I	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-132%	---	---	
Endosulfan II	56.4	9.92	19.8	ug/kg dry	5	49.6	ND	114	53-134%	---	---	
Endosulfan sulfate	78.8	31.7	31.7	ug/kg dry	5	49.6	ND	**159**	**55-136%**	---	---	Q-41, R-02
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*		*Limits: 42-129 %*			*Dilution: 5x*				
Decachlorobiphenyl (Surr)			*347 %*		*55-130 %*			*"*				S-04
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:23							**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
EPA 8081B												
cis-Nonachlor	66.7	19.9	19.9	ug/kg dry	5	49.7	ND	**134**	**68-121%**	---	---	Q-02
2,4'-DDD	55.1	9.94	19.9	ug/kg dry	5	49.7	ND	111	58-128%	---	---	
2,4'-DDE	54.9	9.94	19.9	ug/kg dry	5	49.7	ND	110	49-125%	---	---	
2,4'-DDT	93.0	9.94	19.9	ug/kg dry	5	49.7	43.3	100	66-145%	---	---	
Oxychlordane	56.9	9.94	19.9	ug/kg dry	5	49.7	ND	114	56-120%	---	---	
trans-Nonachlor	48.9	9.94	19.9	ug/kg dry	5	49.7	ND	98	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*		*Limits: 42-129 %*			*Dilution: 5x*				

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56 Analyzed: 10/18/20 00:23									**C-05**
QC Source Sample: Non-SDG (A0J0312-13RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 340 %*	*Limits: 55-130 %*			*Dilution: 5x*					S-04

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
Blank (0100353-BLK1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:12									
EPA 8270E												
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	---	---	---	---	---	---	Q-30
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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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
Blank (0100353-BLK1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:12									
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 83 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*75 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*78 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*83 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*78 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*74 %*		*39-132 %*			*"*				
LCS (0100353-BS1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 10:55									
EPA 8270E												
Acenaphthene	441	2.66	5.34	ug/kg wet	2	533	---	83	40-123%	---	---	
Acenaphthylene	464	2.66	5.34	ug/kg wet	2	533	---	87	32-132%	---	---	
Anthracene	431	2.66	5.34	ug/kg wet	2	533	---	81	47-123%	---	---	
Benz(a)anthracene	440	2.66	5.34	ug/kg wet	2	533	---	82	49-126%	---	---	
Benzo(a)pyrene	452	4.00	8.00	ug/kg wet	2	533	---	85	45-129%	---	---	
Benzo(b)fluoranthene	448	4.00	8.00	ug/kg wet	2	533	---	84	45-132%	---	---	
Benzo(k)fluoranthene	432	4.00	8.00	ug/kg wet	2	533	---	81	47-132%	---	---	
Benzo(g,h,i)perylene	431	2.66	5.34	ug/kg wet	2	533	---	81	43-134%	---	---	
Chrysene	438	2.66	5.34	ug/kg wet	2	533	---	82	50-124%	---	---	
Dibenz(a,h)anthracene	415	2.66	5.34	ug/kg wet	2	533	---	78	45-134%	---	---	
Fluoranthene	448	2.66	5.34	ug/kg wet	2	533	---	84	50-127%	---	---	
Fluorene	433	2.66	5.34	ug/kg wet	2	533	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	398	2.66	5.34	ug/kg wet	2	533	---	75	45-133%	---	---	
1-Methylnaphthalene	458	5.34	10.7	ug/kg wet	2	533	---	86	40-120%	---	---	
2-Methylnaphthalene	471	5.34	10.7	ug/kg wet	2	533	---	88	38-122%	---	---	
Naphthalene	428	5.34	10.7	ug/kg wet	2	533	---	80	35-123%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
LCS (0100353-BS1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 10:55							
Phenanthrene	408	2.66	5.34	ug/kg wet	2	533	---	77	50-121%	---	---	
Pyrene	456	2.66	5.34	ug/kg wet	2	533	---	86	47-127%	---	---	
Carbazole	231	4.00	8.00	ug/kg wet	2	533	---	**43**	**50-123%**	---	---	Q-30
Dibenzofuran	432	2.66	5.34	ug/kg wet	2	533	---	81	44-120%	---	---	
2-Chlorophenol	420	13.3	26.6	ug/kg wet	2	533	---	79	34-121%	---	---	
4-Chloro-3-methylphenol	525	26.6	53.4	ug/kg wet	2	533	---	99	45-122%	---	---	
2,4-Dichlorophenol	490	13.3	26.6	ug/kg wet	2	533	---	92	40-122%	---	---	
2,4-Dimethylphenol	506	13.3	26.6	ug/kg wet	2	533	---	95	30-127%	---	---	
2,4-Dinitrophenol	537	66.6	133	ug/kg wet	2	533	---	101	10-137%	---	---	
4,6-Dinitro-2-methylphenol	469	66.6	133	ug/kg wet	2	533	---	88	29-132%	---	---	
2-Methylphenol	460	6.66	13.3	ug/kg wet	2	533	---	86	32-122%	---	---	
3+4-Methylphenol(s)	465	6.66	13.3	ug/kg wet	2	533	---	87	34-120%	---	---	
2-Nitrophenol	464	26.6	53.4	ug/kg wet	2	533	---	87	36-123%	---	---	
4-Nitrophenol	473	26.6	53.4	ug/kg wet	2	533	---	89	30-132%	---	---	
Pentachlorophenol (PCP)	440	26.6	53.4	ug/kg wet	2	533	---	82	25-133%	---	---	
Phenol	439	5.34	10.7	ug/kg wet	2	533	---	82	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	448	13.3	26.6	ug/kg wet	2	533	---	84	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	462	13.3	26.6	ug/kg wet	2	533	---	87	40-120%	---	---	
2,4,5-Trichlorophenol	456	13.3	26.6	ug/kg wet	2	533	---	85	41-124%	---	---	
2,4,6-Trichlorophenol	455	13.3	26.6	ug/kg wet	2	533	---	85	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	496	40.0	80.0	ug/kg wet	2	533	---	93	51-133%	---	---	
Butyl benzyl phthalate	495	26.6	53.4	ug/kg wet	2	533	---	93	48-132%	---	---	
Diethylphthalate	433	26.6	53.4	ug/kg wet	2	533	---	81	50-124%	---	---	
Dimethylphthalate	442	26.6	53.4	ug/kg wet	2	533	---	83	48-124%	---	---	
Di-n-butylphthalate	463	26.6	53.4	ug/kg wet	2	533	---	87	51-128%	---	---	
Di-n-octyl phthalate	483	26.6	53.4	ug/kg wet	2	533	---	91	45-140%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 79 %*		*Limits: 37-122 %*			*Dilution: 2x*				
2-Fluorobiphenyl (Surr)			*79 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*80 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*80 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*77 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*81 %*		*39-132 %*			*"*				
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 13:42							

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 13:42							
QC Source Sample: Non-SDG (A0I0826-01RE1)												
Acenaphthene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Acenaphthylene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Anthracene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Benz(a)anthracene	**18.9**	5.30	10.6	ug/kg wet	4	---	27.2	---	---	**36**	**30%**	Q-04
Benzo(a)pyrene	**31.6**	7.97	15.9	ug/kg wet	4	---	45.1	---	---	**35**	**30%**	Q-04
Benzo(b)fluoranthene	**37.9**	7.97	15.9	ug/kg wet	4	---	55.9	---	---	**38**	**30%**	Q-04
Benzo(k)fluoranthene	**15.1**	7.97	15.9	ug/kg wet	4	---	21.1	---	---	**34**	**30%**	Q-05, J
Benzo(g,h,i)perylene	**24.1**	5.30	10.6	ug/kg wet	4	---	35.0	---	---	**37**	**30%**	Q-04
Chrysene	**20.6**	5.30	10.6	ug/kg wet	4	---	32.2	---	---	**44**	**30%**	Q-04
Dibenz(a,h)anthracene	ND	5.30	10.6	ug/kg wet	4	---	6.88	---	---	***	**30%**	Q-05
Fluoranthene	**26.7**	5.30	10.6	ug/kg wet	4	---	42.3	---	---	**45**	**30%**	Q-04
Fluorene	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**20.4**	5.30	10.6	ug/kg wet	4	---	29.7	---	---	**37**	**30%**	Q-04
1-Methylnaphthalene	ND	10.6	21.2	ug/kg wet	4	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	10.6	21.2	ug/kg wet	4	---	ND	---	---	---	30%	
Naphthalene	ND	10.6	21.2	ug/kg wet	4	---	ND	---	---	---	30%	
Phenanthrene	**11.0**	5.30	10.6	ug/kg wet	4	---	18.0	---	---	**48**	**30%**	Q-05
Pyrene	**27.6**	5.30	10.6	ug/kg wet	4	---	42.9	---	---	**43**	**30%**	Q-04
Carbazole	ND	7.97	15.9	ug/kg wet	4	---	ND	---	---	---	30%	Q-30
Dibenzofuran	ND	5.30	10.6	ug/kg wet	4	---	ND	---	---	---	30%	
2-Chlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
4-Chloro-3-methylphenol	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
2,4-Dichlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4-Dimethylphenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4-Dinitrophenol	ND	133	266	ug/kg wet	4	---	ND	---	---	---	30%	
4,6-Dinitro-2-methylphenol	ND	133	266	ug/kg wet	4	---	ND	---	---	---	30%	
2-Methylphenol	ND	13.3	26.6	ug/kg wet	4	---	ND	---	---	---	30%	
3+4-Methylphenol(s)	ND	13.3	26.6	ug/kg wet	4	---	ND	---	---	---	30%	
2-Nitrophenol	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
4-Nitrophenol	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Pentachlorophenol (PCP)	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Phenol	ND	10.6	21.2	ug/kg wet	4	---	21.3	---	---	***	**30%**	Q-05
2,3,4,6-Tetrachlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
Duplicate (0100353-DUP1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 13:42									
QC Source Sample: Non-SDG (A0I0826-01RE1)												
2,3,5,6-Tetrachlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4,5-Trichlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
2,4,6-Trichlorophenol	ND	26.6	53.0	ug/kg wet	4	---	ND	---	---	---	30%	
Bis(2-ethylhexyl)phthalate	ND	79.7	159	ug/kg wet	4	---	ND	---	---	---	30%	
Butyl benzyl phthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Diethylphthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Dimethylphthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Di-n-butylphthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Di-n-octyl phthalate	ND	53.0	106	ug/kg wet	4	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*60 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*55 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*66 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*59 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*62 %*		*39-132 %*		*"*					
Matrix Spike (0100353-MS1)			Prepared: 10/10/20 09:20 Analyzed: 10/12/20 15:49									
QC Source Sample: Non-SDG (A0J0265-03RE2)												
EPA 8270E												
Acenaphthene	417	2.64	5.30	ug/kg wet	2	529	ND	79	40-123%	---	---	
Acenaphthylene	444	2.64	5.30	ug/kg wet	2	529	ND	84	32-132%	---	---	
Anthracene	428	2.64	5.30	ug/kg wet	2	529	ND	81	47-123%	---	---	
Benz(a)anthracene	427	2.64	5.30	ug/kg wet	2	529	ND	81	49-126%	---	---	
Benzo(a)pyrene	431	3.97	7.94	ug/kg wet	2	529	ND	81	45-129%	---	---	
Benzo(b)fluoranthene	435	3.97	7.94	ug/kg wet	2	529	ND	82	45-132%	---	---	
Benzo(k)fluoranthene	406	3.97	7.94	ug/kg wet	2	529	ND	77	47-132%	---	---	
Benzo(g,h,i)perylene	393	2.64	5.30	ug/kg wet	2	529	ND	74	43-134%	---	---	
Chrysene	431	2.64	5.30	ug/kg wet	2	529	ND	81	50-124%	---	---	
Dibenz(a,h)anthracene	394	2.64	5.30	ug/kg wet	2	529	ND	74	45-134%	---	---	
Fluoranthene	432	2.64	5.30	ug/kg wet	2	529	2.87	81	50-127%	---	---	
Fluorene	412	2.64	5.30	ug/kg wet	2	529	ND	78	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	368	2.64	5.30	ug/kg wet	2	529	ND	69	45-133%	---	---	
1-Methylnaphthalene	433	5.30	10.6	ug/kg wet	2	529	ND	82	40-120%	---	---	

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Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
Matrix Spike (0100353-MS1)			Prepared: 10/10/20 09:20		Analyzed: 10/12/20 15:49							
QC Source Sample: Non-SDG (A0J0265-03RE2)												
2-Methylnaphthalene	444	5.30	10.6	ug/kg wet	2	529	ND	84	38-122%	---	---	
Naphthalene	397	5.30	10.6	ug/kg wet	2	529	5.39	74	35-123%	---	---	
Phenanthrene	405	2.64	5.30	ug/kg wet	2	529	3.51	76	50-121%	---	---	
Pyrene	437	2.64	5.30	ug/kg wet	2	529	ND	82	47-127%	---	---	
Carbazole	403	3.97	7.94	ug/kg wet	2	529	ND	76	50-123%	---	---	Q-30
Dibenzofuran	412	2.64	5.30	ug/kg wet	2	529	ND	78	44-120%	---	---	
2-Chlorophenol	389	13.2	26.4	ug/kg wet	2	529	ND	73	34-121%	---	---	
4-Chloro-3-methylphenol	445	26.4	53.0	ug/kg wet	2	529	ND	84	45-122%	---	---	
2,4-Dichlorophenol	424	13.2	26.4	ug/kg wet	2	529	ND	80	40-122%	---	---	
2,4-Dimethylphenol	325	13.2	26.4	ug/kg wet	2	529	ND	61	30-127%	---	---	
2,4-Dinitrophenol	552	66.1	132	ug/kg wet	2	529	ND	104	10-137%	---	---	
4,6-Dinitro-2-methylphenol	427	66.1	132	ug/kg wet	2	529	ND	81	29-132%	---	---	
2-Methylphenol	365	6.61	13.2	ug/kg wet	2	529	ND	69	32-122%	---	---	
3+4-Methylphenol(s)	382	6.61	13.2	ug/kg wet	2	529	ND	72	34-120%	---	---	
2-Nitrophenol	445	26.4	53.0	ug/kg wet	2	529	ND	84	36-123%	---	---	
4-Nitrophenol	394	26.4	53.0	ug/kg wet	2	529	ND	74	30-132%	---	---	
Pentachlorophenol (PCP)	490	26.4	53.0	ug/kg wet	2	529	ND	93	25-133%	---	---	
Phenol	382	5.30	10.6	ug/kg wet	2	529	ND	72	34-121%	---	---	
2,3,4,6-Tetrachlorophenol	420	13.2	26.4	ug/kg wet	2	529	ND	79	44-125%	---	---	
2,3,5,6-Tetrachlorophenol	435	13.2	26.4	ug/kg wet	2	529	ND	82	40-120%	---	---	
2,4,5-Trichlorophenol	424	13.2	26.4	ug/kg wet	2	529	ND	80	41-124%	---	---	
2,4,6-Trichlorophenol	412	13.2	26.4	ug/kg wet	2	529	ND	78	39-126%	---	---	
Bis(2-ethylhexyl)phthalate	581	39.7	79.4	ug/kg wet	2	529	40.8	102	51-133%	---	---	
Butyl benzyl phthalate	521	26.4	53.0	ug/kg wet	2	529	ND	98	48-132%	---	---	
Diethylphthalate	418	26.4	53.0	ug/kg wet	2	529	ND	79	50-124%	---	---	
Dimethylphthalate	428	26.4	53.0	ug/kg wet	2	529	ND	81	48-124%	---	---	
Di-n-butylphthalate	462	26.4	53.0	ug/kg wet	2	529	ND	87	51-128%	---	---	
Di-n-octyl phthalate	548	26.4	53.0	ug/kg wet	2	529	ND	104	45-140%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 77 %*	*Limits: 37-122 %*	*Dilution: 2x*
2-Fluorobiphenyl (Surr)	*72 %*	*44-120 %*	*"*
Phenol-d6 (Surr)	*70 %*	*33-122 %*	*"*
p-Terphenyl-d14 (Surr)	*79 %*	*54-127 %*	*"*
2-Fluorophenol (Surr)	*64 %*	*35-120 %*	*"*

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100353 - EPA 3546							**Soil**					
Matrix Spike (0100353-MS1)					Prepared: 10/10/20 09:20 Analyzed: 10/12/20 15:49							
QC Source Sample: Non-SDG (A0J0265-03RE2)												
Surr: 2,4,6-Tribromophenol (Surr)					*Recovery: 73 %*	*Limits: 39-132 %*						*Dilution: 2x*

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100616 - EPA 3546							**Soil**					
Blank (0100616-BLK1)			Prepared: 10/19/20 11:21		Analyzed: 10/19/20 15:34							
EPA 8270E												
Acenaphthene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	17.6	35.3	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 88 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*77 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*89 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*81 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*84 %*		*39-132 %*			*"*				
LCS (0100616-BS1)			Prepared: 10/19/20 11:21		Analyzed: 10/19/20 16:10							
EPA 8270E												
Acenaphthene	462	2.66	5.34	ug/kg wet	2	533	---	87	40-123%	---	---	
Acenaphthylene	488	2.66	5.34	ug/kg wet	2	533	---	91	32-132%	---	---	
Anthracene	452	2.66	5.34	ug/kg wet	2	533	---	85	47-123%	---	---	
Benz(a)anthracene	472	2.66	5.34	ug/kg wet	2	533	---	89	49-126%	---	---	
Benzo(a)pyrene	483	4.00	8.00	ug/kg wet	2	533	---	91	45-129%	---	---	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100616 - EPA 3546							**Soil**					
LCS (0100616-BS1)			Prepared: 10/19/20 11:21		Analyzed: 10/19/20 16:10							
Benzo(b)fluoranthene	475	4.00	8.00	ug/kg wet	2	533	---	89	45-132%	---	---	
Benzo(k)fluoranthene	454	4.00	8.00	ug/kg wet	2	533	---	85	47-132%	---	---	
Benzo(g,h,i)perylene	444	2.66	5.34	ug/kg wet	2	533	---	83	43-134%	---	---	
Chrysene	466	2.66	5.34	ug/kg wet	2	533	---	87	50-124%	---	---	
Dibenz(a,h)anthracene	434	2.66	5.34	ug/kg wet	2	533	---	81	45-134%	---	---	
Fluoranthene	482	2.66	5.34	ug/kg wet	2	533	---	90	50-127%	---	---	
Fluorene	452	2.66	5.34	ug/kg wet	2	533	---	85	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	417	2.66	5.34	ug/kg wet	2	533	---	78	45-133%	---	---	
1-Methylnaphthalene	468	5.34	10.7	ug/kg wet	2	533	---	88	40-120%	---	---	
2-Methylnaphthalene	470	5.34	10.7	ug/kg wet	2	533	---	88	38-122%	---	---	
Naphthalene	429	5.34	10.7	ug/kg wet	2	533	---	80	35-123%	---	---	
Phenanthrene	433	2.66	5.34	ug/kg wet	2	533	---	81	50-121%	---	---	
Pyrene	496	2.66	5.34	ug/kg wet	2	533	---	93	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	517	40.0	80.0	ug/kg wet	2	533	---	97	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 87 %*		*Limits: 37-122 %*		*Dilution: 2x*					
2-Fluorobiphenyl (Surr)			*86 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*86 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*92 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*86 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*94 %*		*39-132 %*		*"*					
Duplicate (0100616-DUP1)			Prepared: 10/19/20 11:21		Analyzed: 10/19/20 18:35							
QC Source Sample: T4RB-19L (A0J0199-04RE1)												
EPA 8270E												
Acenaphthene	ND	13.9	27.9	ug/kg dry	10	---	ND	---	---	---	30%	
Acenaphthylene	ND	13.9	27.9	ug/kg dry	10	---	ND	---	---	---	30%	
Anthracene	**14.0**	13.9	27.9	ug/kg dry	10	---	ND	---	---		**30%**	Q-17, J
Benz(a)anthracene	**59.7**	13.9	27.9	ug/kg dry	10	---	56.7	---	---	5	30%	
Benzo(a)pyrene	**90.5**	20.9	41.8	ug/kg dry	10	---	76.7	---	---	17	30%	
Benzo(b)fluoranthene	**128**	20.9	41.8	ug/kg dry	10	---	113	---	---	13	30%	
Benzo(k)fluoranthene	**58.1**	20.9	41.8	ug/kg dry	10	---	49.9	---	---	15	30%	M-05
Benzo(g,h,i)perylene	**84.1**	13.9	27.9	ug/kg dry	10	---	78.6	---	---	7	30%	
Chrysene	**74.3**	13.9	27.9	ug/kg dry	10	---	62.0	---	---	18	30%	
Dibenz(a,h)anthracene	**15.3**	13.9	27.9	ug/kg dry	10	---	ND	---	---		**30%**	Q-17, J

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100616 - EPA 3546							**Soil**					
Duplicate (0100616-DUP1)			Prepared: 10/19/20 11:21		Analyzed: 10/19/20 18:35							
QC Source Sample: T4RB-19L (A0J0199-04RE1)												
Fluoranthene	**99.5**	13.9	27.9	ug/kg dry	10	---	91.7	---	---	8	30%	
Fluorene	ND	13.9	27.9	ug/kg dry	10	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**82.8**	13.9	27.9	ug/kg dry	10	---	67.5	---	---	20	30%	
1-Methylnaphthalene	ND	27.9	55.7	ug/kg dry	10	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	27.9	55.7	ug/kg dry	10	---	ND	---	---	---	30%	
Naphthalene	ND	27.9	55.7	ug/kg dry	10	---	ND	---	---	---	30%	
Phenanthrene	**54.5**	13.9	27.9	ug/kg dry	10	---	50.3	---	---	8	30%	
Pyrene	**97.2**	13.9	27.9	ug/kg dry	10	---	92.9	---	---	5	30%	
Bis(2-ethylhexyl)phthalate	ND	209	418	ug/kg dry	10	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 69 %*		*Limits: 37-122 %*		*Dilution: 10x*					
2-Fluorobiphenyl (Surr)			*75 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*36 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*86 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*44 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*56 %*		*39-132 %*		*"*					
Matrix Spike (0100616-MS1)			Prepared: 10/19/20 11:21		Analyzed: 10/19/20 19:48							
QC Source Sample: DUP-4 (A0J0199-11RE1)												
Acenaphthene	487	6.96	14.0	ug/kg dry	5	559	ND	87	40-123%	---	---	
Acenaphthylene	472	6.96	14.0	ug/kg dry	5	559	7.18	83	32-132%	---	---	
Anthracene	500	6.96	14.0	ug/kg dry	5	559	10.9	88	47-123%	---	---	
Benz(a)anthracene	487	6.96	14.0	ug/kg dry	5	559	27.5	82	49-126%	---	---	
Benzo(a)pyrene	471	10.5	20.9	ug/kg dry	5	559	42.6	77	45-129%	---	---	
Benzo(b)fluoranthene	522	10.5	20.9	ug/kg dry	5	559	49.4	85	45-132%	---	---	
Benzo(k)fluoranthene	471	10.5	20.9	ug/kg dry	5	559	23.2	80	47-132%	---	---	
Benzo(g,h,i)perylene	480	6.96	14.0	ug/kg dry	5	559	43.4	78	43-134%	---	---	
Chrysene	493	6.96	14.0	ug/kg dry	5	559	31.9	83	50-124%	---	---	
Dibenz(a,h)anthracene	437	6.96	14.0	ug/kg dry	5	559	ND	78	45-134%	---	---	
Fluoranthene	518	6.96	14.0	ug/kg dry	5	559	49.6	84	50-127%	---	---	
Fluorene	485	6.96	14.0	ug/kg dry	5	559	ND	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	436	6.96	14.0	ug/kg dry	5	559	34.8	72	45-133%	---	---	
1-Methylnaphthalene	490	14.0	27.9	ug/kg dry	5	559	ND	88	40-120%	---	---	
2-Methylnaphthalene	492	14.0	27.9	ug/kg dry	5	559	ND	88	38-122%	---	---	

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100616 - EPA 3546							**Soil**					
Matrix Spike (0100616-MS1)			Prepared: 10/19/20 11:21 Analyzed: 10/19/20 19:48									
QC Source Sample: DUP-4 (A0J0199-11RE1)												
Naphthalene	456	14.0	27.9	ug/kg dry	5	559	ND	82	35-123%	---	---	
Phenanthrene	494	6.96	14.0	ug/kg dry	5	559	25.8	84	50-121%	---	---	
Pyrene	530	6.96	14.0	ug/kg dry	5	559	55.6	85	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	581	105	209	ug/kg dry	5	559	ND	104	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 80 %*	*Limits: 37-122 %*			*Dilution: 5x*					
2-Fluorobiphenyl (Surr)			*84 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*61 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*89 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*63 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*89 %*	*39-132 %*			*"*					

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100604 - EPA 3051A							**Soil**					
Blank (0100604-BLK1)			Prepared: 10/19/20 08:44		Analyzed: 10/19/20 19:07							
EPA 6020A												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (0100604-BS1)			Prepared: 10/19/20 08:44		Analyzed: 10/19/20 19:12							
EPA 6020A												
Arsenic	49.8	0.500	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Cadmium	48.2	0.100	0.200	mg/kg wet	10	50.0	---	96	80-120%	---	---	
Copper	49.9	1.00	2.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Lead	53.9	0.100	0.200	mg/kg wet	10	50.0	---	108	80-120%	---	---	
Mercury	1.05	0.0400	0.0800	mg/kg wet	10	1.00	---	105	80-120%	---	---	
Zinc	46.7	2.00	4.00	mg/kg wet	10	50.0	---	93	80-120%	---	---	
Duplicate (0100604-DUP1)			Prepared: 10/19/20 08:44		Analyzed: 10/19/20 19:47							
QC Source Sample: T4RB-19L (A0J0199-04)												
EPA 6020A												
Arsenic	**4.64**	0.523	1.05	mg/kg dry	10	---	4.88	---	---	5	20%	
Cadmium	**10.2**	0.105	0.209	mg/kg dry	10	---	10.0	---	---	2	20%	
Copper	**30.1**	1.05	2.09	mg/kg dry	10	---	28.2	---	---	7	20%	
Lead	**160**	0.105	0.209	mg/kg dry	10	---	173	---	---	8	20%	
Mercury	ND	0.0418	0.0836	mg/kg dry	10	---	ND	---	---	---	20%	
Zinc	**1400**	2.09	4.18	mg/kg dry	10	---	1420	---	---	1	20%	
Matrix Spike (0100604-MS1)			Prepared: 10/19/20 08:44		Analyzed: 10/19/20 19:52							
QC Source Sample: T4RB-19L (A0J0199-04)												
EPA 6020A												
Arsenic	56.2	0.530	1.06	mg/kg dry	10	53.0	4.88	97	75-125%	---	---	
Cadmium	63.0	0.106	0.212	mg/kg dry	10	53.0	10.0	100	75-125%	---	---	
Copper	78.3	1.06	2.12	mg/kg dry	10	53.0	28.2	95	75-125%	---	---	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100604 - EPA 3051A							**Soil**					
Matrix Spike (0100604-MS1)			Prepared: 10/19/20 08:44		Analyzed: 10/19/20 19:52							
QC Source Sample: T4RB-19L (A0J0199-04)												
Lead	167	0.106	0.212	mg/kg dry	10	53.0	173	**-12**	**75-125%**	---	---	Q-04
Mercury	1.03	0.0424	0.0848	mg/kg dry	10	1.06	ND	97	75-125%	---	---	
Zinc	1450	2.12	4.24	mg/kg dry	10	53.0	1420	**60**	**75-125%**	---	---	Q-03

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

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 0100307 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100307-DUP1)			Prepared: 10/09/20 08:58			Analyzed: 10/12/20 08:43						
QC Source Sample: T4RB-18U (A0J0199-01)												
EPA 8000D												
% Solids	**90.3**	---	1.00	%	1	---	88.8	---	---	2	10%	
Duplicate (0100307-DUP2)			Prepared: 10/09/20 08:58			Analyzed: 10/12/20 08:43						
QC Source Sample: Non-SDG (A0J0225-04)												
% Solids	**72.8**	---	1.00	%	1	---	72.9	---	---	0.06	10%	
Duplicate (0100307-DUP3)			Prepared: 10/09/20 08:58			Analyzed: 10/12/20 08:43						
QC Source Sample: Non-SDG (A0J0267-02)												
% Solids	**87.8**	---	1.00	%	1	---	84.4	---	---	4	10%	
Duplicate (0100307-DUP4)			Prepared: 10/09/20 18:43			Analyzed: 10/12/20 08:43						
QC Source Sample: Non-SDG (A0J0325-02)												
% Solids	**86.3**	---	1.00	%	1	---	87.5	---	---	1	10%	
Duplicate (0100307-DUP5)			Prepared: 10/09/20 18:43			Analyzed: 10/12/20 08:43						
QC Source Sample: Non-SDG (A0J0338-02)												
% Solids	**75.9**	---	1.00	%	1	---	76.4	---	---	0.6	10%	

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

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0485 - EPA 3546 (Microwave)							**Solid**					
Blank (BIJ0485-BLK1)			Prepared: 10/15/20 12:25 Analyzed: 10/23/20 11:00									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.450	3.86	ug/kg wet	1	---	---	---	---	---	---	U
Surr: Tripentyltin		*Recovery:*	*98.0 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*81.3 %*		*30-160 %*			*"*				
LCS (BIJ0485-BS1)			Prepared: 10/15/20 12:25 Analyzed: 10/23/20 11:17									
EPA 8270E-SIM												
Tributyltin Ion	36.1	0.450	3.86	ug/kg wet	1	44.554	---	81.1	30-160%	---	---	
Surr: Tripentyltin		*Recovery:*	*94.0 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*73.9 %*		*30-160 %*			*"*				
LCS Dup (BIJ0485-BSD1)			Prepared: 10/15/20 12:25 Analyzed: 10/23/20 11:33									
EPA 8270E-SIM												
Tributyltin Ion	41.1	0.450	3.86	ug/kg wet	1	44.554	---	92.3	30-160%	12.9	30%	
Surr: Tripentyltin		*Recovery:*	*95.2 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*80.4 %*		*30-160 %*			*"*				

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100418							
A0J0199-01	Soil	NWTPH-Dx	10/05/20 12:25	10/13/20 10:45	10.06g/5mL	10g/5mL	0.99
A0J0199-03	Soil	NWTPH-Dx	10/05/20 14:10	10/13/20 10:45	10.15g/5mL	10g/5mL	0.99
A0J0199-04	Soil	NWTPH-Dx	10/05/20 14:45	10/13/20 10:45	10.36g/5mL	10g/5mL	0.97
A0J0199-05	Soil	NWTPH-Dx	10/06/20 09:30	10/13/20 10:45	10.45g/5mL	10g/5mL	0.96
A0J0199-06	Soil	NWTPH-Dx	10/06/20 09:55	10/13/20 10:45	10.04g/5mL	10g/5mL	1.00
A0J0199-07	Soil	NWTPH-Dx	10/06/20 10:35	10/13/20 10:45	10.21g/5mL	10g/5mL	0.98
A0J0199-08	Soil	NWTPH-Dx	10/06/20 11:05	10/13/20 10:45	10.51g/5mL	10g/5mL	0.95
A0J0199-10	Soil	NWTPH-Dx	10/06/20 12:45	10/13/20 10:45	10.35g/5mL	10g/5mL	0.97
A0J0199-11	Soil	NWTPH-Dx	10/06/20 00:00	10/13/20 10:45	10.17g/5mL	10g/5mL	0.98
Batch: 0100429							
A0J0199-09	Soil	NWTPH-Dx	10/06/20 12:20	10/13/20 13:18	10.47g/5mL	10g/5mL	0.96

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100450							
A0J0199-04	Soil	5035A/8260D	10/05/20 14:45	10/05/20 14:45	4.94g/5mL	5g/5mL	1.01
A0J0199-07	Soil	5035A/8260D	10/06/20 10:35	10/06/20 10:35	4.21g/5mL	5g/5mL	1.19

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100594							
A0J0199-01	Soil	EPA 8082A	10/05/20 12:25	10/19/20 07:09	10.51g/2mL	10g/2mL	0.95
A0J0199-03	Soil	EPA 8082A	10/05/20 14:10	10/19/20 07:09	10.67g/2mL	10g/2mL	0.94
A0J0199-04	Soil	EPA 8082A	10/05/20 14:45	10/19/20 07:09	10.62g/2mL	10g/2mL	0.94
A0J0199-05	Soil	EPA 8082A	10/06/20 09:30	10/19/20 07:09	10.27g/2mL	10g/2mL	0.97
A0J0199-06	Soil	EPA 8082A	10/06/20 09:55	10/19/20 07:09	10.29g/2mL	10g/2mL	0.97
A0J0199-07	Soil	EPA 8082A	10/06/20 10:35	10/19/20 07:09	10.05g/2mL	10g/2mL	1.00
A0J0199-08	Soil	EPA 8082A	10/06/20 11:05	10/19/20 07:09	10.28g/2mL	10g/2mL	0.97
A0J0199-09	Soil	EPA 8082A	10/06/20 12:20	10/19/20 07:09	10.71g/2mL	10g/2mL	0.93
A0J0199-10	Soil	EPA 8082A	10/06/20 12:45	10/19/20 07:09	10.44g/2mL	10g/2mL	0.96
A0J0199-11	Soil	EPA 8082A	10/06/20 00:00	10/19/20 07:09	10.63g/2mL	10g/2mL	0.94

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

SAMPLE PREPARATION INFORMATION

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100400							
A0J0199-04RE1	Soil	EPA 8081B	10/05/20 14:45	10/10/20 09:56	10.44g/10mL	10g/5mL	1.92
A0J0199-07RE1	Soil	EPA 8081B	10/06/20 10:35	10/10/20 09:56	10.31g/10mL	10g/5mL	1.94

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100353							
A0J0199-01	Soil	EPA 8270E	10/05/20 12:25	10/10/20 09:20	15.19g/2mL	15g/2mL	0.99
A0J0199-03	Soil	EPA 8270E	10/05/20 14:10	10/10/20 09:20	15.42g/2mL	15g/2mL	0.97
Batch: 0100616							
A0J0199-04RE1	Soil	EPA 8270E	10/05/20 14:45	10/19/20 11:21	15.84g/2mL	15g/2mL	0.95
A0J0199-05	Soil	EPA 8270E	10/06/20 09:30	10/19/20 11:21	15.66g/2mL	15g/2mL	0.96
A0J0199-06	Soil	EPA 8270E	10/06/20 09:55	10/19/20 11:21	15.53g/2mL	15g/2mL	0.97
A0J0199-07	Soil	EPA 8270E	10/06/20 10:35	10/19/20 11:21	15.6g/2mL	15g/2mL	0.96
A0J0199-08	Soil	EPA 8270E	10/06/20 11:05	10/19/20 11:21	15.33g/2mL	15g/2mL	0.98
A0J0199-09	Soil	EPA 8270E	10/06/20 12:20	10/19/20 11:21	16.1g/2mL	15g/2mL	0.93
A0J0199-10RE1	Soil	EPA 8270E	10/06/20 12:45	10/19/20 11:21	15.43g/2mL	15g/2mL	0.97
A0J0199-11RE1	Soil	EPA 8270E	10/06/20 00:00	10/19/20 11:21	15.7g/2mL	15g/2mL	0.96

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100604							
A0J0199-01	Soil	EPA 6020A	10/05/20 12:25	10/19/20 08:44	0.516g/50mL	0.5g/50mL	0.97
A0J0199-03	Soil	EPA 6020A	10/05/20 14:10	10/19/20 08:44	0.477g/50mL	0.5g/50mL	1.05
A0J0199-03RE1	Soil	EPA 6020A	10/05/20 14:10	10/19/20 08:44	0.477g/50mL	0.5g/50mL	1.05
A0J0199-04	Soil	EPA 6020A	10/05/20 14:45	10/19/20 08:44	0.464g/50mL	0.5g/50mL	1.08
A0J0199-05	Soil	EPA 6020A	10/06/20 09:30	10/19/20 08:44	0.475g/50mL	0.5g/50mL	1.05
A0J0199-06	Soil	EPA 6020A	10/06/20 09:55	10/19/20 08:44	0.494g/50mL	0.5g/50mL	1.01
A0J0199-07	Soil	EPA 6020A	10/06/20 10:35	10/19/20 08:44	0.452g/50mL	0.5g/50mL	1.11
A0J0199-07RE1	Soil	EPA 6020A	10/06/20 10:35	10/19/20 08:44	0.452g/50mL	0.5g/50mL	1.11
A0J0199-08	Soil	EPA 6020A	10/06/20 11:05	10/19/20 08:44	0.486g/50mL	0.5g/50mL	1.03
A0J0199-08RE1	Soil	EPA 6020A	10/06/20 11:05	10/19/20 08:44	0.486g/50mL	0.5g/50mL	1.03
A0J0199-09	Soil	EPA 6020A	10/06/20 12:20	10/19/20 08:44	0.466g/50mL	0.5g/50mL	1.07

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0J0199-09RE1	Soil	EPA 6020A	10/06/20 12:20	10/19/20 08:44	0.466g/50mL	0.5g/50mL	1.07
A0J0199-10	Soil	EPA 6020A	10/06/20 12:45	10/19/20 08:44	0.489g/50mL	0.5g/50mL	1.02
A0J0199-11	Soil	EPA 6020A	10/06/20 00:00	10/19/20 08:44	0.491g/50mL	0.5g/50mL	1.02
A0J0199-11RE1	Soil	EPA 6020A	10/06/20 00:00	10/19/20 08:44	0.491g/50mL	0.5g/50mL	1.02

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100307							
A0J0199-01	Soil	EPA 8000D	10/05/20 12:25	10/09/20 08:58			NA
A0J0199-03	Soil	EPA 8000D	10/05/20 14:10	10/09/20 08:58			NA
A0J0199-04	Soil	EPA 8000D	10/05/20 14:45	10/09/20 08:58			NA
A0J0199-05	Soil	EPA 8000D	10/06/20 09:30	10/09/20 08:58			NA
A0J0199-06	Soil	EPA 8000D	10/06/20 09:55	10/09/20 08:58			NA
A0J0199-07	Soil	EPA 8000D	10/06/20 10:35	10/09/20 08:58			NA
A0J0199-08	Soil	EPA 8000D	10/06/20 11:05	10/09/20 08:58			NA
A0J0199-09	Soil	EPA 8000D	10/06/20 12:20	10/09/20 08:58			NA
A0J0199-10	Soil	EPA 8000D	10/06/20 12:45	10/09/20 08:58			NA
A0J0199-11	Soil	EPA 8000D	10/06/20 00:00	10/09/20 08:58			NA

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Butyl Tins

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0485							
A0J0199-04	Soil	EPA 8270E-SIM	10/05/20 14:45	10/15/20 12:25	5.4g/0.5mL	5g/0.5mL	0.93
A0J0199-07	Soil	EPA 8270E-SIM	10/06/20 10:35	10/15/20 12:25	5.17g/0.5mL	5g/0.5mL	0.97

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QUALIFIER DEFINITIONS

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

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C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
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-15	Results for diesel are estimated due to overlap from the reported oil result.
F-16	Results for oil are estimated due to overlap from the reported diesel result.
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-09	Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
P-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
P-12	Result estimated due to the presence of multiple PCB Aroclors and/or PCB congeners not defined as Aroclors.
Q-02	Spike recovery is outside of established control limits due to matrix interference.
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-17	RPD between original and duplicate sample is outside of established control limits.
Q-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-03	Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.
S-04	Surrogate recovery is outside of established control limits due to a sample matrix effect.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Analytical Resources, Inc.

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U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

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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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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.

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



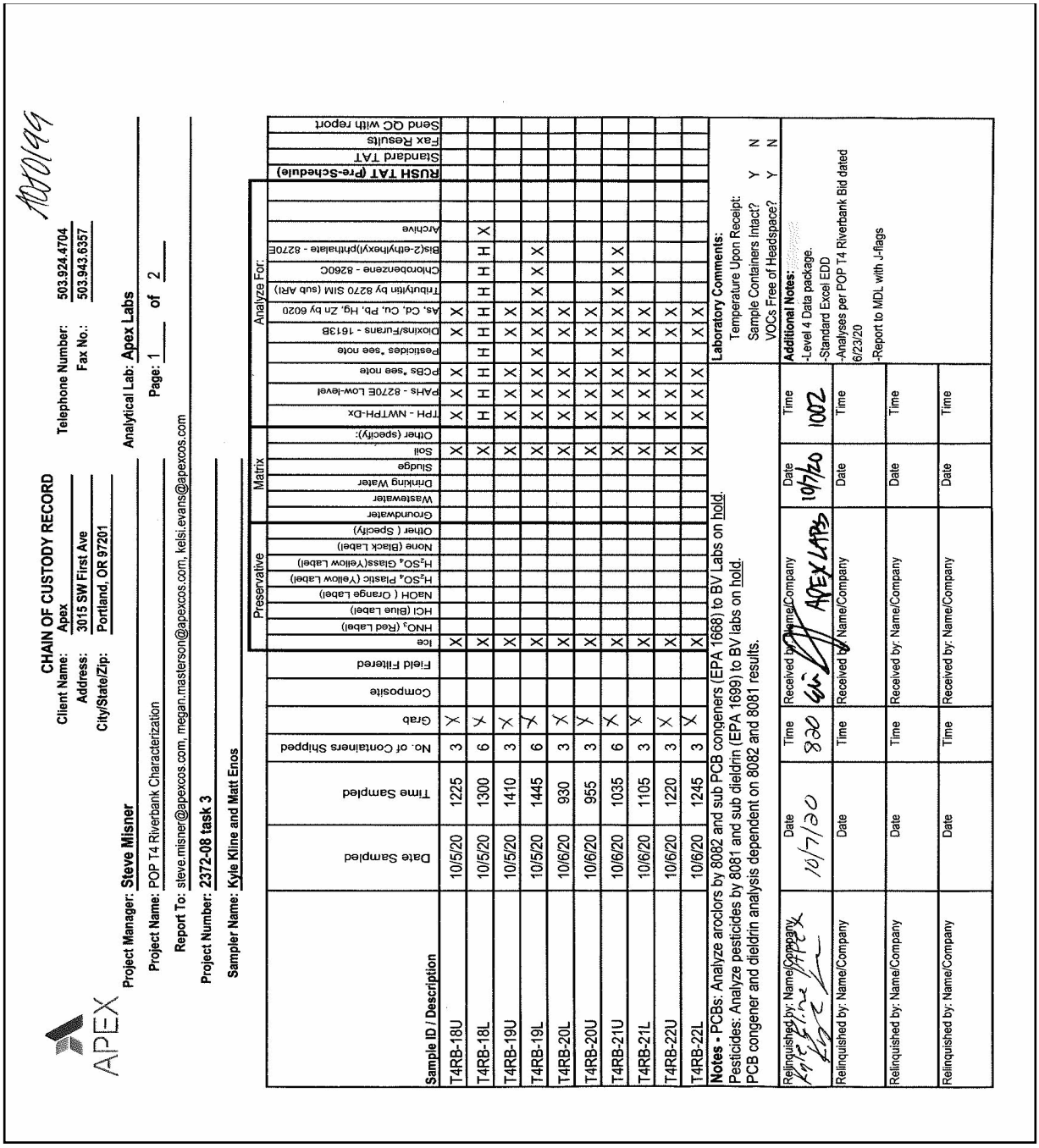
Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**



CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201

Project Manager: Steve Misner | Analytical Lab: Apex Labs
Project Name: POP T4 Riverbank Characterization | Page: 1 of 2
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs "see note	Pesticides "see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub Ari)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-18U	10/5/20	1225	3	X			X												X		X	X	X		X	X							
T4RB-18L	10/5/20	1300	6	X			X												X		H	H	H		H	H		H	H	X			
T4RB-19U	10/5/20	1410	3	X			X												X		X	X	X		X	X							
T4RB-19L	10/5/20	1445	6	X			X												X		X	X	X		X	X		X	X				
T4RB-20L	10/6/20	930	3	X			X												X		X	X	X		X	X							
T4RB-20U	10/6/20	955	3	X			X												X		X	X	X		X	X							
T4RB-21U	10/6/20	1035	6	X			X												X		X	X	X		X	X		X	X				
T4RB-21L	10/6/20	1105	3	X			X												X		X	X	X		X	X							
T4RB-22U	10/6/20	1220	3	X			X												X		X	X	X		X	X							
T4RB-22L	10/6/20	1245	3	X			X												X		X	X	X		X	X							

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline/Apex	10/7/20	830	Gin/APEX LABS	10/7/20	1002
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

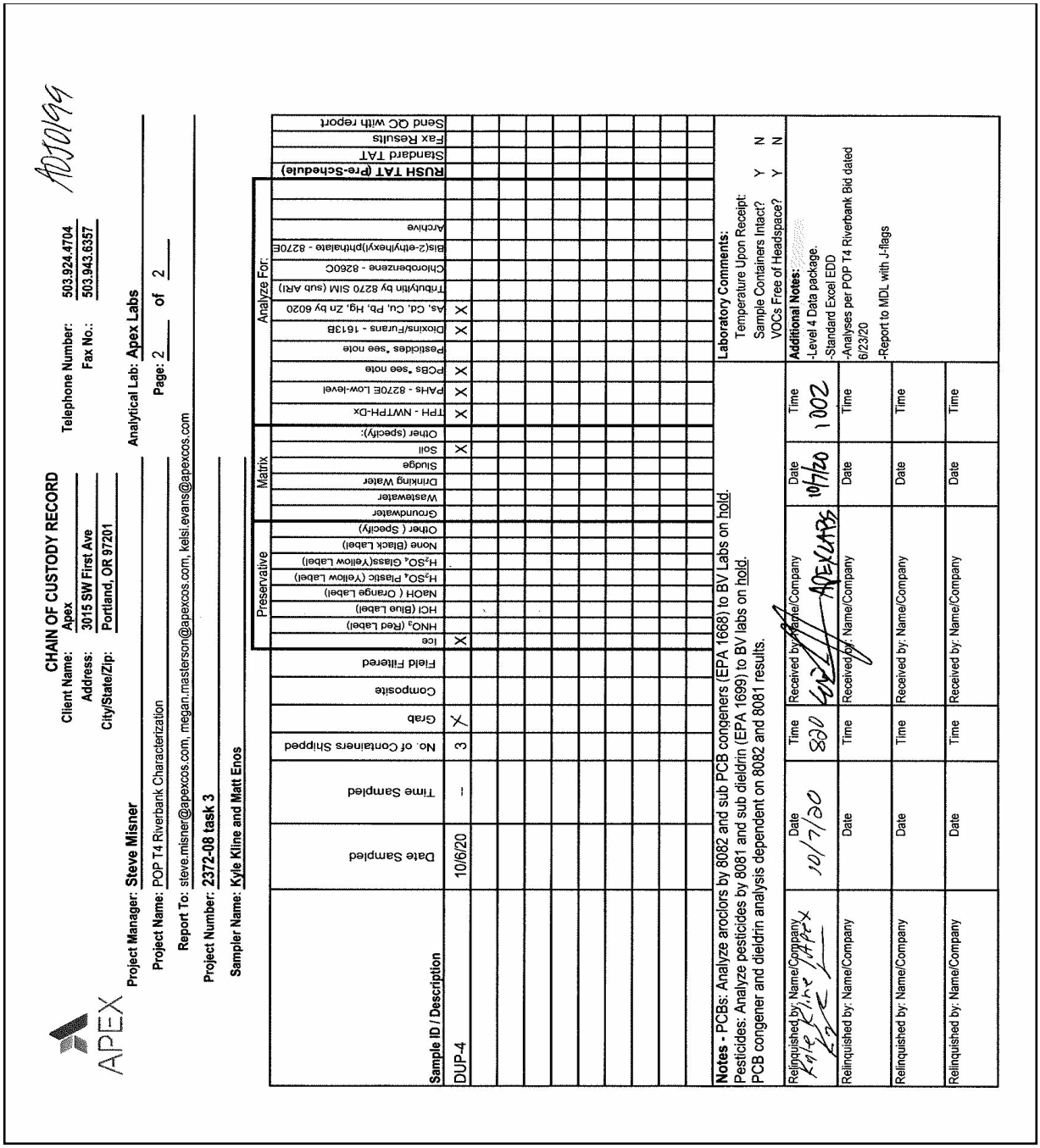
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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**



CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 | Analytical Lab: Apex Labs

Project Manager: Steve Misner | Page: 2 of 2
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
DUP-4	10/6/20	-	3	X			X												X		X	X	X			X								

Notes - PCBs: Analyze arocolors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt: Y N
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline / Apex	10/7/20	830	APEX LABS	10/7/20	1002
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0199 - 11 05 20 1308**

APEX LABS COOLER RECEIPT FORM

Client: APEX Companies Element WO#: A0 J0199

Project/Project #: POP T4 Riverbank Characterization 2372-08 task 3

Delivery Info:

Date/time received: 10/7/20 @ 1002 By: EJ

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

Cooler Inspection Date/time inspected: 10/7/20 @ 1030 By: EJ

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.3						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	Y						
Ice type: (Gel/Real/Other)	Real						
Condition:	Good						

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

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

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

Samples Inspection: Date/time inspected: 10/7/20 @ 12:20 By: [initials]

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes X No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No X

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

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

Comments ___

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

Comments: ___

Additional information: ___

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

26 October 2020

Darrell Auvil
Apex Laboratories LLC
12232 SW Garden Place
Tigard, OR 97223

RE: A0J0199

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20J0109	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

SUBCONTRACT ORDER

Apex Laboratories

20J0109 OB 10/7/20 **A0J0199**

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

ARC 10/7/20

Sample Name: A0J0199-04 **Soil** **Sampled: 10/05/20 14:45** (T4RB-19L)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/20/20 17:00	10/19/20 14:45	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0199-07 **Soil** **Sampled: 10/06/20 10:35** (T4RB-21U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	10/20/20 17:00	10/20/20 10:35	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Standard TAT

Released By	Date	Received By	Date
	10/7/20 14:00	UPS (Shipper)	
UPS (Shipper)			
		Jacob Salter	10/08/2020 1105

Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A0J0199-04	20J0109-01	Solid	05-Oct-2020 14:45	08-Oct-2020 11:05
A0J0199-07	20J0109-02	Solid	06-Oct-2020 10:35	08-Oct-2020 11:05

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Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received 08-Oct-2020 11:05 under ARI work order 20J0109. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The samplers were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The blank spike/blank spike duplicate (BS/LCS/BSD/LCSD) percent recoveries were within control limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex Labs Project Name: AOJ0199

COC No(s): _____ NA Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20J0109 Tracking No: 1ZV472OR0192908999 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1105 1.8 _____ _____ _____ _____ _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 5206

Cooler Accepted by: JSw Date: 10/08/2020 Time: 1105

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Trash bag		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSw Date: 10/08/2020 Time: 1302 Labels checked by: JSw

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

A0J0199-04

20J0109-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/05/2020 14:45

Instrument: NT8 Analyst: JZ — Analyzed: 10/23/2020 14:36

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0109-01 A 01
	Preparation Batch: BIJ0485	Sample Size: 5.4 g (wet)	Dry Weight:5.05 g
	Prepared: 10/15/2020	Final Volume: 0.5 mL	% Solids: 93.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0109-01 A 01
	Cleanup Batch: CIJ0229	Initial Volume: 0.5 mL	
	Cleaned: 22-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.446	3.82	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*61.2*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*43.7*	*%*	

Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

A0J0199-07

20J0109-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/06/2020 10:35
Instrument: NT8 Analyst: JZ — Analyzed: 10/23/2020 14:52

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0109-02 A 01
	Preparation Batch: BIJ0485	Sample Size: 5.17 g (wet)	Dry Weight:5.05 g
	Prepared: 10/15/2020	Final Volume: 0.5 mL	% Solids: 97.74
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0109-02 A 01
	Cleanup Batch: CIJ0229	Initial Volume: 0.5 mL	
	Cleaned: 22-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.445	3.82	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*74.9*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*56.9*	*%*	

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Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

Butyl Tins - Quality Control

Batch BIJ0485 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0485-BLK1)				Prepared: 15-Oct-2020 Analyzed: 23-Oct-2020 11:00							
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Surrogate: Tripentyltin	44.3			ug/kg	*45.2*		*98.0*	*30-160*			
Surrogate: Tripropyltin	35.6			ug/kg	*43.7*		*81.3*	*30-160*			
LCS (BIJ0485-BS1)				Prepared: 15-Oct-2020 Analyzed: 23-Oct-2020 11:17							
Tributyltin Ion	36.1	0.450	3.86	ug/kg	44.6		81.1	30-160			
Surrogate: Tripentyltin	42.5			ug/kg	*45.2*		*94.0*	*30-160*			
Surrogate: Tripropyltin	32.3			ug/kg	*43.7*		*73.9*	*30-160*			
LCS Dup (BIJ0485-BSD1)				Prepared: 15-Oct-2020 Analyzed: 23-Oct-2020 11:33							
Tributyltin Ion	41.1	0.450	3.86	ug/kg	44.6		92.3	30-160	12.90	30	
Surrogate: Tripentyltin	43.0			ug/kg	*45.2*		*95.2*	*30-160*			
Surrogate: Tripropyltin	35.2			ug/kg	*43.7*		*80.4*	*30-160*			

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Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Butyltin Ion	WADOE
Butyltin Ion	
Butyltin Ion	WADOE
Butyltin Ion	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Apex Laboratories LLC	Project: A0J0199	
12232 SW Garden Place	Project Number: A0J0199	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	26-Oct-2020 15:38

Notes and Definitions

*	Flagged value is not within established control limits.
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Your Project #: A0J0199
Your C.O.C. #: na

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2020/10/28
Report #: R6388380
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0Q4007
Received: 2020/10/08, 11:57

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	6	2020/10/12	2020/10/17	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	4	2020/10/12	2020/10/20	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	1	2020/10/10	2020/10/27	BRL SOP-00406	EPA M8290A / M1613
2378TCDF Confirmation (M8290A/M1613)	7	2020/10/12	2020/10/19	BRL SOP-00406	EPA M8290A / M1613
Moisture	10	N/A	2020/10/08	CAM SOP-00445	Carter 2nd ed 51.2 m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bvlabs.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C0Q4007
Report Date: 2020/10/28

Apex Laboratories
Client Project #: A0J0199

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NVN089	NVN090	NVN091	NVN092	NVN093	NVN094	NVN095			
Sampling Date		2020/10/05 12:25	2020/10/05 14:10	2020/10/05 14:45	2020/10/06 09:30	2020/10/06 09:55	2020/10/06 10:35	2020/10/06 11:05			
COC Number		na	na	na	na	na	na	na			
	UNITS	T4RB-18U	T4RB-19U	T4RB-19L	T4RB-20L	T4RB-20U	T4RB-21U	T4RB-21L	RDL	MDL	QC Batch
Moisture	%	11	2.6	6.1	8.5	3.1	2.8	6.9	1.0	0.50	6991700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		NVN096	NVN097	NVN098			
Sampling Date		2020/10/06 12:20	2020/10/06 12:45	2020/10/06 00:00			
COC Number		na	na	na			
	UNITS	T4RB-22U	T4RB-22L	DUP-4	RDL	MDL	QC Batch
Moisture	%	17	19	7.6	1.0	0.50	6991700

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN089							
Sampling Date		2020/10/05 12:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.300 J	0.106	1.00	0.0400	1.00	0.300	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	2.07 J	0.119	5.00	0.0400	1.00	2.07	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	2.96 J	0.108	5.00	0.0400	0.100	0.296	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	52.7	0.108	5.00	0.0400	0.100	5.27	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	11.7	0.112	5.00	0.0400	0.100	1.17	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1480	0.115	5.00	0.0400	0.0100	14.8	N/A	7005187
Octa CDD *	pg/g	13300 (1)	2.06	200	0.0800	0.000300	3.99	N/A	7005187
Total Tetra CDD *	pg/g	5.96	0.106	1.00	0.0400	N/A	N/A	10	7005187
Total Penta CDD *	pg/g	5.45	0.119	5.00	0.0400	N/A	N/A	5	7005187
Total Hexa CDD *	pg/g	241	0.109	5.00	0.0400	N/A	N/A	7	7005187
Total Hepta CDD *	pg/g	3060	0.115	5.00	0.0400	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	3.96	0.112	1.00	0.0400	0.100	0.396	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	6.50	0.512	5.00	0.0400	0.0300	0.195	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	26.1	0.477	5.00	0.0400	0.300	7.83	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	265	0.105	5.00	0.0400	0.100	26.5	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	37.2	0.108	5.00	0.0400	0.100	3.72	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	13.5	0.105	5.00	0.0400	0.100	1.35	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	1.48 J	0.109	5.00	0.0400	0.100	0.148	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	634	0.120	5.00	0.0400	0.0100	6.34	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	206	0.119	5.00	0.0400	0.0100	2.06	N/A	7005187
Octa CDF **	pg/g	1540	0.112	10.0	0.0800	0.000300	0.462	N/A	7005187
Total Tetra CDF **	pg/g	44.2	0.112	1.00	0.0400	N/A	N/A	14	7005187
Total Penta CDF **	pg/g	451	0.494	5.00	0.0400	N/A	N/A	9	7005187
Total Hexa CDF **	pg/g	1520	0.107	5.00	0.0400	N/A	N/A	11	7005187
Total Hepta CDF **	pg/g	3170	0.119	5.00	0.0400	N/A	N/A	4	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	2.53	0.15	1.0	0.18	0.100	0.253	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	76.8	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from20xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN089							
Sampling Date		2020/10/05 12:25							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	163 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) from20xdiln
Recovery outside method acceptance criteria due to matrix effects.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN090							
Sampling Date		2020/10/05 14:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-19U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.123 U (1)	0.123	1.00	0.0400	1.00	0.123	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.598 J	0.115	5.00	0.0400	1.00	0.598	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.980 J	0.106	5.00	0.0400	0.100	0.0980	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	38.6	0.105	5.00	0.0400	0.100	3.86	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	4.77 J	0.110	5.00	0.0400	0.100	0.477	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1270	0.109	5.00	0.0400	0.0100	12.7	N/A	7005187
Octa CDD *	pg/g	12600 (2)	2.84	200	0.0800	0.000300	3.78	N/A	7005187
Total Tetra CDD *	pg/g	3.44	0.114	1.00	0.0400	N/A	N/A	4	7005187
Total Penta CDD *	pg/g	1.85 J	0.115	5.00	0.0400	N/A	N/A	5	7005187
Total Hexa CDD *	pg/g	118	0.107	5.00	0.0400	N/A	N/A	6	7005187
Total Hepta CDD *	pg/g	2410	0.109	5.00	0.0400	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	2.16	0.110	1.00	0.0400	0.100	0.216	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	3.55 J	0.156	5.00	0.0400	0.0300	0.107	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	15.7	0.145	5.00	0.0400	0.300	4.71	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	137	0.105	5.00	0.0400	0.100	13.7	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	18.9	0.107	5.00	0.0400	0.100	1.89	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	6.48	0.104	5.00	0.0400	0.100	0.648	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.396 J	0.109	5.00	0.0400	0.100	0.0396	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	407	0.162	5.00	0.0400	0.0100	4.07	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	102	0.162	5.00	0.0400	0.0100	1.02	N/A	7005187
Octa CDF **	pg/g	1550	0.114	10.0	0.0800	0.000300	0.465	N/A	7005187
Total Tetra CDF **	pg/g	16.5	0.110	1.00	0.0400	N/A	N/A	13	7005187
Total Penta CDF **	pg/g	200	0.150	5.00	0.0400	N/A	N/A	9	7005187
Total Hexa CDF **	pg/g	873	0.106	5.00	0.0400	N/A	N/A	10	7005187
Total Hepta CDF **	pg/g	2230	0.162	5.00	0.0400	N/A	N/A	3	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	1.16	0.13	1.0	0.18	0.100	0.116	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	48.4	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) from 20xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN090							
Sampling Date		2020/10/05 14:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-19U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	131 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) frpm 20xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN091							
Sampling Date		2020/10/05 14:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-19L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.119 U	0.119	0.999	0.0399	1.00	0.119	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.291 U (1)	0.291	4.99	0.0399	1.00	0.291	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.515 J	0.107	4.99	0.0399	0.100	0.0515	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	15.6	0.106	4.99	0.0399	0.100	1.56	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	2.06 J	0.111	4.99	0.0399	0.100	0.206	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	402	0.116	4.99	0.0399	0.0100	4.02	N/A	7005187
Octa CDD *	pg/g	3560	0.119	9.99	0.0799	0.000300	1.07	N/A	7005187
Total Tetra CDD *	pg/g	0.769 J	0.119	0.999	0.0399	N/A	N/A	3	7005187
Total Penta CDD *	pg/g	0.517 J	0.151	4.99	0.0399	N/A	N/A	1	7005187
Total Hexa CDD *	pg/g	48.2	0.107	4.99	0.0399	N/A	N/A	6	7005187
Total Hepta CDD *	pg/g	747	0.116	4.99	0.0399	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	1.02	0.111	0.999	0.0399	0.100	0.102	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	3.19 J	0.286	4.99	0.0399	0.0300	0.0957	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	15.5	0.266	4.99	0.0399	0.300	4.65	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	111	0.113	4.99	0.0399	0.100	11.1	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	17.9	0.117	4.99	0.0399	0.100	1.79	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	4.61 J	0.113	4.99	0.0399	0.100	0.461	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.256 J	0.118	4.99	0.0399	0.100	0.0256	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	189	0.545	4.99	0.0399	0.0100	1.89	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	54.7	0.543	4.99	0.0399	0.0100	0.547	N/A	7005187
Octa CDF **	pg/g	397	0.102	9.99	0.0799	0.000300	0.119	N/A	7005187
Total Tetra CDF **	pg/g	3.46	0.111	0.999	0.0399	N/A	N/A	6	7005187
Total Penta CDF **	pg/g	146	0.275	4.99	0.0399	N/A	N/A	8	7005187
Total Hexa CDF **	pg/g	585	0.115	4.99	0.0399	N/A	N/A	11	7005187
Total Hepta CDF **	pg/g	920	0.544	4.99	0.0399	N/A	N/A	4	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.93 J	0.11	1.0	0.18	0.100	0.0930	N/A	7022840
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	28.1	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN091							
Sampling Date		2020/10/05 14:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-19L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7022840

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN092							
Sampling Date		2020/10/06 09:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-20L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.108 U	0.108	0.999	0.0399	1.00	0.108	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.109 U	0.109	4.99	0.0399	1.00	0.109	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.123 U (1)	0.123	4.99	0.0399	0.100	0.0123	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	1.32 J	0.101	4.99	0.0399	0.100	0.132	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	0.246 U (1)	0.246	4.99	0.0399	0.100	0.0246	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	26.9	0.105	4.99	0.0399	0.0100	0.269	N/A	7005187
Octa CDD *	pg/g	231	0.127	9.99	0.0799	0.000300	0.0693	N/A	7005187
Total Tetra CDD *	pg/g	0.115 J	0.108	0.999	0.0399	N/A	N/A	1	7005187
Total Penta CDD *	pg/g	0.109 U	0.109	4.99	0.0399	N/A	N/A	0	7005187
Total Hexa CDD *	pg/g	3.84 J	0.102	4.99	0.0399	N/A	N/A	3	7005187
Total Hepta CDD *	pg/g	47.5	0.105	4.99	0.0399	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	0.205 J	0.106	0.999	0.0399	0.100	0.0205	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	0.471 U (2)	0.471	4.99	0.0399	0.0300	0.0141	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	2.53 J	0.128	4.99	0.0399	0.300	0.759	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	11.7	0.101	4.99	0.0399	0.100	1.17	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	1.80 J	0.104	4.99	0.0399	0.100	0.180	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	0.614 J	0.101	4.99	0.0399	0.100	0.0614	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.105 U	0.105	4.99	0.0399	0.100	0.0105	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	12.4	0.112	4.99	0.0399	0.0100	0.124	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.38 J	0.112	4.99	0.0399	0.0100	0.0238	N/A	7005187
Octa CDF **	pg/g	19.8	0.117	9.99	0.0799	0.000300	0.00594	N/A	7005187
Total Tetra CDF **	pg/g	0.205 J	0.106	0.999	0.0399	N/A	N/A	1	7005187
Total Penta CDF **	pg/g	19.0	0.133	4.99	0.0399	N/A	N/A	6	7005187
Total Hexa CDF **	pg/g	54.2	0.103	4.99	0.0399	N/A	N/A	8	7005187
Total Hepta CDF **	pg/g	54.4	0.112	4.99	0.0399	N/A	N/A	4	7005187
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	3.09	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN092							
Sampling Date		2020/10/06 09:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-20L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN093							
Sampling Date		2020/10/06 09:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-20U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.146 U (1)	0.146	1.00	0.0400	1.00	0.146	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.484 J	0.113	5.00	0.0400	1.00	0.484	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.448 J	0.109	5.00	0.0400	0.100	0.0448	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	7.67	0.108	5.00	0.0400	0.100	0.767	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	2.19 J	0.113	5.00	0.0400	0.100	0.219	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	303	0.110	5.00	0.0400	0.0100	3.03	N/A	7005187
Octa CDD *	pg/g	2650	0.111	10.0	0.0800	0.000300	0.795	N/A	7005187
Total Tetra CDD *	pg/g	1.70	0.111	1.00	0.0400	N/A	N/A	5	7005187
Total Penta CDD *	pg/g	2.11 J	0.113	5.00	0.0400	N/A	N/A	4	7005187
Total Hexa CDD *	pg/g	45.6	0.109	5.00	0.0400	N/A	N/A	5	7005187
Total Hepta CDD *	pg/g	664	0.110	5.00	0.0400	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	1.75	0.132	1.00	0.0400	0.100	0.175	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	1.19 J	0.181	5.00	0.0400	0.0300	0.0357	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	4.86 J	0.168	5.00	0.0400	0.300	1.46	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	29.1	0.109	5.00	0.0400	0.100	2.91	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	6.30	0.112	5.00	0.0400	0.100	0.630	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	3.16 J	0.108	5.00	0.0400	0.100	0.316	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.113 U	0.113	5.00	0.0400	0.100	0.0113	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	83.1	0.112	5.00	0.0400	0.0100	0.831	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	22.2	0.112	5.00	0.0400	0.0100	0.222	N/A	7005187
Octa CDF **	pg/g	272	0.119	10.0	0.0800	0.000300	0.0816	N/A	7005187
Total Tetra CDF **	pg/g	39.2	0.132	1.00	0.0400	N/A	N/A	12	7005187
Total Penta CDF **	pg/g	200	0.174	5.00	0.0400	N/A	N/A	10	7005187
Total Hexa CDF **	pg/g	243	0.110	5.00	0.0400	N/A	N/A	9	7005187
Total Hepta CDF **	pg/g	412	0.112	5.00	0.0400	N/A	N/A	4	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.78 J	0.10	1.0	0.18	0.100	0.0780	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	12.1	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN093							
Sampling Date		2020/10/06 09:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-20U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN094							
Sampling Date		2020/10/06 10:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-21U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.228 J	0.105	0.999	0.0400	1.00	0.228	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.481 J	0.109	5.00	0.0400	1.00	0.481	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.481 U (1)	0.481	5.00	0.0400	0.100	0.0481	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	8.82	0.109	5.00	0.0400	0.100	0.882	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	2.11 J	0.114	5.00	0.0400	0.100	0.211	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	388	0.112	5.00	0.0400	0.0100	3.88	N/A	7005187
Octa CDD *	pg/g	3530	0.127	9.99	0.0799	0.000300	1.06	N/A	7005187
Total Tetra CDD *	pg/g	2.28	0.105	0.999	0.0400	N/A	N/A	7	7005187
Total Penta CDD *	pg/g	1.41 J	0.109	5.00	0.0400	N/A	N/A	5	7005187
Total Hexa CDD *	pg/g	42.3	0.110	5.00	0.0400	N/A	N/A	5	7005187
Total Hepta CDD *	pg/g	828	0.112	5.00	0.0400	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	1.02	0.112	0.999	0.0400	0.100	0.102	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	0.726 J	0.111	5.00	0.0400	0.0300	0.0218	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	2.72 J	0.103	5.00	0.0400	0.300	0.816	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	10.2	0.105	5.00	0.0400	0.100	1.02	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	2.74 J	0.108	5.00	0.0400	0.100	0.274	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	1.76 J	0.105	5.00	0.0400	0.100	0.176	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.110 U	0.110	5.00	0.0400	0.100	0.0110	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	114	0.104	5.00	0.0400	0.0100	1.14	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	7.73	0.104	5.00	0.0400	0.0100	0.0773	N/A	7005187
Octa CDF **	pg/g	770	0.103	9.99	0.0799	0.000300	0.231	N/A	7005187
Total Tetra CDF **	pg/g	10.6	0.112	0.999	0.0400	N/A	N/A	11	7005187
Total Penta CDF **	pg/g	64.4	0.107	5.00	0.0400	N/A	N/A	8	7005187
Total Hexa CDF **	pg/g	165	0.107	5.00	0.0400	N/A	N/A	9	7005187
Total Hepta CDF **	pg/g	121	0.104	5.00	0.0400	N/A	N/A	2	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.50 J	0.11	1.0	0.18	0.100	0.0500	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	10.6	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN094							
Sampling Date		2020/10/06 10:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-21U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	128	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN094							
Sampling Date		2020/10/06 10:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-21U Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.267 J	0.109	0.999	0.0400	1.00	0.267	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.532 U (1)	0.532	4.99	0.0400	1.00	0.532	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.656 J	0.106	4.99	0.0400	0.100	0.0656	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	10.9	0.106	4.99	0.0400	0.100	1.09	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	2.74 J	0.110	4.99	0.0400	0.100	0.274	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	425	0.102	4.99	0.0400	0.0100	4.25	N/A	7005187
Octa CDD *	pg/g	3890	0.116	9.99	0.0799	0.000300	1.17	N/A	7005187
Total Tetra CDD *	pg/g	1.95	0.109	0.999	0.0400	N/A	N/A	4	7005187
Total Penta CDD *	pg/g	0.676 J	0.134	4.99	0.0400	N/A	N/A	2	7005187
Total Hexa CDD *	pg/g	47.8	0.107	4.99	0.0400	N/A	N/A	7	7005187
Total Hepta CDD *	pg/g	831	0.102	4.99	0.0400	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	1.14	0.112	0.999	0.0400	0.100	0.114	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	0.772 J	0.154	4.99	0.0400	0.0300	0.0232	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	3.11 J	0.143	4.99	0.0400	0.300	0.933	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	12.4	0.101	4.99	0.0400	0.100	1.24	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	2.70 J	0.104	4.99	0.0400	0.100	0.270	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	1.79 J	0.100	4.99	0.0400	0.100	0.179	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.105 U	0.105	4.99	0.0400	0.100	0.0105	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	135	0.110	4.99	0.0400	0.0100	1.35	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	8.92	0.110	4.99	0.0400	0.0100	0.0892	N/A	7005187
Octa CDF **	pg/g	877	0.111	9.99	0.0799	0.000300	0.263	N/A	7005187
Total Tetra CDF **	pg/g	14.4 (2)	0.112	0.999	0.0400	N/A	N/A	13	7005187
Total Penta CDF **	pg/g	73.3	0.148	4.99	0.0400	N/A	N/A	10	7005187
Total Hexa CDF **	pg/g	187	0.102	4.99	0.0400	N/A	N/A	10	7005187
Total Hepta CDF **	pg/g	809 (2)	0.110	4.99	0.0400	N/A	N/A	4	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	0.52 J	0.12	1.0	0.18	0.100	0.0520	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	12.1	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) RPD criteria excceds method criteria, possibly due to sample heterogeneity

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN094							
Sampling Date		2020/10/06 10:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-21U Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN095							
Sampling Date		2020/10/06 11:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-21L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.113 U	0.113	0.998	0.0399	1.00	0.113	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.446 J	0.112	4.99	0.0399	1.00	0.446	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.756 J	0.113	4.99	0.0399	0.100	0.0756	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	44.2	0.113	4.99	0.0399	0.100	4.42	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	4.05 J	0.118	4.99	0.0399	0.100	0.405	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1140	0.107	4.99	0.0399	0.0100	11.4	N/A	7005187
Octa CDD *	pg/g	17300 (1)	2.43	200	0.0798	0.000300	5.19	N/A	7005187
Total Tetra CDD *	pg/g	0.656 J	0.113	0.998	0.0399	N/A	N/A	2	7005187
Total Penta CDD *	pg/g	0.795 J	0.112	4.99	0.0399	N/A	N/A	2	7005187
Total Hexa CDD *	pg/g	129	0.114	4.99	0.0399	N/A	N/A	6	7005187
Total Hepta CDD *	pg/g	2420	0.107	4.99	0.0399	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	2.76	0.118	0.998	0.0399	0.100	0.276	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	11.3	0.500	4.99	0.0399	0.0300	0.339	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	54.8	0.466	4.99	0.0399	0.300	16.4	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	271	0.111	4.99	0.0399	0.100	27.1	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	39.9	0.114	4.99	0.0399	0.100	3.99	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	12.2	0.111	4.99	0.0399	0.100	1.22	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.812 J	0.116	4.99	0.0399	0.100	0.0812	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	454	0.108	4.99	0.0399	0.0100	4.54	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	66.2	0.107	4.99	0.0399	0.0100	0.662	N/A	7005187
Octa CDF **	pg/g	1280	0.115	9.98	0.0798	0.000300	0.384	N/A	7005187
Total Tetra CDF **	pg/g	10.9	0.118	0.998	0.0399	N/A	N/A	8	7005187
Total Penta CDF **	pg/g	505	0.482	4.99	0.0399	N/A	N/A	11	7005187
Total Hexa CDF **	pg/g	1430	0.113	4.99	0.0399	N/A	N/A	11	7005187
Total Hepta CDF **	pg/g	521	0.108	4.99	0.0399	N/A	N/A	2	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	2.48	0.16	1.0	0.18	0.100	0.248	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	77.0	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) from 20xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN095							
Sampling Date		2020/10/06 11:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-21L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	127	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	162 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 20xdiln

Recovery outside method acceptance criteria due to matrix effects

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN096							
Sampling Date		2020/10/06 12:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-22U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.325 U (1)	0.325	0.998	0.0399	1.00	0.325	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	1.68 J	0.105	4.99	0.0399	1.00	1.68	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	3.15 J	0.117	4.99	0.0399	0.100	0.315	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	15.4	0.117	4.99	0.0399	0.100	1.54	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	8.71	0.122	4.99	0.0399	0.100	0.871	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	497	0.111	4.99	0.0399	0.0100	4.97	N/A	7005187
Octa CDD *	pg/g	4700 (2)	1.05	99.8	0.0799	0.000300	1.41	N/A	7005187
Total Tetra CDD *	pg/g	2.62	0.116	0.998	0.0399	N/A	N/A	5	7005187
Total Penta CDD *	pg/g	5.46	0.105	4.99	0.0399	N/A	N/A	6	7005187
Total Hexa CDD *	pg/g	88.3	0.118	4.99	0.0399	N/A	N/A	6	7005187
Total Hepta CDD *	pg/g	1060	0.111	4.99	0.0399	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	2.88	0.116	0.998	0.0399	0.100	0.288	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	1.96 U (1)	1.96	4.99	0.0399	0.0300	0.0588	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	7.89	0.252	4.99	0.0399	0.300	2.37	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	36.2	0.102	4.99	0.0399	0.100	3.62	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	10.8	0.105	4.99	0.0399	0.100	1.08	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	4.82 J	0.101	4.99	0.0399	0.100	0.482	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.128 J	0.106	4.99	0.0399	0.100	0.0128	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	167	0.101	4.99	0.0399	0.0100	1.67	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	20.6	0.100	4.99	0.0399	0.0100	0.206	N/A	7005187
Octa CDF **	pg/g	498	0.111	9.98	0.0799	0.000300	0.149	N/A	7005187
Total Tetra CDF **	pg/g	36.5	0.116	0.998	0.0399	N/A	N/A	12	7005187
Total Penta CDF **	pg/g	221	0.261	4.99	0.0399	N/A	N/A	7	7005187
Total Hexa CDF **	pg/g	397	0.103	4.99	0.0399	N/A	N/A	12	7005187
Total Hepta CDF **	pg/g	188	0.100	4.99	0.0399	N/A	N/A	2	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	1.38	0.15	1.0	0.18	0.100	0.138	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	20.9	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) from 10xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN096							
Sampling Date		2020/10/06 12:20							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-22U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	126	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	113 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) from 10xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN097							
Sampling Date		2020/10/06 12:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-22L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.114 U	0.114	0.999	0.0399	1.00	0.114	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.315 J	0.137	4.99	0.0399	1.00	0.315	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	2.87 J	0.104	4.99	0.0399	0.100	0.287	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	20.6	0.104	4.99	0.0399	0.100	2.06	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	2.53 J	0.109	4.99	0.0399	0.100	0.253	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	540	0.109	4.99	0.0399	0.0100	5.40	N/A	7005187
Octa CDD *	pg/g	3990	0.150	9.99	0.0799	0.000300	1.20	N/A	7005187
Total Tetra CDD *	pg/g	0.245 J	0.114	0.999	0.0399	N/A	N/A	1	7005187
Total Penta CDD *	pg/g	1.64 J	0.137	4.99	0.0399	N/A	N/A	4	7005187
Total Hexa CDD *	pg/g	64.7	0.105	4.99	0.0399	N/A	N/A	8	7005187
Total Hepta CDD *	pg/g	928	0.109	4.99	0.0399	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	0.636 J	0.116	0.999	0.0399	0.100	0.0636	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	2.48 J	0.340	4.99	0.0399	0.0300	0.0744	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	12.0	0.317	4.99	0.0399	0.300	3.60	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	110	0.109	4.99	0.0399	0.100	11.0	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	12.8	0.112	4.99	0.0399	0.100	1.28	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	4.40 J	0.109	4.99	0.0399	0.100	0.440	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.113 U	0.113	4.99	0.0399	0.100	0.0113	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	261	0.114	4.99	0.0399	0.0100	2.61	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	70.5	0.114	4.99	0.0399	0.0100	0.705	N/A	7005187
Octa CDF **	pg/g	691	0.103	9.99	0.0799	0.000300	0.207	N/A	7005187
Total Tetra CDF **	pg/g	4.20	0.116	0.999	0.0399	N/A	N/A	8	7005187
Total Penta CDF **	pg/g	121	0.328	4.99	0.0399	N/A	N/A	8	7005187
Total Hexa CDF **	pg/g	610	0.111	4.99	0.0399	N/A	N/A	9	7005187
Total Hepta CDF **	pg/g	1310	0.114	4.99	0.0399	N/A	N/A	4	7005187
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	29.6	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7005187

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN097							
Sampling Date		2020/10/06 12:45							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-22L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7005187

EDL = Estimated Detection Limit

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QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

N/A = Not Applicable

* CDD = Chloro Dibenzo-p-Dioxin

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN098							
Sampling Date		2020/10/06 00:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-4	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.107 U	0.107	0.998	0.0399	1.00	0.107	N/A	7005187
1,2,3,7,8-Penta CDD *	pg/g	0.347 U (1)	0.347	4.99	0.0399	1.00	0.347	N/A	7005187
1,2,3,4,7,8-Hexa CDD *	pg/g	0.688 J	0.103	4.99	0.0399	0.100	0.0688	N/A	7005187
1,2,3,6,7,8-Hexa CDD *	pg/g	37.7	0.102	4.99	0.0399	0.100	3.77	N/A	7005187
1,2,3,7,8,9-Hexa CDD *	pg/g	3.67 J	0.107	4.99	0.0399	0.100	0.367	N/A	7005187
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1110	0.103	4.99	0.0399	0.0100	11.1	N/A	7005187
Octa CDD *	pg/g	15200 (2)	1.99	200	0.0799	0.000300	4.56	N/A	7005187
Total Tetra CDD *	pg/g	0.599 J	0.107	0.998	0.0399	N/A	N/A	2	7005187
Total Penta CDD *	pg/g	0.329 J	0.107	4.99	0.0399	N/A	N/A	1	7005187
Total Hexa CDD *	pg/g	114	0.103	4.99	0.0399	N/A	N/A	6	7005187
Total Hepta CDD *	pg/g	2300	0.103	4.99	0.0399	N/A	N/A	2	7005187
2,3,7,8-Tetra CDF **	pg/g	2.81	0.114	0.998	0.0399	0.100	0.281	N/A	7005187
1,2,3,7,8-Penta CDF **	pg/g	9.79	0.109	4.99	0.0399	0.0300	0.294	N/A	7005187
2,3,4,7,8-Penta CDF **	pg/g	50.1	0.101	4.99	0.0399	0.300	15.0	N/A	7005187
1,2,3,4,7,8-Hexa CDF **	pg/g	255	0.103	4.99	0.0399	0.100	25.5	N/A	7005187
1,2,3,6,7,8-Hexa CDF **	pg/g	35.6	0.106	4.99	0.0399	0.100	3.56	N/A	7005187
2,3,4,6,7,8-Hexa CDF **	pg/g	6.67	0.102	4.99	0.0399	0.100	0.667	N/A	7005187
1,2,3,7,8,9-Hexa CDF **	pg/g	0.283 U (1)	0.283	4.99	0.0399	0.100	0.0283	N/A	7005187
1,2,3,4,6,7,8-Hepta CDF **	pg/g	455	0.105	4.99	0.0399	0.0100	4.55	N/A	7005187
1,2,3,4,7,8,9-Hepta CDF **	pg/g	62.7	0.105	4.99	0.0399	0.0100	0.627	N/A	7005187
Octa CDF **	pg/g	1270	0.116	9.98	0.0799	0.000300	0.381	N/A	7005187
Total Tetra CDF **	pg/g	11.1	0.114	0.998	0.0399	N/A	N/A	9	7005187
Total Penta CDF **	pg/g	490	0.105	4.99	0.0399	N/A	N/A	9	7005187
Total Hexa CDF **	pg/g	1330	0.104	4.99	0.0399	N/A	N/A	11	7005187
Total Hepta CDF **	pg/g	518	0.105	4.99	0.0399	N/A	N/A	2	7005187
Confirmation 2,3,7,8-Tetra CDF **	pg/g	2.12	0.14	1.0	0.18	0.100	0.212	N/A	7009934
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	71.1	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) from 20xdiln

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NVN098							
Sampling Date		2020/10/06 00:00							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-4	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	127	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234678 HeptaCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123478 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-1234789 HeptaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDD *	%	134 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123678 HexaCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-12378 PentaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-123789 HexaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-234678 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-23478 PentaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-2378 TetraCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7005187
C13-OCDD *	%	144 (2)	N/A	N/A	N/A	N/A	N/A	N/A	7005187
Confirmation C13-2378 TetraCDF **	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7009934

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Recovery outside method acceptance criteria due to matrix effects

(2) from 20xdiln

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVN089
Sample ID: T4RB-18U
Matrix: Soil

Collected: 2020/10/05
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN090
Sample ID: T4RB-19U
Matrix: Soil

Collected: 2020/10/05
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN091
Sample ID: T4RB-19L
Matrix: Soil

Collected: 2020/10/05
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/20	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7022840	2020/10/10	2020/10/27	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN092
Sample ID: T4RB-20L
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN093
Sample ID: T4RB-20U
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN094
Sample ID: T4RB-21U
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NVN094 Dup
Sample ID: T4RB-21U
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero

BV Labs ID: NVN095
Sample ID: T4RB-21L
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN096
Sample ID: T4RB-22U
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/20	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN097
Sample ID: T4RB-22L
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/20	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

BV Labs ID: NVN098
Sample ID: DUP-4
Matrix: Soil

Collected: 2020/10/06
Shipped:
Received: 2020/10/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7005187	2020/10/12	2020/10/20	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7009934	2020/10/12	2020/10/19	Angel Guerrero
Moisture	BAL	6991700	N/A	2020/10/08	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.2°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
6991700	KJP	RPD - Sample/Sample Dup	Moisture	2020/10/08	0		%	20
7005187	AGU	Matrix Spike(NVN091)	37CL4 2378 Tetra CDD	2020/10/16		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/16		95	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/16		90	%	28 - 143
			C13-123478 HexaCDD	2020/10/16		88	%	32 - 141
			C13-123478 HexaCDF	2020/10/16		86	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/16		94	%	26 - 138
			C13-123678 HexaCDD	2020/10/16		102	%	28 - 130
			C13-123678 HexaCDF	2020/10/16		82	%	26 - 123
			C13-12378 PentaCDD	2020/10/16		85	%	25 - 181
			C13-12378 PentaCDF	2020/10/16		80	%	24 - 185
			C13-123789 HexaCDF	2020/10/16		107	%	29 - 147
			C13-234678 HexaCDF	2020/10/16		85	%	28 - 136
			C13-23478 PentaCDF	2020/10/16		89	%	21 - 178
			C13-2378 TetraCDD	2020/10/16		85	%	25 - 164
			C13-2378 TetraCDF	2020/10/16		90	%	24 - 169
			C13-OCDD	2020/10/16		112	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/16		109	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/16		107	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/16		103	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/16		112	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/16		110	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/16		176 (1)	%	70 - 140
			Octa CDD	2020/10/16		331 (1)	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/16		108	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/16		104	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/16		104	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/16		120	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/16		113	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/16		122	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/16		124	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/16		120	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/16		121	%	78 - 138
			Octa CDF	2020/10/16		106	%	63 - 170
7005187	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/10/16		120	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/16		123	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/16		112	%	28 - 143
			C13-123478 HexaCDD	2020/10/16		112	%	32 - 141
			C13-123478 HexaCDF	2020/10/16		109	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/16		117	%	26 - 138
			C13-123678 HexaCDD	2020/10/16		137 (2)	%	28 - 130
			C13-123678 HexaCDF	2020/10/16		100	%	26 - 123
			C13-12378 PentaCDD	2020/10/16		103	%	25 - 181
			C13-12378 PentaCDF	2020/10/16		94	%	24 - 185
			C13-123789 HexaCDF	2020/10/16		140	%	29 - 147
			C13-234678 HexaCDF	2020/10/16		106	%	28 - 136
			C13-23478 PentaCDF	2020/10/16		110	%	21 - 178
			C13-2378 TetraCDD	2020/10/16		102	%	25 - 164
			C13-2378 TetraCDF	2020/10/16		107	%	24 - 169
			C13-OCDD	2020/10/16		123	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/16		100	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/16		111	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/16		106	%	70 - 164

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/10/16		102	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/16		104	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/16		97	%	70 - 140
			Octa CDD	2020/10/16		100	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/16		105	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/16		112	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/16		97	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/16		102	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/16		108	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/16		105	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/16		101	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/16		98	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/16		108	%	78 - 138
			Octa CDF	2020/10/16		101	%	63 - 170
7005187	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/10/16		89	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/16		101	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/16		93	%	28 - 143
			C13-123478 HexaCDD	2020/10/16		95	%	32 - 141
			C13-123478 HexaCDF	2020/10/16		92	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/16		100	%	26 - 138
			C13-123678 HexaCDD	2020/10/16		112	%	28 - 130
			C13-123678 HexaCDF	2020/10/16		92	%	26 - 123
			C13-12378 PentaCDD	2020/10/16		79	%	25 - 181
			C13-12378 PentaCDF	2020/10/16		74	%	24 - 185
			C13-123789 HexaCDF	2020/10/16		110	%	29 - 147
			C13-234678 HexaCDF	2020/10/16		94	%	28 - 136
			C13-23478 PentaCDF	2020/10/16		83	%	21 - 178
			C13-2378 TetraCDD	2020/10/16		79	%	25 - 164
			C13-2378 TetraCDF	2020/10/16		81	%	24 - 169
			C13-OCDD	2020/10/16		106	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/16	0.115 U, EDL=0.115		pg/g	
			1,2,3,7,8-Penta CDD	2020/10/16	0.106 U, EDL=0.106		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/10/16	0.103 U, EDL=0.103		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/10/16	0.102 U, EDL=0.102		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/10/16	0.107 U, EDL=0.107		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/10/16	0.203 J, EDL=0.101		pg/g	
			Octa CDD	2020/10/16	0.810 J, EDL=0.101		pg/g	
			Total Tetra CDD	2020/10/16	0.115 U, EDL=0.115		pg/g	
			Total Penta CDD	2020/10/16	0.123 U, EDL=0.123 (3)		pg/g	
			Total Hexa CDD	2020/10/16	0.169 U, EDL=0.169 (3)		pg/g	
			Total Hepta CDD	2020/10/16	0.203 J, EDL=0.101		pg/g	
			2,3,7,8-Tetra CDF	2020/10/16	0.109 U, EDL=0.109		pg/g	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2020/10/16	0.107 U, EDL=0.107		pg/g	
			2,3,4,7,8-Penta CDF	2020/10/16	0.0996 U, EDL=0.0996		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/10/16	0.106 U, EDL=0.106		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/10/16	0.109 U, EDL=0.109		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/10/16	0.105 U, EDL=0.105		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/10/16	0.110 U, EDL=0.110		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/10/16	0.109 U, EDL=0.109		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/10/16	0.109 U, EDL=0.109		pg/g	
			Octa CDF	2020/10/16	0.196 J, EDL=0.116		pg/g	
			Total Tetra CDF	2020/10/16	0.109 U, EDL=0.109		pg/g	
			Total Penta CDF	2020/10/16	0.103 U, EDL=0.103		pg/g	
			Total Hexa CDF	2020/10/16	0.107 U, EDL=0.107		pg/g	
			Total Hepta CDF	2020/10/16	0.109 U, EDL=0.109		pg/g	
7005187	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/10/17	NC		%	25
			1,2,3,7,8-Penta CDD	2020/10/17	NC (3)		%	25
			1,2,3,4,7,8-Hexa CDD	2020/10/17	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/10/17	21		%	25
			1,2,3,7,8,9-Hexa CDD	2020/10/17	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/10/17	9.1		%	25
			Octa CDD	2020/10/17	9.7		%	25
			Total Tetra CDD	2020/10/17	15		%	25
			Total Penta CDD	2020/10/17	NC		%	25
			Total Hexa CDD	2020/10/17	12		%	25
			Total Hepta CDD	2020/10/17	0.25		%	25
			2,3,7,8-Tetra CDF	2020/10/17	12		%	25
			1,2,3,7,8-Penta CDF	2020/10/17	NC		%	25
			2,3,4,7,8-Penta CDF	2020/10/17	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/10/17	20		%	25
			1,2,3,6,7,8-Hexa CDF	2020/10/17	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/10/17	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/10/17	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/10/17	17		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/10/17	14		%	25
			Octa CDF	2020/10/17	13		%	25
			Total Tetra CDF	2020/10/17	30 (4)		%	25
			Total Penta CDF	2020/10/17	13		%	25
			Total Hexa CDF	2020/10/17	13		%	25
			Total Hepta CDF	2020/10/17	148 (4)		%	25
7009934	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/10/19	0.47 J, EDL=0.12		pg/g	
			Confirmation C13-2378 TetraCDF	2020/10/19		60	%	40 - 135

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7009934	AGU	RPD - Sample/Sample Dup	Confirmation 2,3,7,8-Tetra CDF	2020/10/19	NC		%	100
7022840	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/10/27	0.15 U, EDL=0.15		pg/g	
			Confirmation C13-2378 TetraCDF	2020/10/27		87	%	40 - 135

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery exceeds method criteria, possibly due to sample heterogeneity

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(3) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(4) RPD criteria excceds method criteria, possibly due to sample heterogeneity

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Melissa DiGrazia, Operations Manager, HRMS Department

Owen Cosby, BSc.C.Chem, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SUBCONTRACT ORDER

Apex Laboratories

A0J0199

International Solid Sample
Heat Treat Required
High Risk material
Controlled Storage and Disposal

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATO.

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga R.d
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

08-Oct-20 11:57
Lori Dufour
C0Q4007

GK1 ENV-648

Sample Name: T4RB-18U **Soil** **Sampled: 10/05/20 12:25** (A0J0199-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/03/21 12:25	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-19U **Soil** **Sampled: 10/05/20 14:10** (A0J0199-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/03/21 14:10	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-19L **Soil** **Sampled: 10/05/20 14:45** (A0J0199-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/03/21 14:45	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-20L **Soil** **Sampled: 10/06/20 09:30** (A0J0199-05)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 09:30	BV/ Maxxam -- Level 4 Data package

Standard TAT

10/7/20 14:40 — Fed Ex (Shipper)

Released By — Date — Received By — Date

Fed Ex (Shipper) — 10/7/20 17:57

Released By — Date — Received By — Date

SUBCONTRACT ORDER

Apex Laboratories

10/7/20 **A0J0199**

Sample Name: T4RB-20U **Soil** **Sampled: 10/06/20 09:55** (A0J0199-06)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 09:55	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-21U **Soil** **Sampled: 10/06/20 10:35** (A0J0199-07)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 10:35	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-21L **Soil** **Sampled: 10/06/20 11:05** (A0J0199-08)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 11:05	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-22U **Soil** **Sampled: 10/06/20 12:20** (A0J0199-09)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 12:20	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-22L **Soil** **Sampled: 10/06/20 12:45** (A0J0199-10)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 12:45	BV/ Maxxam -- Level 4 Data package

Sample Name: DUP-4 **Soil** **Sampled: 10/06/20 00:00** (A0J0199-11)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	10/20/20 17:00	04/04/21 00:00	BV/ Maxxam -- Level 4 Data package

Standard TAT

10/7/20 14:40 Fed Ex (Shipper)

Released By Date Received By Date

Fed Ex (Shipper) 4.4 4.5 / 3.8

Released By Date Received By 10/8/20 11:52 Date

Page 2 of 2

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

ANALYTICAL REPORT

AMENDED REPORT

Wednesday, March 17, 2021

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0J0312 - POP --- T4 Riverbank - 2372-08 Task 3

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 A0J0312, which was received by the laboratory on 10/9/2020 at 1:30:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	2.7 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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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T4RB-16U	A0J0312-01	Soil	10/07/20 10:10	10/09/20 13:30
T4RB-16L-O52C	A0J0312-03	Soil	10/07/20 13:05	10/09/20 13:30
T4RB-16L-OO	A0J0312-04	Soil	10/07/20 13:35	10/09/20 13:30
T4RB-17L	A0J0312-05	Soil	10/08/20 10:25	10/09/20 13:30
T4RB-17L-ON	A0J0312-06	Soil	10/08/20 11:15	10/09/20 13:30
T4RB-17U	A0J0312-07	Soil	10/08/20 11:50	10/09/20 13:30
T4RB-K1	A0J0312-08	Soil	10/08/20 13:35	10/09/20 13:30
T4RB-K2	A0J0312-09	Soil	10/08/20 14:10	10/09/20 13:30
T4RB-BEBRA	A0J0312-10	Soil	10/08/20 14:50	10/09/20 13:30
T4RB-OJ	A0J0312-11	Soil	10/09/20 10:15	10/09/20 13:30
T4RB-47U	A0J0312-12	Soil	10/09/20 10:55	10/09/20 13:30
T4RB-46U	A0J0312-13	Soil	10/09/20 11:30	10/09/20 13:30

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL CASE NARRATIVE

Work Order: A0J0312

Amended Report Revision 1:

Additional Analysis by EPA 8270E-

This report supersedes all previous reports.

The final report has been amended to report selected compounds by EPA 8270E for sample; T4RB-17L (Apex ID: A0J0312-05)

Darrell Auvil
Project Manager
3/17/2021

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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
T4RB-16U (A0J0312-01)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	**15.1**	10.3	25.0	mg/kg dry	1	10/15/20 02:06	NWTPH-Dx	**Ja**
Oil	**86.6**	20.7	50.0	mg/kg dry	1	10/15/20 02:06	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)		*Recovery: 101 %*		*Limits: 50-150 %*	*1*	*10/15/20 02:06*	*NWTPH-Dx*	
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	13.7	27.3	mg/kg dry	1	10/15/20 02:26	NWTPH-Dx	
Oil	**88.1**	27.3	54.7	mg/kg dry	1	10/15/20 02:26	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 99 %*		*Limits: 50-150 %*	*1*	*10/15/20 02:26*	*NWTPH-Dx*	
T4RB-16L-OO (A0J0312-04)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	12.7	25.4	mg/kg dry	1	10/15/20 02:47	NWTPH-Dx	
Oil	**26.3**	25.4	50.7	mg/kg dry	1	10/15/20 02:47	NWTPH-Dx	**Ja**
Surrogate: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*	*1*	*10/15/20 02:47*	*NWTPH-Dx*	
T4RB-17L-ON (A0J0312-06RE1)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	42.5	85.0	mg/kg dry	2	10/15/20 09:09	NWTPH-Dx	
Oil	**917**	85.0	170	mg/kg dry	2	10/15/20 09:09	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*2*	*10/15/20 09:09*	*NWTPH-Dx*	
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	287	575	mg/kg dry	20	10/14/20 22:20	NWTPH-Dx	
Oil	**1770**	575	1150	mg/kg dry	20	10/14/20 22:20	NWTPH-Dx	**F-13**
Surrogate: o-Terphenyl (Surr)		*Recovery: %*		*Limits: 50-150 %*	*20*	*10/14/20 22:20*	*NWTPH-Dx*	*S-01*
T4RB-K1 (A0J0312-08)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	285	571	mg/kg dry	20	10/14/20 22:41	NWTPH-Dx	
Oil	**8440**	571	1140	mg/kg dry	20	10/14/20 22:41	NWTPH-Dx	**F-13**
Surrogate: o-Terphenyl (Surr)		*Recovery: %*		*Limits: 50-150 %*	*20*	*10/14/20 22:41*	*NWTPH-Dx*	*S-01*
T4RB-K2 (A0J0312-09)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	11.9	25.0	mg/kg dry	1	10/14/20 23:22	NWTPH-Dx	
Oil	**220**	23.7	50.0	mg/kg dry	1	10/14/20 23:22	NWTPH-Dx	**F-13**
Surrogate: o-Terphenyl (Surr)		*Recovery: 107 %*		*Limits: 50-150 %*	*1*	*10/14/20 23:22*	*NWTPH-Dx*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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
T4RB-BEBRA (A0J0312-10)				**Matrix: Soil**		**Batch: 0100476**		
Diesel	ND	10.8	25.0	mg/kg dry	1	10/14/20 23:42	NWTPH-Dx	
Oil	**662**	21.6	50.0	mg/kg dry	1	10/14/20 23:42	NWTPH-Dx	**F-13**
Surrogate: o-Terphenyl (Surr)		*Recovery: 107 %*		*Limits: 50-150 %*	*1*	*10/14/20 23:42*	*NWTPH-Dx*	
T4RB-OJ (A0J0312-11RE1)				**Matrix: Soil**		**Batch: 0100515**		
Diesel	**24.3**	10.6	25.0	mg/kg dry	1	10/16/20 09:25	NWTPH-Dx	**Ja, F-13, F-15**
Oil	**277**	21.3	50.0	mg/kg dry	1	10/16/20 09:25	NWTPH-Dx	**F-13, F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 105 %*		*Limits: 50-150 %*	*1*	*10/16/20 09:25*	*NWTPH-Dx*	
T4RB-47U (A0J0312-12)				**Matrix: Soil**		**Batch: 0100515**		
Diesel	ND	9.90	25.0	mg/kg dry	1	10/16/20 07:28	NWTPH-Dx	
Oil	ND	19.8	50.0	mg/kg dry	1	10/16/20 07:28	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*10/16/20 07:28*	*NWTPH-Dx*	
T4RB-46U (A0J0312-13RE1)				**Matrix: Soil**		**Batch: 0100515**		
Diesel	**90.7**	20.4	40.9	mg/kg dry	2	10/16/20 12:10	NWTPH-Dx	**F-17**
Oil	**268**	40.9	81.8	mg/kg dry	2	10/16/20 12:10	NWTPH-Dx	**F-17**
Surrogate: o-Terphenyl (Surr)		*Recovery: 102 %*		*Limits: 50-150 %*	*2*	*10/16/20 12:10*	*NWTPH-Dx*	

Apex Laboratories



Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: 0100450**		
Chlorobenzene	ND	19.3	38.5	ug/kg dry	50	10/14/20 15:47	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*10/14/20 15:47*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*10/14/20 15:47*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*	*1*	*10/14/20 15:47*	*5035A/8260D*	
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: 0100450**		
Chlorobenzene	ND	26.7	53.5	ug/kg dry	50	10/14/20 16:41	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/14/20 16:41*	*5035A/8260D*	
Toluene-d8 (Surr)			*99 %*	*80-120 %*	*1*	*10/14/20 16:41*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*102 %*	*79-120 %*	*1*	*10/14/20 16:41*	*5035A/8260D*	
T4RB-K1 (A0J0312-08RE1)				**Matrix: Soil**		**Batch: 0100496**		
Chlorobenzene	ND	22.9	45.7	ug/kg dry	50	10/15/20 11:51	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/15/20 11:51*	*5035A/8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*10/15/20 11:51*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*98 %*	*79-120 %*	*1*	*10/15/20 11:51*	*5035A/8260D*	
T4RB-46U (A0J0312-13)				**Matrix: Soil**		**Batch: 0100450**		
Chlorobenzene	ND	15.4	30.9	ug/kg dry	50	10/14/20 18:57	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/14/20 18:57*	*5035A/8260D*	
Toluene-d8 (Surr)			*100 %*	*80-120 %*	*1*	*10/14/20 18:57*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*	*1*	*10/14/20 18:57*	*5035A/8260D*	

Apex Laboratories



Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16U (A0J0312-01)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	4.27	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1221	ND	9.18	9.18	ug/kg dry	1	10/22/20 08:28	EPA 8082A	R-02
Aroclor 1232	ND	5.87	5.87	ug/kg dry	1	10/22/20 08:28	EPA 8082A	R-02
Aroclor 1242	ND	4.27	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1248	ND	4.27	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1254	**15.4**	2.13	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	**P-12**
Aroclor 1260	**6.24**	2.13	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	**P-12**
Aroclor 1262	ND	2.13	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1268	ND	2.13	4.27	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 95 %*		*Limits: 60-125 %*	*1*	*10/22/20 08:28*	*EPA 8082A*	
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Aroclor 1221	ND	5.52	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Aroclor 1232	ND	5.52	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Aroclor 1242	ND	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Aroclor 1248	ND	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Aroclor 1254	**11.5**	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	**P-12**
Aroclor 1260	**3.99**	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	**Ja**
Aroclor 1262	ND	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Aroclor 1268	ND	2.76	5.52	ug/kg dry	1	10/22/20 09:03	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 110 %*		*Limits: 60-125 %*	*1*	*10/22/20 09:03*	*EPA 8082A*	
T4RB-16L-OO (A0J0312-04)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1221	ND	5.07	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1232	ND	5.07	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1242	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1248	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1254	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1260	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1262	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1268	ND	2.54	5.07	ug/kg dry	1	10/22/20 09:38	EPA 8082A	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-OO (A0J0312-04)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 109 %*		*Limits: 60-125 %*	*1*	*10/22/20 09:38*	*EPA 8082A*	
T4RB-17L-ON (A0J0312-06)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	16.6	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Aroclor 1221	ND	16.6	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Aroclor 1232	ND	16.6	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Aroclor 1242	ND	16.6	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Aroclor 1248	ND	8.31	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Aroclor 1254	**109**	8.31	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	**P-12**
Aroclor 1260	**106**	8.31	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	**P-12**
Aroclor 1262	ND	8.31	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Aroclor 1268	ND	8.31	16.6	ug/kg dry	1	10/22/20 10:13	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 103 %*		*Limits: 60-125 %*	*1*	*10/22/20 10:13*	*EPA 8082A*	
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	
Aroclor 1221	ND	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	
Aroclor 1232	ND	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	
Aroclor 1242	**11.5**	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	**B-02, P-12**
Aroclor 1248	ND	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	
Aroclor 1254	**68.5**	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	**P-12**
Aroclor 1260	**101**	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	**P-12**
Aroclor 1262	ND	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	
Aroclor 1268	ND	2.81	5.62	ug/kg dry	1	10/22/20 10:48	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 97 %*		*Limits: 60-125 %*	*1*	*10/22/20 10:48*	*EPA 8082A*	
T4RB-K1 (A0J0312-08RE1)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1221	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1232	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1242	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1248	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1254	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1260	**1190**	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-K1 (A0J0312-08RE1)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1262	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Aroclor 1268	ND	28.4	56.8	ug/kg dry	10	10/22/20 12:52	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 68 %*	*Limits: 60-125 %*		*10*	*10/22/20 12:52*	*EPA 8082A*	
T4RB-K2 (A0J0312-09)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1221	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1232	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1242	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1248	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1254	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1260	**27.5**	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1262	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Aroclor 1268	ND	2.40	4.80	ug/kg dry	1	10/22/20 07:53	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 95 %*	*Limits: 60-125 %*		*1*	*10/22/20 07:53*	*EPA 8082A*	
T4RB-BEBRA (A0J0312-10)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1221	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1232	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1242	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1248	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1254	**36.7**	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	**P-12**
Aroclor 1260	**49.9**	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	**P-12**
Aroclor 1262	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Aroclor 1268	ND	2.16	4.32	ug/kg dry	1	10/22/20 08:28	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 85 %*	*Limits: 60-125 %*		*1*	*10/22/20 08:28*	*EPA 8082A*	
T4RB-OJ (A0J0312-11RE1)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	4.42	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	
Aroclor 1221	ND	4.42	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	
Aroclor 1232	ND	4.42	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	
Aroclor 1242	ND	4.42	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-OJ (A0J0312-11RE1)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1248	ND	2.21	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	
Aroclor 1254	**7.36**	2.21	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	**P-12**
Aroclor 1260	**8.15**	2.21	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	**P-12**
Aroclor 1262	ND	2.21	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	
Aroclor 1268	ND	2.21	4.42	ug/kg dry	1	10/22/20 12:16	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 91 %*		*Limits: 60-125 %*	*1*	*10/22/20 12:16*	*EPA 8082A*	
T4RB-46U (A0J0312-13)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.03	4.06	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1221	ND	2.03	4.06	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1232	ND	4.06	4.06	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1242	ND	4.06	4.06	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1248	ND	4.06	4.06	ug/kg dry	1	10/22/20 09:38	EPA 8082A	
Aroclor 1254	ND	13.4	13.4	ug/kg dry	1	10/22/20 09:38	EPA 8082A	R-02
Aroclor 1260	ND	7.92	7.92	ug/kg dry	1	10/22/20 09:38	EPA 8082A	R-02
Aroclor 1262	ND	5.99	5.99	ug/kg dry	1	10/22/20 09:38	EPA 8082A	R-02
Aroclor 1268	ND	4.16	4.16	ug/kg dry	1	10/22/20 09:38	EPA 8082A	R-02
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 83 %*		*Limits: 60-125 %*	*1*	*10/22/20 09:38*	*EPA 8082A*	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-O52C (A0J0312-03RE1)				**Matrix: Soil**		**Batch: 0100735**		**C-05**
Aldrin	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
gamma-BHC (Lindane)	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
cis-Chlordane	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
trans-Chlordane	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
4,4'-DDD	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
4,4'-DDE	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
4,4'-DDT	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Dieldrin	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Endosulfan I	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Endosulfan II	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Endosulfan sulfate	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Chlordane (Technical)	ND	39.7	79.4	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
cis-Nonachlor	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
2,4'-DDD	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
2,4'-DDE	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
2,4'-DDT	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Oxychlordane	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
trans-Nonachlor	ND	1.32	2.65	ug/kg dry	1	10/23/20 20:54	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*54 %*	*Limits: 42-129 %*	*1*	*10/23/20 20:54*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*109 %*	*55-130 %*	*1*	*10/23/20 20:54*	*EPA 8081B*	
T4RB-17U (A0J0312-07RE1)				**Matrix: Soil**		**Batch: 0100735**		**C-05**
Aldrin	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
gamma-BHC (Lindane)	ND	28.9	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
cis-Chlordane	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
trans-Chlordane	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
4,4'-DDD	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
4,4'-DDE	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
4,4'-DDT	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
Dieldrin	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
Endosulfan I	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
Endosulfan II	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
Endosulfan sulfate	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	

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Darrell Auvil, Project Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-17U (A0J0312-07RE1)				**Matrix: Soil**		**Batch: 0100735**		**C-05**
Chlordane (Technical)	ND	433	866	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
cis-Nonachlor	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
2,4'-DDD	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
2,4'-DDE	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
2,4'-DDT	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
Oxychlordane	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
trans-Nonachlor	ND	14.4	28.9	ug/kg dry	5	10/23/20 21:12	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*	*Limits: 42-129 %*	*5*	*10/23/20 21:12*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*159 %*	*55-130 %*	*5*	*10/23/20 21:12*	*EPA 8081B*	*S-04*
T4RB-K1 (A0J0312-08RE1)				**Matrix: Soil**		**Batch: 0100735**		**C-05**
Aldrin	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
gamma-BHC (Lindane)	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
cis-Chlordane	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
trans-Chlordane	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
4,4'-DDD	**75.0**	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	**P-11**
4,4'-DDE	ND	27.0	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
4,4'-DDT	ND	67.4	67.4	ug/kg dry	5	10/23/20 14:41	EPA 8081B	R-02
Dieldrin	ND	27.0	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
Endosulfan I	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
Endosulfan II	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
Endosulfan sulfate	ND	27.0	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
Chlordane (Technical)	ND	405	809	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
cis-Nonachlor	ND	51.3	51.3	ug/kg dry	5	10/23/20 14:41	EPA 8081B	R-02
2,4'-DDD	ND	37.8	37.8	ug/kg dry	5	10/23/20 14:41	EPA 8081B	R-02
2,4'-DDE	ND	27.0	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
2,4'-DDT	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
Oxychlordane	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
trans-Nonachlor	ND	13.5	27.0	ug/kg dry	5	10/23/20 14:41	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 75 %*	*Limits: 42-129 %*	*5*	*10/23/20 14:41*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*202 %*	*55-130 %*	*5*	*10/23/20 14:41*	*EPA 8081B*	*S-04*
T4RB-46U (A0J0312-13RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
Aldrin	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	

Apex Laboratories



Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-46U (A0J0312-13RE1)				**Matrix: Soil**		**Batch: 0100400**		**C-05**
gamma-BHC (Lindane)	ND	19.6	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
cis-Chlordane	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
trans-Chlordane	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
4,4'-DDD	ND	19.6	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
4,4'-DDE	**25.8**	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
4,4'-DDT	**268**	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
Dieldrin	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
Endosulfan I	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
Endosulfan II	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
Endosulfan sulfate	ND	31.4	31.4	ug/kg dry	5	10/17/20 23:48	EPA 8081B	R-02
Chlordane (Technical)	ND	294	588	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
cis-Nonachlor	ND	19.6	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
2,4'-DDD	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
2,4'-DDE	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
2,4'-DDT	**43.3**	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
Oxychlordane	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
trans-Nonachlor	ND	9.81	19.6	ug/kg dry	5	10/17/20 23:48	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*76 %*	*Limits:*	*42-129 %*	*10/17/20 23:48*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*336 %*		*55-130 %*	*10/17/20 23:48*	*EPA 8081B*	*S-04*

Apex Laboratories



Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16U (A0J0312-01)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	**172**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Acenaphthylene	ND	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Anthracene	**156**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Benz(a)anthracene	**1190**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Benzo(a)pyrene	**1910**	85.8	172	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Benzo(b)fluoranthene	**2100**	85.8	172	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Benzo(k)fluoranthene	**718**	85.8	172	ug/kg dry	40	10/21/20 15:57	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**1270**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Chrysene	**1350**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Dibenz(a,h)anthracene	**264**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Fluoranthene	**1810**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Fluorene	ND	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**1200**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
2-Methylnaphthalene	ND	115	229	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Naphthalene	ND	115	229	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Phenanthrene	**733**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Pyrene	**1710**	57.1	115	ug/kg dry	40	10/21/20 15:57	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*60 %*	*Limits: 37-122 %*	*40*	*10/21/20 15:57*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*40*	*10/21/20 15:57*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*33 %*	*33-122 %*	*40*	*10/21/20 15:57*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*83 %*	*54-127 %*	*40*	*10/21/20 15:57*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*47 %*	*35-120 %*	*40*	*10/21/20 15:57*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*84 %*	*39-132 %*	*40*	*10/21/20 15:57*	*EPA 8270E*	*S-05*
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Acenaphthylene	ND	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Anthracene	ND	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Benz(a)anthracene	**202**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Benzo(a)pyrene	**303**	110	221	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Benzo(b)fluoranthene	**351**	110	221	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Benzo(k)fluoranthene	**176**	110	221	ug/kg dry	40	10/21/20 17:09	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	**191**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Chrysene	**198**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: 0100712**		
Dibenz(a,h)anthracene	ND	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Fluoranthene	**289**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Fluorene	ND	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**176**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
2-Methylnaphthalene	ND	147	294	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Naphthalene	ND	147	294	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Phenanthrene	**130**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	**Ja**
Pyrene	**278**	73.4	147	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	1100	2210	ug/kg dry	40	10/21/20 17:09	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*52 %*	*Limits: 37-122 %*	*40*	*10/21/20 17:09*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*57 %*	*44-120 %*	*40*	*10/21/20 17:09*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*39 %*	*33-122 %*	*40*	*10/21/20 17:09*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*80 %*	*54-127 %*	*40*	*10/21/20 17:09*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*41 %*	*35-120 %*	*40*	*10/21/20 17:09*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*40*	*10/21/20 17:09*	*EPA 8270E*	*S-05*
T4RB-16L-OO (A0J0312-04RE1)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Acenaphthylene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Anthracene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Benz(a)anthracene	**9.83**	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	**Ja**
Benzo(a)pyrene	**14.9**	10.4	20.7	ug/kg dry	4	10/22/20 14:06	EPA 8270E	**Ja**
Benzo(b)fluoranthene	**17.1**	10.4	20.7	ug/kg dry	4	10/22/20 14:06	EPA 8270E	**Ja**
Benzo(k)fluoranthene	**10.9**	10.4	20.7	ug/kg dry	4	10/22/20 14:06	EPA 8270E	**Ja**
Benzo(g,h,i)perylene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Chrysene	**9.21**	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	**Ja**
Dibenz(a,h)anthracene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Fluoranthene	**21.1**	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Fluorene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
2-Methylnaphthalene	ND	13.8	27.6	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Naphthalene	ND	13.8	27.6	ug/kg dry	4	10/22/20 14:06	EPA 8270E	
Phenanthrene	**13.4**	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	**Ja**
Pyrene	**18.8**	6.88	13.8	ug/kg dry	4	10/22/20 14:06	EPA 8270E	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-OO (A0J0312-04RE1)				**Matrix: Soil**		**Batch: 0100712**		
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*82 %*	*Limits: 37-122 %*	*4*	*10/22/20 14:06*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*84 %*	*44-120 %*	*4*	*10/22/20 14:06*	*EPA 8270E*	
Phenol-d6 (Surr)			*65 %*	*33-122 %*	*4*	*10/22/20 14:06*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*104 %*	*54-127 %*	*4*	*10/22/20 14:06*	*EPA 8270E*	
2-Fluorophenol (Surr)			*72 %*	*35-120 %*	*4*	*10/22/20 14:06*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*88 %*	*39-132 %*	*4*	*10/22/20 14:06*	*EPA 8270E*	
T4RB-17L (A0J0312-05)				**Matrix: Soil**		**Batch: 1020010**		**H-08**
Acenaphthene	**739**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Acenaphthylene	ND	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Anthracene	**676**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Benz(a)anthracene	**4790**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Benzo(a)pyrene	**7710**	293	586	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Benzo(b)fluoranthene	**8420**	293	586	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Benzo(k)fluoranthene	**3300**	293	586	ug/kg dry	100	02/02/21 13:17	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**5200**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Chrysene	**5350**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Dibenz(a,h)anthracene	**946**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Fluoranthene	**7420**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Fluorene	**239**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	**Ja**
Indeno(1,2,3-cd)pyrene	**5120**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
2-Methylnaphthalene	ND	391	780	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Naphthalene	ND	391	780	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Phenanthrene	**3190**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Pyrene	**7020**	195	391	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	2930	5860	ug/kg dry	100	02/02/21 13:17	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*69 %*	*Limits: 37-122 %*	*100*	*02/02/21 13:17*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*76 %*	*44-120 %*	*100*	*02/02/21 13:17*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*58 %*	*33-122 %*	*100*	*02/02/21 13:17*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*85 %*	*54-127 %*	*100*	*02/02/21 13:17*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*46 %*	*35-120 %*	*100*	*02/02/21 13:17*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*174 %*	*39-132 %*	*100*	*02/02/21 13:17*	*EPA 8270E*	*S-05*
T4RB-17L-ON (A0J0312-06)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	**749**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	

Apex Laboratories



Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-17L-ON (A0J0312-06)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthylene	ND	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Anthracene	**681**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Benz(a)anthracene	**4710**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Benzo(a)pyrene	**7550**	424	848	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Benzo(b)fluoranthene	**8760**	424	848	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Benzo(k)fluoranthene	**3040**	424	848	ug/kg dry	40	10/21/20 18:22	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**5050**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Chrysene	**5170**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Dibenz(a,h)anthracene	**1030**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Fluoranthene	**7060**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Fluorene	ND	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**4900**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
2-Methylnaphthalene	ND	566	1130	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Naphthalene	ND	566	1130	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Phenanthrene	**3240**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Pyrene	**6930**	282	566	ug/kg dry	40	10/21/20 18:22	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*53 %*	*Limits: 37-122 %*	*40*	*10/21/20 18:22*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*72 %*	*44-120 %*	*40*	*10/21/20 18:22*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*16 %*	*33-122 %*	*40*	*10/21/20 18:22*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*96 %*	*54-127 %*	*40*	*10/21/20 18:22*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*47 %*	*35-120 %*	*40*	*10/21/20 18:22*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*115 %*	*39-132 %*	*40*	*10/21/20 18:22*	*EPA 8270E*	*S-05*
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	**1900**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Acenaphthylene	ND	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Anthracene	**1970**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Benz(a)anthracene	**14100**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Benzo(a)pyrene	**21900**	287	574	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Benzo(b)fluoranthene	**25100**	287	574	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Benzo(k)fluoranthene	**8920**	287	574	ug/kg dry	40	10/21/20 18:59	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**14400**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Chrysene	**16300**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Dibenz(a,h)anthracene	**3010**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	

Apex Laboratories



Darrell Auvil, Project Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: 0100712**		
Fluoranthene	**19000**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Fluorene	**720**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**14000**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
2-Methylnaphthalene	ND	383	765	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Naphthalene	ND	383	765	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Phenanthrene	**8890**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Pyrene	**18500**	191	383	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	2870	5740	ug/kg dry	40	10/21/20 18:59	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*79 %*	*Limits: 37-122 %*	*40*	*10/21/20 18:59*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*80 %*	*44-120 %*	*40*	*10/21/20 18:59*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*38 %*	*33-122 %*	*40*	*10/21/20 18:59*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*98 %*	*54-127 %*	*40*	*10/21/20 18:59*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*53 %*	*35-120 %*	*40*	*10/21/20 18:59*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*131 %*	*39-132 %*	*40*	*10/21/20 18:59*	*EPA 8270E*	*S-05*
T4RB-K1 (A0J0312-08)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	**6020**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Acenaphthylene	ND	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Anthracene	**5750**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Benz(a)anthracene	**40600**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Benzo(a)pyrene	**61600**	714	1430	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Benzo(b)fluoranthene	**69400**	714	1430	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Benzo(k)fluoranthene	**25100**	714	1430	ug/kg dry	100	10/21/20 19:35	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**39700**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Chrysene	**45300**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Dibenz(a,h)anthracene	**8510**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Fluoranthene	**58400**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Fluorene	**2640**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**37600**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
2-Methylnaphthalene	ND	953	1900	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Naphthalene	**1360**	953	1900	ug/kg dry	100	10/21/20 19:35	EPA 8270E	**Ja**
Phenanthrene	**25600**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Pyrene	**57100**	475	953	ug/kg dry	100	10/21/20 19:35	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	7140	14300	ug/kg dry	100	10/21/20 19:35	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-K1 (A0J0312-08)				**Matrix: Soil**		**Batch: 0100712**		
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*73 %*	*Limits: 37-122 %*	*100*	*10/21/20 19:35*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*77 %*	*44-120 %*	*100*	*10/21/20 19:35*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*16 %*	*33-122 %*	*100*	*10/21/20 19:35*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*114 %*	*54-127 %*	*100*	*10/21/20 19:35*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*17 %*	*35-120 %*	*100*	*10/21/20 19:35*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*173 %*	*39-132 %*	*100*	*10/21/20 19:35*	*EPA 8270E*	*S-05*
T4RB-K2 (A0J0312-09)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	**229**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	**Ja**
Acenaphthylene	ND	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Anthracene	**233**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	**Ja**
Benz(a)anthracene	**1660**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Benzo(a)pyrene	**2700**	238	475	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Benzo(b)fluoranthene	**3210**	238	475	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Benzo(k)fluoranthene	**1140**	238	475	ug/kg dry	40	10/21/20 20:11	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**1730**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Chrysene	**2020**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Dibenz(a,h)anthracene	**385**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Fluoranthene	**2760**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Fluorene	ND	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**1690**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
2-Methylnaphthalene	ND	317	634	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Naphthalene	ND	317	634	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Phenanthrene	**1200**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Pyrene	**2630**	158	317	ug/kg dry	40	10/21/20 20:11	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*51 %*	*Limits: 37-122 %*	*40*	*10/21/20 20:11*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*64 %*	*44-120 %*	*40*	*10/21/20 20:11*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*13 %*	*33-122 %*	*40*	*10/21/20 20:11*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*40*	*10/21/20 20:11*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*32 %*	*35-120 %*	*40*	*10/21/20 20:11*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*99 %*	*39-132 %*	*40*	*10/21/20 20:11*	*EPA 8270E*	*S-05*
T4RB-BEBRA (A0J0312-10)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	**1130**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Acenaphthylene	ND	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-BEBRA (A0J0312-10)				**Matrix: Soil**		**Batch: 0100712**		
Anthracene	**1140**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Benz(a)anthracene	**8610**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Benzo(a)pyrene	**13200**	219	438	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Benzo(b)fluoranthene	**15300**	219	438	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Benzo(k)fluoranthene	**5110**	219	438	ug/kg dry	40	10/21/20 20:48	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**8330**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Chrysene	**9360**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Dibenz(a,h)anthracene	**1700**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Fluoranthene	**12300**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Fluorene	**400**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**8050**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
2-Methylnaphthalene	ND	293	584	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Naphthalene	ND	293	584	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Phenanthrene	**5250**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Pyrene	**11900**	146	293	ug/kg dry	40	10/21/20 20:48	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*65 %*	*Limits: 37-122 %*	*40*	*10/21/20 20:48*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*74 %*	*44-120 %*	*40*	*10/21/20 20:48*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*10 %*	*33-122 %*	*40*	*10/21/20 20:48*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*101 %*	*54-127 %*	*40*	*10/21/20 20:48*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*24 %*	*35-120 %*	*40*	*10/21/20 20:48*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*99 %*	*39-132 %*	*40*	*10/21/20 20:48*	*EPA 8270E*	*S-05*
T4RB-OJ (A0J0312-11)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Acenaphthylene	ND	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Anthracene	ND	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Benz(a)anthracene	**522**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Benzo(a)pyrene	**940**	217	435	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Benzo(b)fluoranthene	**1230**	217	435	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Benzo(k)fluoranthene	**448**	217	435	ug/kg dry	40	10/21/20 21:24	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**654**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Chrysene	**646**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Dibenz(a,h)anthracene	ND	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Fluoranthene	**814**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	

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Darrell Auvil, Project Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-OJ (A0J0312-11)				**Matrix: Soil**		**Batch: 0100712**		
Fluorene	ND	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**654**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
2-Methylnaphthalene	ND	290	579	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Naphthalene	ND	290	579	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Phenanthrene	**272**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	**Ja**
Pyrene	**806**	145	290	ug/kg dry	40	10/21/20 21:24	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*59 %*	*Limits: 37-122 %*	*40*	*10/21/20 21:24*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*72 %*	*44-120 %*	*40*	*10/21/20 21:24*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*13 %*	*33-122 %*	*40*	*10/21/20 21:24*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*90 %*	*54-127 %*	*40*	*10/21/20 21:24*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*33 %*	*35-120 %*	*40*	*10/21/20 21:24*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*100 %*	*39-132 %*	*40*	*10/21/20 21:24*	*EPA 8270E*	*S-05*
T4RB-47U (A0J0312-12RE1)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Acenaphthylene	ND	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Anthracene	ND	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Benz(a)anthracene	**9.11**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Benzo(a)pyrene	**15.7**	2.15	4.30	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Benzo(b)fluoranthene	**19.3**	2.15	4.30	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Benzo(k)fluoranthene	**7.81**	2.15	4.30	ug/kg dry	1	10/22/20 14:42	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**10.8**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Chrysene	**11.1**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Dibenz(a,h)anthracene	**1.96**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	**Ja**
Fluoranthene	**15.6**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Fluorene	ND	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**10.3**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
2-Methylnaphthalene	ND	2.87	5.72	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Naphthalene	ND	2.87	5.72	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Phenanthrene	**5.70**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Pyrene	**17.2**	1.43	2.87	ug/kg dry	1	10/22/20 14:42	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*77 %*	*Limits: 37-122 %*	*1*	*10/22/20 14:42*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*74 %*	*44-120 %*	*1*	*10/22/20 14:42*	*EPA 8270E*	
Phenol-d6 (Surr)			*67 %*	*33-122 %*	*1*	*10/22/20 14:42*	*EPA 8270E*	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-47U (A0J0312-12RE1)				**Matrix: Soil**		**Batch: 0100712**		
Surrogate: p-Terphenyl-d14 (Surr)		*Recovery:*	*83 %*	*Limits: 54-127 %*	*1*	*10/22/20 14:42*	*EPA 8270E*	
2-Fluorophenol (Surr)			*73 %*	*35-120 %*	*1*	*10/22/20 14:42*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*83 %*	*39-132 %*	*1*	*10/22/20 14:42*	*EPA 8270E*	
T4RB-46U (A0J0312-13RE1)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Acenaphthylene	**1.54**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	**Ja**
Anthracene	ND	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Benz(a)anthracene	**5.91**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Benzo(a)pyrene	**13.0**	2.13	4.26	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Benzo(b)fluoranthene	**12.3**	2.13	4.26	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Benzo(k)fluoranthene	**4.70**	2.13	4.26	ug/kg dry	1	10/22/20 15:19	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**14.0**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Chrysene	**7.37**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Dibenz(a,h)anthracene	ND	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Fluoranthene	**10.8**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Fluorene	ND	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**9.68**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
2-Methylnaphthalene	ND	2.84	5.67	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Naphthalene	ND	2.84	5.67	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Phenanthrene	**5.03**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Pyrene	**14.8**	1.42	2.84	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	21.3	42.6	ug/kg dry	1	10/22/20 15:19	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*77 %*	*Limits: 37-122 %*	*1*	*10/22/20 15:19*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*73 %*	*44-120 %*	*1*	*10/22/20 15:19*	*EPA 8270E*	
Phenol-d6 (Surr)			*69 %*	*33-122 %*	*1*	*10/22/20 15:19*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*90 %*	*54-127 %*	*1*	*10/22/20 15:19*	*EPA 8270E*	
2-Fluorophenol (Surr)			*73 %*	*35-120 %*	*1*	*10/22/20 15:19*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*93 %*	*39-132 %*	*1*	*10/22/20 15:19*	*EPA 8270E*	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**				
Batch: 0100628								
Arsenic	**5.72**	0.675	1.35	mg/kg dry	10	10/20/20 17:41	EPA 6020A	
Cadmium	ND	0.135	0.270	mg/kg dry	10	10/20/20 17:41	EPA 6020A	
Copper	**17.5**	1.35	2.70	mg/kg dry	10	10/20/20 17:41	EPA 6020A	
Lead	**23.6**	0.675	1.35	mg/kg dry	10	10/20/20 17:41	EPA 6020A	
Mercury	ND	0.108	0.216	mg/kg dry	10	10/20/20 17:41	EPA 6020A	
Zinc	**67.4**	2.70	5.40	mg/kg dry	10	10/20/20 17:41	EPA 6020A	
T4RB-17U (A0J0312-07)				**Matrix: Soil**				
Batch: 0100628								
Arsenic	**8.31**	0.767	1.53	mg/kg dry	10	10/20/20 17:46	EPA 6020A	
Cadmium	**1.21**	0.153	0.307	mg/kg dry	10	10/20/20 17:46	EPA 6020A	
Copper	**61.2**	1.53	3.07	mg/kg dry	10	10/20/20 17:46	EPA 6020A	
Lead	**199**	0.767	1.53	mg/kg dry	10	10/20/20 17:46	EPA 6020A	
Mercury	ND	0.123	0.245	mg/kg dry	10	10/20/20 17:46	EPA 6020A	
Zinc	**311**	3.07	6.13	mg/kg dry	10	10/20/20 17:46	EPA 6020A	
T4RB-K1 (A0J0312-08)				**Matrix: Soil**				
Batch: 0100628								
Arsenic	**65.5**	0.771	1.54	mg/kg dry	10	10/20/20 17:51	EPA 6020A	
Cadmium	**74.5**	0.154	0.309	mg/kg dry	10	10/20/20 17:51	EPA 6020A	
Copper	**434**	1.54	3.09	mg/kg dry	10	10/20/20 17:51	EPA 6020A	
Mercury	**0.851**	0.123	0.247	mg/kg dry	10	10/20/20 17:51	EPA 6020A	
T4RB-K1 (A0J0312-08RE1)				**Matrix: Soil**				
Batch: 0100628								
Lead	**11100**	3.09	6.17	mg/kg dry	200	10/22/20 11:21	EPA 6020A	
Zinc	**12600**	61.7	123	mg/kg dry	200	10/22/20 11:21	EPA 6020A	
T4RB-47U (A0J0312-12)				**Matrix: Soil**				
Batch: 0100628								
Arsenic	**1.56**	0.579	1.16	mg/kg dry	10	10/20/20 17:56	EPA 6020A	
Cadmium	**0.286**	0.116	0.232	mg/kg dry	10	10/20/20 17:56	EPA 6020A	
Copper	**19.8**	1.16	2.32	mg/kg dry	10	10/20/20 17:56	EPA 6020A	
Mercury	ND	0.0926	0.185	mg/kg dry	10	10/20/20 17:56	EPA 6020A	

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-47U (A0J0312-12)				**Matrix: Soil**				
Zinc	**54.0**	2.32	4.63	mg/kg dry	10	10/20/20 17:56	EPA 6020A	
T4RB-47U (A0J0312-12RE1)				**Matrix: Soil**				
Batch: 0100628								
Lead	**10.7**	0.116	0.232	mg/kg dry	10	10/22/20 11:26	EPA 6020A	
T4RB-46U (A0J0312-13)				**Matrix: Soil**				
Batch: 0100628								
Arsenic	**5.58**	0.561	1.12	mg/kg dry	10	10/20/20 18:01	EPA 6020A	
Cadmium	**7.13**	0.112	0.224	mg/kg dry	10	10/20/20 18:01	EPA 6020A	
Copper	**79.3**	1.12	2.24	mg/kg dry	10	10/20/20 18:01	EPA 6020A	
Mercury	ND	0.0897	0.179	mg/kg dry	10	10/20/20 18:01	EPA 6020A	
Zinc	**1130**	2.24	4.48	mg/kg dry	10	10/20/20 18:01	EPA 6020A	
T4RB-46U (A0J0312-13RE1)				**Matrix: Soil**				
Batch: 0100628								
Lead	**662**	1.12	2.24	mg/kg dry	100	10/22/20 11:31	EPA 6020A	

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-17L (A0J0312-05)				**Matrix: Soil**				
Batch: 1013217								
Total Solids	**68.3**	1.00	1.00	%	1	01/25/21 13:47	SM 2540 G	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16U (A0J0312-01)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**91.7**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**72.2**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-16L-OO (A0J0312-04)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**75.7**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-17L-ON (A0J0312-06)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**46.7**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**69.1**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-K1 (A0J0312-08)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**69.0**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-K2 (A0J0312-09)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**83.0**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-BEBRA (A0J0312-10)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**90.5**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-OJ (A0J0312-11)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**90.1**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-47U (A0J0312-12)				**Matrix: Soil**		**Batch: 0100410**		
% Solids	**93.1**	1.00	1.00	%	1	10/14/20 09:55	EPA 8000D	
T4RB-46U (A0J0312-13)				**Matrix: Soil**		**Batch: 0100366**		
% Solids	**93.9**	1.00	1.00	%	1	10/13/20 09:05	EPA 8000D	

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Butyl Tins

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-16L-O52C (A0J0312-03)				**Matrix: Soil**		**Batch: BIJ0485**		
Batch: BIJ0485								
Tributyltin Ion	ND	0.447	3.83	ug/kg dry	1	10/23/20 15:42	EPA 8270E-SIM	U
Batch: BIJ0485								
Surrogate: Tripentyltin		*Recovery: 63.4 %*		*Limits: 30-160 %*	*1*	*10/23/20 15:42*	*EPA 8270E-SIM*	
Tripropyltin			*52.2 %*	*30-160 %*	*1*	*10/23/20 15:42*	*EPA 8270E-SIM*	
T4RB-17U (A0J0312-07)				**Matrix: Soil**		**Batch: BIJ0485**		
Batch: BIJ0485								
Tributyltin Ion	**2.65**	0.447	3.83	ug/kg dry	1	10/23/20 15:59	EPA 8270E-SIM	**J**
Batch: BIJ0485								
Surrogate: Tripentyltin		*Recovery: 61.6 %*		*Limits: 30-160 %*	*1*	*10/23/20 15:59*	*EPA 8270E-SIM*	
Tripropyltin			*55.5 %*	*30-160 %*	*1*	*10/23/20 15:59*	*EPA 8270E-SIM*	
T4RB-K1 (A0J0312-08)				**Matrix: Soil**		**Batch: BIJ0485**		
Batch: BIJ0485								
Tributyltin Ion	**0.688**	0.449	3.85	ug/kg dry	1	10/23/20 16:15	EPA 8270E-SIM	**J**
Batch: BIJ0485								
Surrogate: Tripentyltin		*Recovery: 67.5 %*		*Limits: 30-160 %*	*1*	*10/23/20 16:15*	*EPA 8270E-SIM*	
Tripropyltin			*53.2 %*	*30-160 %*	*1*	*10/23/20 16:15*	*EPA 8270E-SIM*	
T4RB-46U (A0J0312-13)				**Matrix: Soil**		**Batch: BIJ0485**		
Batch: BIJ0485								
Tributyltin Ion	ND	0.446	3.82	ug/kg dry	1	10/23/20 16:32	EPA 8270E-SIM	U
Batch: BIJ0485								
Surrogate: Tripentyltin		*Recovery: 77.6 %*		*Limits: 30-160 %*	*1*	*10/23/20 16:32*	*EPA 8270E-SIM*	
Tripropyltin			*67.4 %*	*30-160 %*	*1*	*10/23/20 16:32*	*EPA 8270E-SIM*	

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

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 0100476 - EPA 3546 (Fuels)							Soil					
Blank (0100476-BLK1)			Prepared: 10/14/20 13:05		Analyzed: 10/14/20 22:20							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (0100476-BS1)			Prepared: 10/14/20 13:05		Analyzed: 10/14/20 22:41							
NWTPH-Dx												
Diesel	125	10.0	25.0	mg/kg wet	1	125	---	100	73-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100476-DUP1)			Prepared: 10/14/20 13:05		Analyzed: 10/14/20 23:22							
QC Source Sample: Non-SDG (A0I0786-06)												
Diesel	ND	13.0	26.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**222**	26.0	52.0	mg/kg dry	1	---	127	---	---	**54**	**30%**	Q-17
Surr: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100476-DUP2)			Prepared: 10/14/20 13:05		Analyzed: 10/15/20 03:28							
QC Source Sample: Non-SDG (A0J0336-06)												
Diesel	ND	10.1	25.0	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**337**	20.2	50.0	mg/kg dry	1	---	339	---	---	0.4	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 101 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Batch 0100515 - EPA 3546 (Fuels)							Soil					
Blank (0100515-BLK1)			Prepared: 10/15/20 12:51		Analyzed: 10/16/20 04:50							
NWTPH-Dx												
Diesel	ND	9.09	25.0	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	50.0	mg/kg wet	1	---	---	---	---	---	---	
Mineral Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 82 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (0100515-BS1)			Prepared: 10/15/20 12:51		Analyzed: 10/16/20 05:12							
NWTPH-Dx												

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100515 - EPA 3546 (Fuels)							**Soil**					
LCS (0100515-BS1)			Prepared: 10/15/20 12:51		Analyzed: 10/16/20 05:12							
Diesel	117	10.0	20.0	mg/kg wet	1	125	---	94	73-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100515-DUP1)			Prepared: 10/15/20 12:51		Analyzed: 10/16/20 05:57							
QC Source Sample: Non-SDG (A0J0136-12)												
Diesel	**14.8**	11.3	25.0	mg/kg dry	1	---	14.9	---	---	0.6	30%	Ja
Oil	**55.0**	22.6	50.0	mg/kg dry	1	---	1080	---	---	**181**	**30%**	Q-04
Mineral Oil	**43.3**	22.6	45.3	mg/kg dry	1	---	355	---	---	**157**	**30%**	Ja
Surr: o-Terphenyl (Surr)			*Recovery: 74 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100515-DUP2)			Prepared: 10/15/20 12:51		Analyzed: 10/16/20 06:21							
QC Source Sample: Non-SDG (A0J0508-01)												
Diesel	**50.9**	11.1	22.2	mg/kg dry	1	---	35.2	---	---	**36**	**30%**	F-11, Q-05
Oil	ND	22.2	44.5	mg/kg dry	1	---	ND	---	---	---	30%	
Mineral Oil	ND	22.2	44.5	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100450 - EPA 5035A							**Soil**					
Blank (0100450-BLK1)			Prepared: 10/14/20 09:00 Analyzed: 10/14/20 11:15									
5035A/8260D												
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*100 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*101 %*	*79-120 %*			*"*					
LCS (0100450-BS1)			Prepared: 10/14/20 09:00 Analyzed: 10/14/20 10:20									
5035A/8260D												
Chlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*99 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*			*"*					
Duplicate (0100450-DUP1)			Prepared: 10/07/20 13:05 Analyzed: 10/14/20 16:14									
QC Source Sample: T4RB-16L-O52C (A0J0312-03)												
5035A/8260D												
Chlorobenzene	ND	19.1	38.3	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 100 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*100 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*			*"*					
Matrix Spike (0100450-MS1)			Prepared: 10/08/20 11:50 Analyzed: 10/14/20 17:08									
QC Source Sample: T4RB-17U (A0J0312-07)												
5035A/8260D												
Chlorobenzene	2140	26.7	53.5	ug/kg dry	50	2140	ND	100	79-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*98 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*98 %*	*79-120 %*			*"*					

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ANALYTICAL REPORT

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Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100496 - EPA 5035A							**Soil**					
Blank (0100496-BLK1)			Prepared: 10/15/20 09:00 Analyzed: 10/15/20 11:24									
5035A/8260D												
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*101 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*			*"*					
LCS (0100496-BS1)			Prepared: 10/15/20 09:00 Analyzed: 10/15/20 10:30									
5035A/8260D												
Chlorobenzene	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*100 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*			*"*					
Duplicate (0100496-DUP1)			Prepared: 10/08/20 13:10 Analyzed: 10/15/20 13:40									
QC Source Sample: Non-SDG (A0J0493-11)												
Chlorobenzene	ND	11.5	23.0	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*100 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*			*"*					
Duplicate (0100496-DUP2)			Prepared: 10/09/20 12:00 Analyzed: 10/15/20 16:50									
QC Source Sample: Non-SDG (A0J0514-01)												
Chlorobenzene	ND	34.2	34.2	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*			*Dilution: 1x*					
Toluene-d8 (Surr)			*100 %*	*80-120 %*			*"*					
4-Bromofluorobenzene (Surr)			*99 %*	*79-120 %*			*"*					
Matrix Spike (0100496-MS1)			Prepared: 10/08/20 09:58 Analyzed: 10/15/20 15:29									
QC Source Sample: Non-SDG (A0J0493-14)												
5035A/8260D												
Chlorobenzene	875	11.2	22.4	ug/kg dry	50	898	ND	97	79-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 100 %*	*Limits: 80-120 %*			*Dilution: 1x*					

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100496 - EPA 5035A							**Soil**					
Matrix Spike (0100496-MS1)				Prepared: 10/08/20 09:58		Analyzed: 10/15/20 15:29						
QC Source Sample: Non-SDG (A0J0493-14)												
Surr: Toluene-d8 (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*		*Dilution: 1x*					
4-Bromofluorobenzene (Surr)			*99 %*		*79-120 %*		*"*					

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AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100700 - EPA 3546							**Soil**					
Blank (0100700-BLK1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 07:53							**C-07**
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	**4.22**	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B
Aroclor 1242	**2.13**	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	Ja, B-02
Aroclor 1248	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1262	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1268	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 111 %*		*Limits: 60-125 %*			*Dilution: 1x*				
LCS (0100700-BS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 08:10							**C-07**
EPA 8082A												
Aroclor 1016	196	2.00	4.00	ug/kg wet	1	250	---	79	47-134%	---	---	
Aroclor 1260	254	2.00	4.00	ug/kg wet	1	250	---	101	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 113 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Duplicate (0100700-DUP2)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 12:52							**C-07**
QC Source Sample: Non-SDG (A0J0358-02RE1)												
Aroclor 1016	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1221	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1232	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1242	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1248	**1350**	25.9	51.8	ug/kg dry	5	---	1130	---	---	18	30%	X
Aroclor 1254	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1260	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1262	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1268	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 60-125 %*			*Dilution: 5x*				
Matrix Spike (0100700-MS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 11:41							**C-07, Q-43**
QC Source Sample: Non-SDG (A0J0358-02RE1)												

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100700 - EPA 3546							**Soil**					
Matrix Spike (0100700-MS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 11:41							**C-07, Q-43**
QC Source Sample: Non-SDG (A0J0358-02RE1)												
EPA 8082A												
Aroclor 1016	959	25.5	51.0	ug/kg dry	5	255	ND	**376**	**47-134%**	---	---	
Aroclor 1260	299	25.5	51.0	ug/kg dry	5	255	ND	117	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*		*Limits: 60-125 %*				*Dilution: 5x*			

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100400-BLK1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 21:10								**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56	Analyzed: 10/17/20 22:20								**C-05**
EPA 8081B												
Aldrin	27.6	1.00	2.00	ug/kg wet	1	50.0	---	55	45-136%	---	---	
gamma-BHC (Lindane)	30.2	1.00	2.00	ug/kg wet	1	50.0	---	60	49-135%	---	---	Q-41
cis-Chlordane	40.4	1.00	2.00	ug/kg wet	1	50.0	---	81	54-133%	---	---	
trans-Chlordane	39.2	1.00	2.00	ug/kg wet	1	50.0	---	78	53-135%	---	---	
4,4'-DDD	54.1	1.00	2.00	ug/kg wet	1	50.0	---	108	56-139%	---	---	
4,4'-DDE	45.9	1.00	2.00	ug/kg wet	1	50.0	---	92	56-134%	---	---	
4,4'-DDT	51.7	1.00	2.00	ug/kg wet	1	50.0	---	103	50-141%	---	---	
Dieldrin	40.6	1.00	2.00	ug/kg wet	1	50.0	---	81	56-136%	---	---	
Endosulfan I	41.9	1.00	2.00	ug/kg wet	1	50.0	---	84	53-132%	---	---	
Endosulfan II	55.0	1.00	2.00	ug/kg wet	1	50.0	---	110	53-134%	---	---	

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Darrell Auvil, Project Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner
		Report ID: A0J0312 - 03 17 21 1056

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							Soil					
LCS (0100400-BS1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 22:20							C-05
Endosulfan sulfate	61.5	1.00	2.00	ug/kg wet	1	50.0	---	123	55-136%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*112 %*	*55-130 %*			*"*					
LCS (0100400-BS2)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 22:38							C-05
EPA 8081B												
cis-Nonachlor	50.0	1.00	2.00	ug/kg wet	1	50.0	---	100	68-121%	---	---	
2,4'-DDD	48.5	1.00	2.00	ug/kg wet	1	50.0	---	97	58-128%	---	---	
2,4'-DDE	38.2	1.00	2.00	ug/kg wet	1	50.0	---	76	49-125%	---	---	
2,4'-DDT	54.0	1.00	2.00	ug/kg wet	1	50.0	---	108	66-145%	---	---	
Oxychlordane	35.8	1.00	2.00	ug/kg wet	1	50.0	---	72	56-120%	---	---	
trans-Nonachlor	38.9	1.00	2.00	ug/kg wet	1	50.0	---	78	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 56 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*113 %*	*55-130 %*			*"*					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							C-05
QC Source Sample: Non-SDG (A0I0826-11RE1)												
Aldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Dieldrin	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	34.3	68.6	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDT	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100400-DUP1)			Prepared: 10/10/20 09:56		Analyzed: 10/17/20 23:13							**C-05**
QC Source Sample: Non-SDG (A0I0826-11RE1)												
Oxychlordane	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.14	2.29	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 44 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*95 %*		*55-130 %*				*"*			
Matrix Spike (0100400-MS1)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:06							**C-05**
QC Source Sample: T4RB-46U (A0J0312-13RE1)												
EPA 8081B												
Aldrin	52.1	9.92	19.8	ug/kg dry	5	49.6	ND	105	45-136%	---	---	
gamma-BHC (Lindane)	66.9	19.8	19.8	ug/kg dry	5	49.6	ND	135	49-135%	---	---	
cis-Chlordane	62.6	9.92	19.8	ug/kg dry	5	49.6	ND	126	54-133%	---	---	
trans-Chlordane	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-135%	---	---	
4,4'-DDD	73.3	19.8	19.8	ug/kg dry	5	49.6	ND	**148**	**56-139%**	---	---	Q-02
4,4'-DDE	74.6	9.92	19.8	ug/kg dry	5	49.6	25.8	98	56-134%	---	---	
4,4'-DDT	349	9.92	19.8	ug/kg dry	5	49.6	268	**165**	**50-141%**	---	---	Q-03
Dieldrin	52.8	9.92	19.8	ug/kg dry	5	49.6	ND	106	56-136%	---	---	
Endosulfan I	61.8	9.92	19.8	ug/kg dry	5	49.6	ND	125	53-132%	---	---	
Endosulfan II	56.4	9.92	19.8	ug/kg dry	5	49.6	ND	114	53-134%	---	---	
Endosulfan sulfate	78.8	31.7	31.7	ug/kg dry	5	49.6	ND	**159**	**55-136%**	---	---	Q-41, R-02
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*		*Limits: 42-129 %*				*Dilution: 5x*			
Decachlorobiphenyl (Surr)			*347 %*		*55-130 %*				*"*			S-04
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56		Analyzed: 10/18/20 00:23							**C-05**
QC Source Sample: T4RB-46U (A0J0312-13RE1)												
EPA 8081B												
cis-Nonachlor	66.7	19.9	19.9	ug/kg dry	5	49.7	ND	**134**	**68-121%**	---	---	Q-02
2,4'-DDD	55.1	9.94	19.9	ug/kg dry	5	49.7	ND	111	58-128%	---	---	
2,4'-DDE	54.9	9.94	19.9	ug/kg dry	5	49.7	ND	110	49-125%	---	---	
2,4'-DDT	93.0	9.94	19.9	ug/kg dry	5	49.7	43.3	100	66-145%	---	---	
Oxychlordane	56.9	9.94	19.9	ug/kg dry	5	49.7	ND	114	56-120%	---	---	
trans-Nonachlor	48.9	9.94	19.9	ug/kg dry	5	49.7	ND	98	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*		*Limits: 42-129 %*				*Dilution: 5x*			

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100400 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100400-MS2)			Prepared: 10/10/20 09:56 Analyzed: 10/18/20 00:23									**C-05**
QC Source Sample: T4RB-46U (A0J0312-13RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 340 %*	*Limits: 55-130 %*			*Dilution: 5x*					S-04

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100735 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100735-BLK1)			Prepared: 10/21/20 12:01		Analyzed: 10/23/20 13:19							**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 57 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*91 %*		*55-130 %*				*"*			
LCS (0100735-BS1)			Prepared: 10/21/20 12:01		Analyzed: 10/23/20 13:35							**C-05**
EPA 8081B												
Aldrin	30.8	1.00	2.00	ug/kg wet	1	50.0	---	62	45-136%	---	---	
gamma-BHC (Lindane)	32.7	1.00	2.00	ug/kg wet	1	50.0	---	65	49-135%	---	---	
cis-Chlordane	36.3	1.00	2.00	ug/kg wet	1	50.0	---	73	54-133%	---	---	
trans-Chlordane	36.1	1.00	2.00	ug/kg wet	1	50.0	---	72	53-135%	---	---	
4,4'-DDD	49.3	1.00	2.00	ug/kg wet	1	50.0	---	99	56-139%	---	---	
4,4'-DDE	43.4	1.00	2.00	ug/kg wet	1	50.0	---	87	56-134%	---	---	
4,4'-DDT	51.0	1.00	2.00	ug/kg wet	1	50.0	---	102	50-141%	---	---	
Dieldrin	41.1	1.00	2.00	ug/kg wet	1	50.0	---	82	56-136%	---	---	
Endosulfan I	37.3	1.00	2.00	ug/kg wet	1	50.0	---	75	53-132%	---	---	
Endosulfan II	47.7	1.00	2.00	ug/kg wet	1	50.0	---	95	53-134%	---	---	

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner
		Report ID: A0J0312 - 03 17 21 1056

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100735 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0100735-BS1)			Prepared: 10/21/20 12:01		Analyzed: 10/23/20 13:35							C-05
Endosulfan sulfate	46.4	1.00	2.00	ug/kg wet	1	50.0	---	93	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 60 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*95 %*		*55-130 %*			*"*				
LCS (0100735-BS2)			Prepared: 10/21/20 12:02		Analyzed: 10/23/20 13:52							C-05
EPA 8081B												
cis-Nonachlor	44.0	1.00	2.00	ug/kg wet	1	50.0	---	88	68-121%	---	---	
2,4'-DDD	48.4	1.00	2.00	ug/kg wet	1	50.0	---	97	58-128%	---	---	
2,4'-DDE	38.4	1.00	2.00	ug/kg wet	1	50.0	---	77	49-125%	---	---	
2,4'-DDT	51.8	1.00	2.00	ug/kg wet	1	50.0	---	104	66-145%	---	---	
Oxychlordane	32.2	1.00	2.00	ug/kg wet	1	50.0	---	64	56-120%	---	---	
trans-Nonachlor	35.3	1.00	2.00	ug/kg wet	1	50.0	---	71	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*99 %*		*55-130 %*			*"*				
Duplicate (0100735-DUP1)			Prepared: 10/21/20 12:01		Analyzed: 10/23/20 14:25							C-05
QC Source Sample: Non-SDG (A0J0154-03RE1)												
Aldrin	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	**11.7**	1.17	2.34	ug/kg dry	1	---	9.69	---	---	19	30%	
4,4'-DDT	**27.6**	1.17	2.34	ug/kg dry	1	---	19.9	---	---	**32**	**30%**	Q-17
Dieldrin	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	2.57	2.57	ug/kg dry	1	---	ND	---	---	---	30%	R-02
Chlordane (Technical)	ND	35.1	70.2	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	2.34	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDT	ND	2.57	2.57	ug/kg dry	1	---	ND	---	---	---	30%	R-02

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner

Report ID:
A0J0312 - 03 17 21 1056

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100735 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100735-DUP1)			Prepared: 10/21/20 12:01		Analyzed: 10/23/20 14:25							**C-05**
QC Source Sample: Non-SDG (A0J0154-03RE1)												
Oxychlordane	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.17	2.34	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 36 %*		*Limits: 42-129 %*		*Dilution: 1x*					S-03
Decachlorobiphenyl (Surr)			*79 %*		*55-130 %*		*"*					
Matrix Spike (0100735-MS1)			Prepared: 10/21/20 19:13		Analyzed: 10/23/20 15:18							**C-05**
QC Source Sample: T4RB-K1 (A0J0312-08RE1)												
EPA 8081B												
Aldrin	111	28.2	56.4	ug/kg dry	5	141	ND	79	45-136%	---	---	
gamma-BHC (Lindane)	112	28.2	56.4	ug/kg dry	5	141	ND	79	49-135%	---	---	
cis-Chlordane	117	28.2	56.4	ug/kg dry	5	141	ND	83	54-133%	---	---	
trans-Chlordane	121	28.2	56.4	ug/kg dry	5	141	ND	86	53-135%	---	---	
4,4'-DDD	225	28.2	56.4	ug/kg dry	5	141	75.0	106	56-139%	---	---	
4,4'-DDE	168	56.4	56.4	ug/kg dry	5	141	ND	119	56-134%	---	---	
4,4'-DDT	265	141	141	ug/kg dry	5	141	ND	**188**	**50-141%**	---	---	R-02
Dieldrin	149	56.4	56.4	ug/kg dry	5	141	ND	106	56-136%	---	---	
Endosulfan I	122	28.2	56.4	ug/kg dry	5	141	ND	86	53-132%	---	---	
Endosulfan II	128	28.2	56.4	ug/kg dry	5	141	ND	91	53-134%	---	---	
Endosulfan sulfate	137	56.4	56.4	ug/kg dry	5	141	ND	97	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 74 %*		*Limits: 42-129 %*		*Dilution: 5x*					
Decachlorobiphenyl (Surr)			*172 %*		*55-130 %*		*"*					S-04
Matrix Spike (0100735-MS2)			Prepared: 10/21/20 12:02		Analyzed: 10/23/20 15:55							**C-05**
QC Source Sample: T4RB-K1 (A0J0312-08RE1)												
EPA 8081B												
cis-Nonachlor	103	50.8	50.8	ug/kg dry	5	66.9	ND	**153**	**68-121%**	---	---	R-02
2,4'-DDD	99.0	37.5	37.5	ug/kg dry	5	66.9	ND	**148**	**58-128%**	---	---	R-02
2,4'-DDE	77.3	26.8	26.8	ug/kg dry	5	66.9	ND	116	49-125%	---	---	
2,4'-DDT	70.9	13.4	26.8	ug/kg dry	5	66.9	ND	106	66-145%	---	---	
Oxychlordane	58.2	13.4	26.8	ug/kg dry	5	66.9	ND	87	56-120%	---	---	
trans-Nonachlor	60.5	13.4	26.8	ug/kg dry	5	66.9	ND	90	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 74 %*		*Limits: 42-129 %*		*Dilution: 5x*					

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Darrell Auvil, Project Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100735 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100735-MS2)			Prepared: 10/21/20 12:02		Analyzed: 10/23/20 15:55							**C-05**
QC Source Sample: T4RB-K1 (A0J0312-08RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 190 %*		*Limits: 55-130 %*		*Dilution: 5x*					S-04

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100712 - EPA 3546							**Soil**					
Blank (0100712-BLK1)			Prepared: 10/21/20 10:52		Analyzed: 10/21/20 14:45							
EPA 8270E												
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	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 98 %*		*Limits: 37-122 %*				*Dilution: 1x*			
2-Fluorobiphenyl (Surr)			*85 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*89 %*		*33-122 %*				*"*			
p-Terphenyl-d14 (Surr)			*95 %*		*54-127 %*				*"*			
2-Fluorophenol (Surr)			*87 %*		*35-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*90 %*		*39-132 %*				*"*			
LCS (0100712-BS1)			Prepared: 10/21/20 10:52		Analyzed: 10/21/20 15:21							**Q-18**
EPA 8270E												
Acenaphthene	488	2.66	5.34	ug/kg wet	2	533	---	92	40-123%	---	---	
Acenaphthylene	518	2.66	5.34	ug/kg wet	2	533	---	97	32-132%	---	---	
Anthracene	479	2.66	5.34	ug/kg wet	2	533	---	90	47-123%	---	---	
Benz(a)anthracene	491	2.66	5.34	ug/kg wet	2	533	---	92	49-126%	---	---	
Benzo(a)pyrene	500	4.00	8.00	ug/kg wet	2	533	---	94	45-129%	---	---	

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Darrell Auvil, Project Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner
		Report ID: A0J0312 - 03 17 21 1056

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 0100712 - EPA 3546							Soil					
LCS (0100712-BS1)			Prepared: 10/21/20 10:52	Analyzed: 10/21/20 15:21								Q-18
Benzo(b)fluoranthene	498	4.00	8.00	ug/kg wet	2	533	---	93	45-132%	---	---	
Benzo(k)fluoranthene	469	4.00	8.00	ug/kg wet	2	533	---	88	47-132%	---	---	
Benzo(g,h,i)perylene	454	2.66	5.34	ug/kg wet	2	533	---	85	43-134%	---	---	
Chrysene	495	2.66	5.34	ug/kg wet	2	533	---	93	50-124%	---	---	
Dibenz(a,h)anthracene	450	2.66	5.34	ug/kg wet	2	533	---	84	45-134%	---	---	
Fluoranthene	470	2.66	5.34	ug/kg wet	2	533	---	88	50-127%	---	---	
Fluorene	465	2.66	5.34	ug/kg wet	2	533	---	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	437	2.66	5.34	ug/kg wet	2	533	---	82	45-133%	---	---	
1-Methylnaphthalene	485	5.34	10.7	ug/kg wet	2	533	---	91	40-120%	---	---	
2-Methylnaphthalene	489	5.34	10.7	ug/kg wet	2	533	---	92	38-122%	---	---	
Naphthalene	470	5.34	10.7	ug/kg wet	2	533	---	88	35-123%	---	---	
Phenanthrene	446	2.66	5.34	ug/kg wet	2	533	---	84	50-121%	---	---	
Pyrene	473	2.66	5.34	ug/kg wet	2	533	---	89	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	566	40.0	80.0	ug/kg wet	2	533	---	106	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*	*Limits: 37-122 %*			*Dilution: 2x*					
2-Fluorobiphenyl (Surr)			*90 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*96 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*98 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*93 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*100 %*	*39-132 %*			*"*					
Duplicate (0100712-DUP1)			Prepared: 10/21/20 10:52	Analyzed: 10/21/20 16:33								
QC Source Sample: T4RB-16U (A0J0312-01)												
EPA 8270E												
Acenaphthene	**156**	57.2	115	ug/kg dry	40	---	172	---	---	10	30%	
Acenaphthylene	ND	57.2	115	ug/kg dry	40	---	ND	---	---	---	30%	
Anthracene	**145**	57.2	115	ug/kg dry	40	---	156	---	---	7	30%	
Benz(a)anthracene	**1100**	57.2	115	ug/kg dry	40	---	1190	---	---	7	30%	
Benzo(a)pyrene	**1790**	86.0	172	ug/kg dry	40	---	1910	---	---	6	30%	
Benzo(b)fluoranthene	**2090**	86.0	172	ug/kg dry	40	---	2100	---	---	0.3	30%	
Benzo(k)fluoranthene	**691**	86.0	172	ug/kg dry	40	---	718	---	---	4	30%	M-05
Benzo(g,h,i)perylene	**1190**	57.2	115	ug/kg dry	40	---	1270	---	---	7	30%	
Chrysene	**1280**	57.2	115	ug/kg dry	40	---	1350	---	---	6	30%	
Dibenz(a,h)anthracene	**249**	57.2	115	ug/kg dry	40	---	264	---	---	6	30%	

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100712 - EPA 3546							**Soil**					
Duplicate (0100712-DUP1)			Prepared: 10/21/20 10:52 Analyzed: 10/21/20 16:33									
QC Source Sample: T4RB-16U (A0J0312-01)												
Fluoranthene	**1640**	57.2	115	ug/kg dry	40	---	1810	---	---	10	30%	
Fluorene	ND	57.2	115	ug/kg dry	40	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**1110**	57.2	115	ug/kg dry	40	---	1200	---	---	8	30%	
1-Methylnaphthalene	ND	115	229	ug/kg dry	40	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	115	229	ug/kg dry	40	---	ND	---	---	---	30%	
Naphthalene	ND	115	229	ug/kg dry	40	---	ND	---	---	---	30%	
Phenanthrene	**693**	57.2	115	ug/kg dry	40	---	733	---	---	5	30%	
Pyrene	**1580**	57.2	115	ug/kg dry	40	---	1710	---	---	8	30%	
Bis(2-ethylhexyl)phthalate	ND	860	1720	ug/kg dry	40	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 37-122 %*			*Dilution: 40x*					S-05
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*			*"*					S-05
Phenol-d6 (Surr)			*46 %*	*33-122 %*			*"*					S-05
p-Terphenyl-d14 (Surr)			*80 %*	*54-127 %*			*"*					S-05
2-Fluorophenol (Surr)			*47 %*	*35-120 %*			*"*					S-05
2,4,6-Tribromophenol (Surr)			*75 %*	*39-132 %*			*"*					S-05

Apex Laboratories



Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner

Report ID:
A0J0312 - 03 17 21 1056

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 1020010 - EPA 3546							Soil					
Blank (1020010-BLK2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 12:05									
EPA 8270E												
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	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 89 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*84 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*90 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*95 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*85 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*73 %*	*39-132 %*			*"*					
LCS (1020010-BS2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 12:40									
EPA 8270E												
Acenaphthene	432	2.66	5.34	ug/kg wet	2	533	---	81	40-123%	---	---	
Acenaphthylene	463	2.66	5.34	ug/kg wet	2	533	---	87	32-132%	---	---	
Anthracene	443	2.66	5.34	ug/kg wet	2	533	---	83	47-123%	---	---	
Benz(a)anthracene	445	2.66	5.34	ug/kg wet	2	533	---	84	49-126%	---	---	
Benzo(a)pyrene	463	4.00	8.00	ug/kg wet	2	533	---	87	45-129%	---	---	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 1020010 - EPA 3546							**Soil**					
LCS (1020010-BS2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 12:40									
Benzo(b)fluoranthene	458	4.00	8.00	ug/kg wet	2	533	---	86	45-132%	---	---	
Benzo(k)fluoranthene	445	4.00	8.00	ug/kg wet	2	533	---	83	47-132%	---	---	
Benzo(g,h,i)perylene	478	2.66	5.34	ug/kg wet	2	533	---	90	43-134%	---	---	
Chrysene	436	2.66	5.34	ug/kg wet	2	533	---	82	50-124%	---	---	
Dibenz(a,h)anthracene	444	2.66	5.34	ug/kg wet	2	533	---	83	45-134%	---	---	
Fluoranthene	458	2.66	5.34	ug/kg wet	2	533	---	86	50-127%	---	---	
Fluorene	439	2.66	5.34	ug/kg wet	2	533	---	82	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	428	2.66	5.34	ug/kg wet	2	533	---	80	45-133%	---	---	
1-Methylnaphthalene	421	5.34	10.7	ug/kg wet	2	533	---	79	40-120%	---	---	
2-Methylnaphthalene	435	5.34	10.7	ug/kg wet	2	533	---	82	38-122%	---	---	
Naphthalene	404	5.34	10.7	ug/kg wet	2	533	---	76	35-123%	---	---	
Phenanthrene	419	2.66	5.34	ug/kg wet	2	533	---	79	50-121%	---	---	
Pyrene	446	2.66	5.34	ug/kg wet	2	533	---	84	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	428	40.0	80.0	ug/kg wet	2	533	---	80	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 80 %*		*Limits: 37-122 %*		*Dilution: 2x*					
2-Fluorobiphenyl (Surr)			*77 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*83 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*85 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*77 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*88 %*		*39-132 %*		*"*					
Duplicate (1020010-DUP2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 14:28									
QC Source Sample: Non-SDG (A1A0282-34RE1)												
Acenaphthene	ND	97.2	195	ug/kg wet	20	---	ND	---	---	---	30%	
Acenaphthylene	ND	97.2	195	ug/kg wet	20	---	ND	---	---	---	30%	
Anthracene	ND	97.2	195	ug/kg wet	20	---	ND	---	---	---	30%	
Benz(a)anthracene	**156**	97.2	195	ug/kg wet	20	---	158	---	---	0.8	30%	Ja
Benzo(a)pyrene	**257**	146	292	ug/kg wet	20	---	252	---	---	2	30%	Ja
Benzo(b)fluoranthene	**288**	146	292	ug/kg wet	20	---	285	---	---	1	30%	Ja
Benzo(k)fluoranthene	**163**	146	292	ug/kg wet	20	---	162	---	---	0.1	30%	Ja
Benzo(g,h,i)perylene	**215**	97.2	195	ug/kg wet	20	---	207	---	---	4	30%	
Chrysene	**198**	97.2	195	ug/kg wet	20	---	186	---	---	6	30%	
Dibenz(a,h)anthracene	ND	97.2	195	ug/kg wet	20	---	ND	---	---	---	30%	
Fluoranthene	**427**	97.2	195	ug/kg wet	20	---	394	---	---	8	30%	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner

Report ID:
A0J0312 - 03 17 21 1056

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 1020010 - EPA 3546							**Soil**					
Duplicate (1020010-DUP2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 14:28									
QC Source Sample: Non-SDG (A1A0282-34RE1)												
Fluorene	ND	97.2	195	ug/kg wet	20	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**196**	97.2	195	ug/kg wet	20	---	187	---	---	5	30%	
1-Methylnaphthalene	ND	195	390	ug/kg wet	20	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	195	390	ug/kg wet	20	---	ND	---	---	---	30%	
Naphthalene	ND	195	390	ug/kg wet	20	---	ND	---	---	---	30%	
Phenanthrene	**284**	97.2	195	ug/kg wet	20	---	260	---	---	9	30%	
Pyrene	**539**	97.2	195	ug/kg wet	20	---	503	---	---	7	30%	
Bis(2-ethylhexyl)phthalate	ND	1460	2920	ug/kg wet	20	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 44 %*	*Limits: 37-122 %*			*Dilution: 20x*					
2-Fluorobiphenyl (Surr)			*54 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*31 %*	*33-122 %*			*"*					S-06
p-Terphenyl-d14 (Surr)			*56 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*39 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*80 %*	*39-132 %*			*"*					
Matrix Spike (1020010-MS2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 15:03									
QC Source Sample: Non-SDG (A1A0282-34RE1)												
EPA 8270E												
Acenaphthene	633	96.9	195	ug/kg wet	20	777	ND	81	40-123%	---	---	
Acenaphthylene	639	96.9	195	ug/kg wet	20	777	ND	82	32-132%	---	---	
Anthracene	613	96.9	195	ug/kg wet	20	777	ND	79	47-123%	---	---	
Benz(a)anthracene	787	96.9	195	ug/kg wet	20	777	158	81	49-126%	---	---	
Benzo(a)pyrene	815	146	292	ug/kg wet	20	777	252	72	45-129%	---	---	
Benzo(b)fluoranthene	984	146	292	ug/kg wet	20	777	285	90	45-132%	---	---	
Benzo(k)fluoranthene	728	146	292	ug/kg wet	20	777	162	73	47-132%	---	---	
Benzo(g,h,i)perylene	943	96.9	195	ug/kg wet	20	777	207	95	43-134%	---	---	
Chrysene	897	96.9	195	ug/kg wet	20	777	186	91	50-124%	---	---	
Dibenz(a,h)anthracene	591	96.9	195	ug/kg wet	20	777	ND	76	45-134%	---	---	
Fluoranthene	1240	96.9	195	ug/kg wet	20	777	394	109	50-127%	---	---	
Fluorene	640	96.9	195	ug/kg wet	20	777	ND	82	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	867	96.9	195	ug/kg wet	20	777	187	88	45-133%	---	---	
1-Methylnaphthalene	602	195	388	ug/kg wet	20	777	ND	77	40-120%	---	---	
2-Methylnaphthalene	620	195	388	ug/kg wet	20	777	ND	80	38-122%	---	---	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 1020010 - EPA 3546							**Soil**					
Matrix Spike (1020010-MS2)			Prepared: 02/01/21 09:27 Analyzed: 02/02/21 15:03									
QC Source Sample: Non-SDG (A1A0282-34RE1)												
Naphthalene	622	195	388	ug/kg wet	20	777	ND	80	35-123%	---	---	
Phenanthrene	1050	96.9	195	ug/kg wet	20	777	260	101	50-121%	---	---	
Pyrene	1380	96.9	195	ug/kg wet	20	777	503	113	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	ND	1460	2920	ug/kg wet	20	777	ND		**51-133%**	---	---	Q-11
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 65 %*	*Limits: 37-122 %*			*Dilution: 20x*					
2-Fluorobiphenyl (Surr)			*78 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*55 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*73 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*21 %*	*35-120 %*			*"*					S-06
2,4,6-Tribromophenol (Surr)			*114 %*	*39-132 %*			*"*					

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Darrell Auvil, Project Manager

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503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: POP --- T4 Riverbank	
3015 SW First Avenue	Project Number: 2372-08 Task 3	Report ID:
Portland, OR 97201	Project Manager: Steve Misner	A0J0312 - 03 17 21 1056

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100628 - EPA 3051A							**Soil**					
Blank (0100628-BLK1)			Prepared: 10/19/20 13:02		Analyzed: 10/20/20 16:32							
EPA 6020A												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	
Blank (0100628-BLK3)			Prepared: 10/19/20 13:02		Analyzed: 10/22/20 11:16							
EPA 6020A												
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	Q-16
LCS (0100628-BS1)			Prepared: 10/19/20 13:02		Analyzed: 10/20/20 16:42							
EPA 6020A												
Arsenic	51.0	0.500	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Cadmium	51.1	0.100	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Copper	54.1	1.00	2.00	mg/kg wet	10	50.0	---	108	80-120%	---	---	
Lead	50.0	0.500	1.00	mg/kg wet	10	50.0	---	100	80-120%	---	---	
Mercury	1.08	0.0800	0.160	mg/kg wet	10	1.00	---	108	80-120%	---	---	
Zinc	51.9	2.00	4.00	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Duplicate (0100628-DUP1)			Prepared: 10/19/20 13:02		Analyzed: 10/20/20 17:07							
QC Source Sample: Non-SDG (A0J0271-01)												
Arsenic	**3.48**	0.542	1.08	mg/kg dry	10	---	3.42	---	---	2	20%	
Cadmium	**0.317**	0.108	0.217	mg/kg dry	10	---	0.313	---	---	1	20%	
Copper	**24.7**	1.08	2.17	mg/kg dry	10	---	25.0	---	---	1	20%	
Lead	**30.8**	0.542	1.08	mg/kg dry	10	---	14.8	---	---	**70**	**20%**	Q-04
Mercury	ND	0.0867	0.173	mg/kg dry	10	---	ND	---	---	---	20%	
Zinc	**65.7**	2.17	4.34	mg/kg dry	10	---	67.1	---	---	2	20%	
Matrix Spike (0100628-MS1)			Prepared: 10/19/20 13:02		Analyzed: 10/20/20 17:11							
QC Source Sample: Non-SDG (A0J0271-01)												
EPA 6020A												
Arsenic	61.7	0.570	1.14	mg/kg dry	10	57.0	3.42	102	75-125%	---	---	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100628 - EPA 3051A							**Soil**					
Matrix Spike (0100628-MS1)			Prepared: 10/19/20 13:02		Analyzed: 10/20/20 17:11							
QC Source Sample: Non-SDG (A0J0271-01)												
Cadmium	58.1	0.114	0.228	mg/kg dry	10	57.0	0.313	101	75-125%	---	---	
Copper	87.1	1.14	2.28	mg/kg dry	10	57.0	25.0	109	75-125%	---	---	
Lead	73.0	0.570	1.14	mg/kg dry	10	57.0	14.8	102	75-125%	---	---	
Mercury	1.13	0.0912	0.182	mg/kg dry	10	1.14	ND	99	75-125%	---	---	
Zinc	123	2.28	4.56	mg/kg dry	10	57.0	67.1	98	75-125%	---	---	

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALITY CONTROL (QC) SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 1013217 - Total Solids (SM2540G/PSEP)							**Soil**					
Duplicate (1013217-DUP1)			Prepared: 01/22/21 14:29		Analyzed: 01/25/21 13:47							
QC Source Sample: T4RB-17L (A0J0312-05)												
SM 2540 G												
Total Solids	**66.4**	1.00	1.00	%	1	---	68.3	---	---	3	10%	

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100366 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100366-DUP1)			Prepared: 10/12/20 08:48		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0066-01)												
% Solids	**82.3**	1.00	1.00	%	1	---	80.2	---	---	3	10%	
Duplicate (0100366-DUP2)			Prepared: 10/12/20 08:48		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0212-04)												
% Solids	**96.4**	1.00	1.00	%	1	---	96.4	---	---	0.03	10%	
Duplicate (0100366-DUP3)			Prepared: 10/12/20 08:48		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0290-04)												
% Solids	**65.1**	1.00	1.00	%	1	---	65.1	---	---	0.04	10%	
Duplicate (0100366-DUP4)			Prepared: 10/12/20 08:48		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0310-10)												
% Solids	**83.4**	1.00	1.00	%	1	---	83.4	---	---	0.03	10%	
Duplicate (0100366-DUP5)			Prepared: 10/12/20 19:15		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0314-02)												
% Solids	**97.0**	1.00	1.00	%	1	---	97.0	---	---	0.02	10%	
Duplicate (0100366-DUP6)			Prepared: 10/12/20 19:15		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0391-02)												
% Solids	**77.1**	1.00	1.00	%	1	---	77.0	---	---	0.09	10%	
Duplicate (0100366-DUP7)			Prepared: 10/12/20 19:27		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0400-01)												
% Solids	**81.3**	1.00	1.00	%	1	---	82.6	---	---	2	10%	
Duplicate (0100366-DUP8)			Prepared: 10/12/20 19:47		Analyzed: 10/13/20 09:05							
QC Source Sample: Non-SDG (A0J0403-04)												
% Solids	**79.9**	1.00	1.00	%	1	---	79.3	---	---	0.8	10%	

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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

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

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100410 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100410-DUP1)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0310-12)												
% Solids	**86.0**	1.00	1.00	%	1	---	86.4	---	---	0.4	10%	
Duplicate (0100410-DUP2)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0310-28)												
% Solids	**84.1**	1.00	1.00	%	1	---	83.2	---	---	1	10%	
Duplicate (0100410-DUP3)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0310-40)												
% Solids	**85.4**	1.00	1.00	%	1	---	86.0	---	---	0.7	10%	
Duplicate (0100410-DUP4)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: T4RB-16U (A0J0312-01)												
EPA 8000D												
% Solids	**92.0**	1.00	1.00	%	1	---	91.7	---	---	0.3	10%	
Duplicate (0100410-DUP5)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0314-01)												
% Solids	**90.1**	1.00	1.00	%	1	---	88.8	---	---	2	10%	
Duplicate (0100410-DUP6)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0336-05)												
% Solids	**91.1**	1.00	1.00	%	1	---	91.3	---	---	0.2	10%	
Duplicate (0100410-DUP7)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0361-01)												
% Solids	**92.2**	1.00	1.00	%	1	---	92.5	---	---	0.3	10%	
Duplicate (0100410-DUP8)			Prepared: 10/13/20 09:08		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0404-02)												
% Solids	**87.4**	1.00	1.00	%	1	---	87.4	---	---	0.06	10%	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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 0100410 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100410-DUP9)			Prepared: 10/13/20 19:02		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0448-01)												
% Solids	**87.1**	1.00	1.00	%	1	---	87.0	---	---	0.2	10%	
Duplicate (0100410-DUPA)			Prepared: 10/13/20 19:02		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0454-01)												
% Solids	**78.3**	1.00	1.00	%	1	---	78.8	---	---	0.7	10%	
Duplicate (0100410-DUPB)			Prepared: 10/13/20 19:37		Analyzed: 10/14/20 09:55							
QC Source Sample: Non-SDG (A0J0457-02)												
% Solids	**80.8**	1.00	1.00	%	1	---	81.2	---	---	0.5	10%	

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

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project:	POP --- T4 Riverbank
3015 SW First Avenue	Project Number:	2372-08 Task 3
Portland, OR 97201	Project Manager:	Steve Misner

Report ID:
A0J0312 - 03 17 21 1056

Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0485 - EPA 3546 (Microwave)							**Solid**					
Blank (BIJ0485-BLK1)			Prepared: 10/15/20 12:25 Analyzed: 10/23/20 11:00									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.450	3.86	ug/kg wet	1	---	---	---	---	---	---	U
Surr: Tripentyltin		*Recovery:*	*98.0 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*81.3 %*		*30-160 %*			*"*				
LCS (BIJ0485-BS1)			Prepared: 10/15/20 12:25 Analyzed: 10/23/20 11:17									
EPA 8270E-SIM												
Tributyltin Ion	36.1	0.450	3.86	ug/kg wet	1	44.554	---	81.1	30-160%	---	---	
Surr: Tripentyltin		*Recovery:*	*94.0 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*73.9 %*		*30-160 %*			*"*				
LCS Dup (BIJ0485-BSD1)			Prepared: 10/15/20 12:25 Analyzed: 10/23/20 11:33									
EPA 8270E-SIM												
Tributyltin Ion	41.1	0.450	3.86	ug/kg wet	1	44.554	---	92.3	30-160%	12.9	30%	
Surr: Tripentyltin		*Recovery:*	*95.2 %*	*Limits:*	*30-160 %*		*Dilution:*	*1x*				
Tripropyltin			*80.4 %*		*30-160 %*			*"*				

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ANALYTICAL REPORT

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100476							
A0J0312-01	Soil	NWTPH-Dx	10/07/20 10:10	10/14/20 13:05	10.55g/5mL	10g/5mL	0.95
A0J0312-03	Soil	NWTPH-Dx	10/07/20 13:05	10/14/20 13:05	10.13g/5mL	10g/5mL	0.99
A0J0312-04	Soil	NWTPH-Dx	10/07/20 13:35	10/14/20 13:05	10.42g/5mL	10g/5mL	0.96
A0J0312-06RE1	Soil	NWTPH-Dx	10/08/20 11:15	10/14/20 13:05	10.07g/5mL	10g/5mL	0.99
A0J0312-07	Soil	NWTPH-Dx	10/08/20 11:50	10/14/20 13:05	10.07g/5mL	10g/5mL	0.99
A0J0312-08	Soil	NWTPH-Dx	10/08/20 13:35	10/14/20 13:05	10.16g/5mL	10g/5mL	0.98
A0J0312-09	Soil	NWTPH-Dx	10/08/20 14:10	10/14/20 13:05	10.15g/5mL	10g/5mL	0.99
A0J0312-10	Soil	NWTPH-Dx	10/08/20 14:50	10/14/20 13:05	10.22g/5mL	10g/5mL	0.98
Batch: 0100515							
A0J0312-11RE1	Soil	NWTPH-Dx	10/09/20 10:15	10/15/20 12:53	10.43g/5mL	10g/5mL	0.96
A0J0312-12	Soil	NWTPH-Dx	10/09/20 10:55	10/15/20 12:53	10.85g/5mL	10g/5mL	0.92
A0J0312-13RE1	Soil	NWTPH-Dx	10/09/20 11:30	10/15/20 12:53	10.42g/5mL	10g/5mL	0.96

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100450							
A0J0312-03	Soil	5035A/8260D	10/07/20 13:05	10/07/20 13:05	5.99g/5mL	5g/5mL	0.84
A0J0312-07	Soil	5035A/8260D	10/08/20 11:50	10/08/20 11:50	4.28g/5mL	5g/5mL	1.17
A0J0312-13	Soil	5035A/8260D	10/09/20 11:30	10/09/20 11:30	4.55g/5mL	5g/5mL	1.10
Batch: 0100496							
A0J0312-08RE1	Soil	5035A/8260D	10/08/20 13:35	10/08/20 13:35	5.26g/5mL	5g/5mL	0.95

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100700							
A0J0312-01	Soil	EPA 8082A	10/07/20 10:10	10/21/20 10:03	10.22g/2mL	10g/2mL	0.98
A0J0312-03	Soil	EPA 8082A	10/07/20 13:05	10/21/20 10:03	10.04g/2mL	10g/2mL	1.00
A0J0312-04	Soil	EPA 8082A	10/07/20 13:35	10/21/20 10:03	10.42g/2mL	10g/2mL	0.96
A0J0312-06	Soil	EPA 8082A	10/08/20 11:15	10/21/20 10:03	5.15g/2mL	10g/2mL	1.94
A0J0312-07	Soil	EPA 8082A	10/08/20 11:50	10/21/20 10:03	10.31g/2mL	10g/2mL	0.97
A0J0312-08RE1	Soil	EPA 8082A	10/08/20 13:35	10/21/20 10:03	10.22g/2mL	10g/2mL	0.98

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0J0312-09	Soil	EPA 8082A	10/08/20 14:10	10/21/20 10:03	10.04g/2mL	10g/2mL	1.00
A0J0312-10	Soil	EPA 8082A	10/08/20 14:50	10/21/20 10:03	10.22g/2mL	10g/2mL	0.98
A0J0312-11RE1	Soil	EPA 8082A	10/09/20 10:15	10/21/20 10:03	10.04g/2mL	10g/2mL	1.00
A0J0312-13	Soil	EPA 8082A	10/09/20 11:30	10/21/20 10:03	10.49g/2mL	10g/2mL	0.95

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100400							
A0J0312-13RE1	Soil	EPA 8081B	10/09/20 11:30	10/10/20 09:56	10.86g/20mL	10g/5mL	3.68
Batch: 0100735							
A0J0312-03RE1	Soil	EPA 8081B	10/07/20 13:05	10/19/20 12:01	10.47g/10mL	10g/5mL	1.91
A0J0312-07RE1	Soil	EPA 8081B	10/08/20 11:50	10/19/20 12:01	10.03g/20mL	10g/5mL	3.99
A0J0312-08RE1	Soil	EPA 8081B	10/08/20 13:35	10/19/20 12:01	10.75g/20mL	10g/5mL	3.72

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100712							
A0J0312-01	Soil	EPA 8270E	10/07/20 10:10	10/21/20 10:52	15.25g/2mL	15g/2mL	0.98
A0J0312-03	Soil	EPA 8270E	10/07/20 13:05	10/21/20 10:52	15.06g/2mL	15g/2mL	1.00
A0J0312-04RE1	Soil	EPA 8270E	10/07/20 13:35	10/21/20 10:52	15.31g/2mL	15g/2mL	0.98
A0J0312-06	Soil	EPA 8270E	10/08/20 11:15	10/21/20 10:52	15.14g/5mL	15g/2mL	2.48
A0J0312-07	Soil	EPA 8270E	10/08/20 11:50	10/21/20 10:52	15.12g/5mL	15g/2mL	2.48
A0J0312-08	Soil	EPA 8270E	10/08/20 13:35	10/21/20 10:52	15.23g/5mL	15g/2mL	2.46
A0J0312-09	Soil	EPA 8270E	10/08/20 14:10	10/21/20 10:52	15.21g/5mL	15g/2mL	2.47
A0J0312-10	Soil	EPA 8270E	10/08/20 14:50	10/21/20 10:52	15.12g/5mL	15g/2mL	2.48
A0J0312-11	Soil	EPA 8270E	10/09/20 10:15	10/21/20 10:52	15.33g/5mL	15g/2mL	2.45
A0J0312-12RE1	Soil	EPA 8270E	10/09/20 10:55	10/21/20 10:52	15.01g/2mL	15g/2mL	1.00
A0J0312-13RE1	Soil	EPA 8270E	10/09/20 11:30	10/21/20 10:52	15.01g/2mL	15g/2mL	1.00
Batch: 1020010							
A0J0312-05	Soil	EPA 8270E	10/08/20 10:25	02/01/21 11:08	15.01g/2mL	15g/2mL	1.00

Total Metals by EPA 6020A (ICPMS)

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100628							
A0J0312-03	Soil	EPA 6020A	10/07/20 13:05	10/19/20 13:02	0.513g/50mL	0.5g/50mL	0.98
A0J0312-07	Soil	EPA 6020A	10/08/20 11:50	10/19/20 13:02	0.472g/50mL	0.5g/50mL	1.06
A0J0312-08	Soil	EPA 6020A	10/08/20 13:35	10/19/20 13:02	0.47g/50mL	0.5g/50mL	1.06
A0J0312-08RE1	Soil	EPA 6020A	10/08/20 13:35	10/19/20 13:02	0.47g/50mL	0.5g/50mL	1.06
A0J0312-12	Soil	EPA 6020A	10/09/20 10:55	10/19/20 13:02	0.464g/50mL	0.5g/50mL	1.08
A0J0312-12RE1	Soil	EPA 6020A	10/09/20 10:55	10/19/20 13:02	0.464g/50mL	0.5g/50mL	1.08
A0J0312-13	Soil	EPA 6020A	10/09/20 11:30	10/19/20 13:02	0.475g/50mL	0.5g/50mL	1.05
A0J0312-13RE1	Soil	EPA 6020A	10/09/20 11:30	10/19/20 13:02	0.475g/50mL	0.5g/50mL	1.05

Solid and Moisture Determinations

Prep: Total Solids (SM2540G/PSEP)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 1013217							
A0J0312-05	Soil	SM 2540 G	10/08/20 10:25	01/22/21 14:29			NA

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100366							
A0J0312-13	Soil	EPA 8000D	10/09/20 11:30	10/12/20 19:44			NA
Batch: 0100410							
A0J0312-01	Soil	EPA 8000D	10/07/20 10:10	10/13/20 09:08			NA
A0J0312-03	Soil	EPA 8000D	10/07/20 13:05	10/13/20 09:08			NA
A0J0312-04	Soil	EPA 8000D	10/07/20 13:35	10/13/20 09:08			NA
A0J0312-06	Soil	EPA 8000D	10/08/20 11:15	10/13/20 09:08			NA
A0J0312-07	Soil	EPA 8000D	10/08/20 11:50	10/13/20 09:08			NA
A0J0312-08	Soil	EPA 8000D	10/08/20 13:35	10/13/20 09:08			NA
A0J0312-09	Soil	EPA 8000D	10/08/20 14:10	10/13/20 09:08			NA
A0J0312-10	Soil	EPA 8000D	10/08/20 14:50	10/13/20 09:08			NA
A0J0312-11	Soil	EPA 8000D	10/09/20 10:15	10/13/20 09:08			NA
A0J0312-12	Soil	EPA 8000D	10/09/20 10:55	10/13/20 09:08			NA

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Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Butyl Tins

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0485							
A0J0312-03	Soil	EPA 8270E-SIM	10/07/20 13:05	10/15/20 12:25	6.67g/0.5mL	5g/0.5mL	0.75
A0J0312-07	Soil	EPA 8270E-SIM	10/08/20 11:50	10/15/20 12:25	7.65g/0.5mL	5g/0.5mL	0.65
A0J0312-08	Soil	EPA 8270E-SIM	10/08/20 13:35	10/15/20 12:25	7.69g/0.5mL	5g/0.5mL	0.65
A0J0312-13	Soil	EPA 8270E-SIM	10/09/20 11:30	10/15/20 12:25	5.41g/0.5mL	5g/0.5mL	0.92

Apex Laboratories



Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

QUALIFIER DEFINITIONS

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

Apex Laboratories

B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
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-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
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-15	Results for diesel are estimated due to overlap from the reported oil result.
F-16	Results for oil are estimated due to overlap from the reported diesel result.
F-17	No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
H-08	Sample hold time extended by freezing at -18 degrees C. Total time at 4 degrees C was less than the standard hold time.
Ja	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-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
P-12	Result estimated due to the presence of multiple PCB Aroclors and/or PCB congeners not defined as Aroclors.
Q-02	Spike recovery is outside of established control limits due to matrix interference.
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-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-43	Matrix Spike recovery is not applicable due to interfering Aroclor(s) in source sample.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-03	Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.
S-04	Surrogate recovery is outside of established control limits due to a 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.
X	See Case Narrative.

Analytical Resources, Inc.

J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

Apex Laboratories



Darrell Auvil, Project Manager

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ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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



Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

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.

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



Darrell Auvil, Project Manager

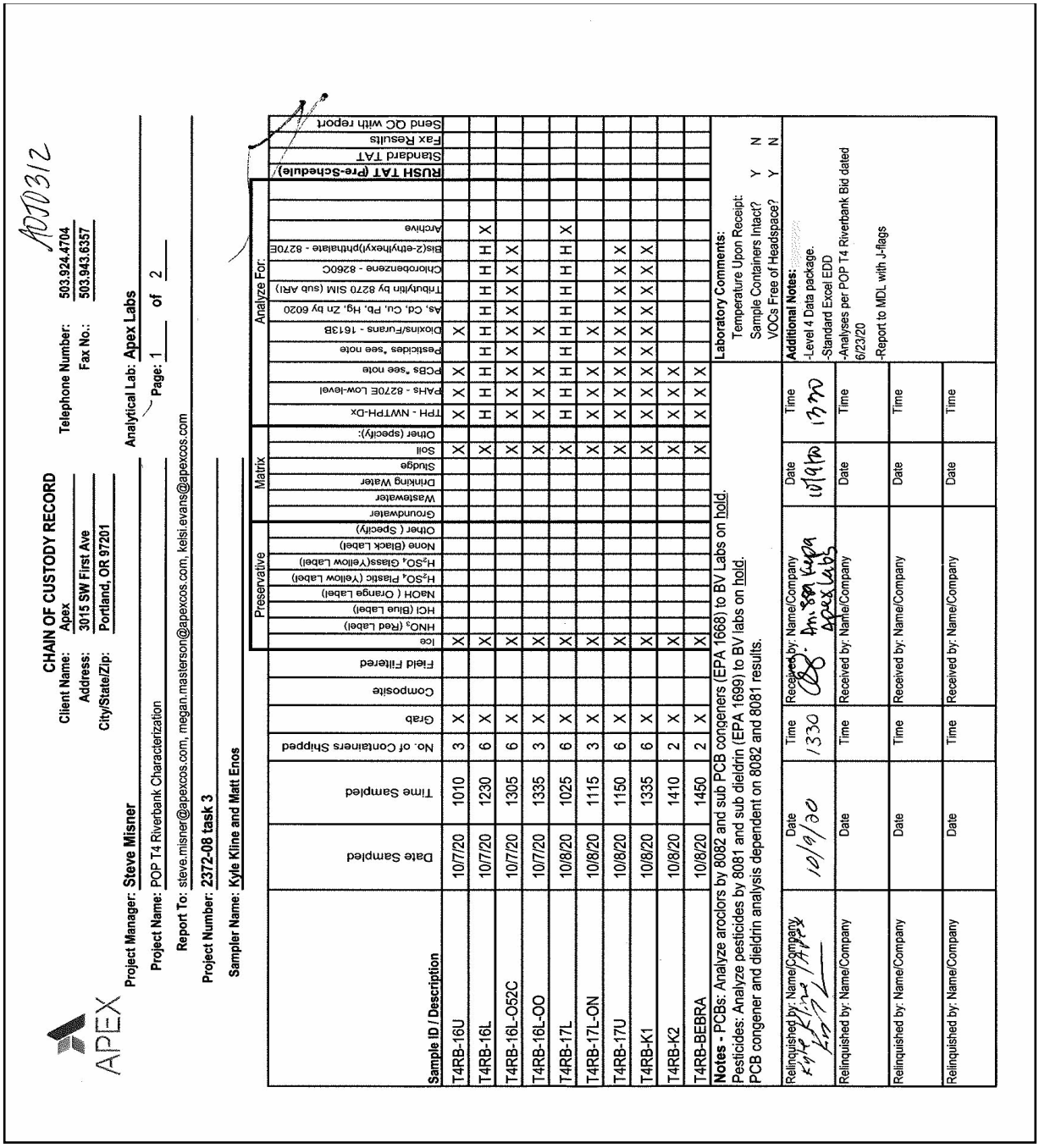
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ANALYTICAL REPORT

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**



CHAIN OF CUSTODY RECORD

A0J0312

Client Name: Apex — Telephone Number: 503.924.4704
Address: 3015 SW First Ave — Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201
Analytical Lab: Apex Labs
Project Manager: Steve Misner — Page: 1 of 2
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs "see note	Pesticides "see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributylin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-16U	10/7/20	1010	3	X			X												X		X	X	X		X								
T4RB-16L	10/7/20	1230	6	X			X												X		H	H	H		H	H	H	H	X				
T4RB-16L-052C	10/7/20	1305	6	X			X												X		X	X	X		X	X	X	X					
T4RB-16L-OO	10/7/20	1335	3	X			X												X		X	X	X		X								
T4RB-17L	10/8/20	1025	6	X			X												X		H	H	H		H	H	H	H	X				
T4RB-17L-ON	10/8/20	1115	3	X			X												X		X	X			X								
T4RB-17U	10/8/20	1150	6	X			X												X		X	X	X		X	X	X	X					
T4RB-K1	10/8/20	1335	6	X			X												X		X	X	X		X	X	X	X					
T4RB-K2	10/8/20	1410	2	X			X												X		X	X	X										
T4RB-BEBRA	10/8/20	1450	2	X			X												X		X	X	X										

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Relinquished by: Name/Company — Date 10/9/20 — Time 1330 — Received by: Name/Company — Date 10/9/20 — Time 1330

Relinquished by: Name/Company — Date — Time — Received by: Name/Company — Date — Time

Relinquished by: Name/Company — Date — Time — Received by: Name/Company — Date — Time

Relinquished by: Name/Company — Date — Time — Received by: Name/Company — Date — Time

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Apex Laboratories

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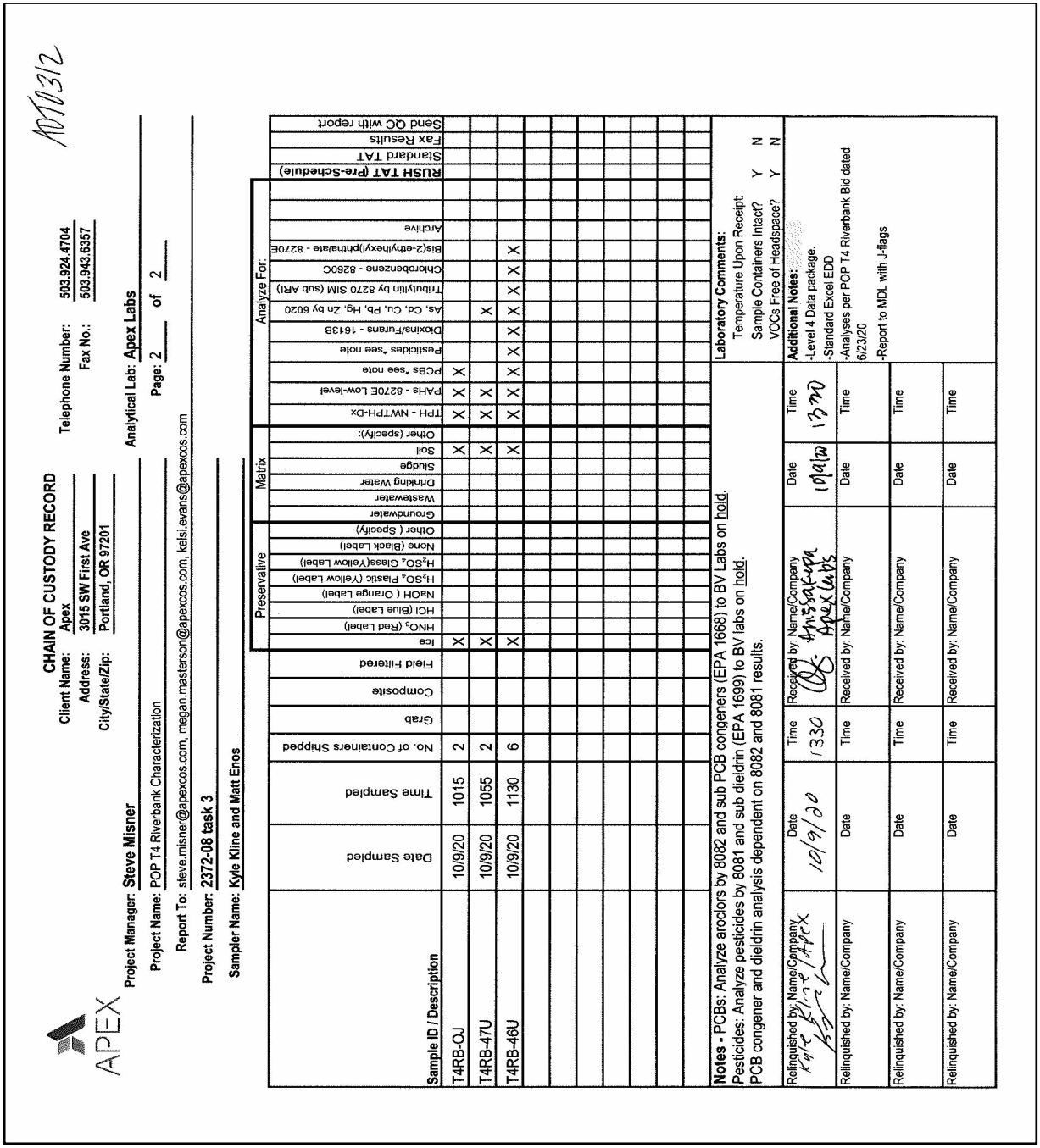
Darrell Auvil, Project Manager

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

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**



A0J0312

CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 | Analytical Lab: Apex Labs
Project Manager: Steve Misner | Page: 2 of 2
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-OJ	10/9/20	1015	2				X												X		X	X	X											
T4RB-47U	10/9/20	1055	2				X												X		X	X	X			X								
T4RB-46U	10/9/20	1130	6				X												X		X	X	X			X		X	X					

Notes - PCBs: Analyze arcolors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
[illegible] / Apex	10/9/20	1330	Apex Labs	10/9/20	1330
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

ANALYTICAL REPORT

AMENDED REPORT

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0312 - 03 17 21 1056**

APEX LABS COOLER RECEIPT FORM

Client: APEX Element WO#: A0 J0312

Project/Project #: POP T4 Riverbank Characterization #2372-08 Task 3

Delivery Info:

Date/time received: 10/9/20 @ 1330 By: AKC

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift___Senvoy ___SDS___Other_____

Cooler Inspection Date/time inspected: 10/9/20 @ 1330 By: AKC

Chain of Custody included? Yes X No ___ Custody seals? Yes_____ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.7						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	Good						

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

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

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

Samples Inspection: Date/time inspected: 10/9/20 @ 15:00 By: KS

All samples intact? Yes X No ___ Comments:_____

Bottle labels/COCs agree? Yes X No ___ Comments: _____

COC/container discrepancies form initiated? Yes ___ No X

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

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

Comments_____

Water samples: pH checked: Yes___No___NA X pH appropriate? Yes___No___NA X

Comments: _____

Additional information: _____

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

Apex Laboratories

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Darrell Auvil, Project Manager

Analytical Resources, Incorporated
Analytical Chemists and Consultants

27 October 2020

Darrell Auvil
Apex Laboratories LLC
12232 SW Garden Place
Tigard, OR 97223

RE: A0J0312

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20J0194	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006

PJLA Testing
Accreditation # 66169

SUBCONTRACT ORDER

Apex Laboratories

A0J0312

ARI Job #: 20J0194 CB 10/19/20

TAT

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

Sample Name: A0J0312-03 **Soil** **Sampled: 10/07/20 13:05** (T4RB-16L-O52C)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	CB 10/19/20 ~~10/22/20 17~~:00 10/27/20	10/21/20 13:05	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0312-07 **Soil** **Sampled: 10/08/20 11:50** (T4RB-17U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	CB 10/19/20 ~~10/22/20 17~~:00 10/27/20	10/22/20 11:50	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0312-08 **Soil** **Sampled: 10/08/20 13:35** (T4RB-K1)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	CB 10/19/20 ~~10/22/20 17~~:00 10/27/20	10/22/20 13:35	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0312-13 **Soil** **Sampled: 10/09/20 11:30** (T4RB-46U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	CB 10/19/20 ~~10/22/20 17~~:00 10/27/20	10/23/20 11:30	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Standard TAT

Released By	Date	Received By	Date
	10/12/20	UPS (Shipper)	
UPS (Shipper)		Jacob Haltey	10/13/2020 1042
Released By	Date	Received By	Date

Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A0J0312-03	20J0194-01	Solid	07-Oct-2020 13:05	13-Oct-2020 10:42
A0J0312-07	20J0194-02	Solid	08-Oct-2020 11:50	13-Oct-2020 10:42
A0J0312-08	20J0194-03	Solid	08-Oct-2020 13:35	13-Oct-2020 10:42
A0J0312-13	20J0194-04	Solid	09-Oct-2020 11:30	13-Oct-2020 10:42

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.

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received 13-Oct-2020 10:42 under ARI work order 20J0194. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The samples were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The blank spike/blank spike duplicate (BS/LCS/BSD/LCSD) percent recoveries and RPD were within control limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex Labs Project Name: AOJ0312

COC No(s): _____ (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20J0194 Tracking No: 1ZX47A0R0196203396 (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1042 0.9

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: D00 5206

Cooler Accepted by: JJ Date: 10/13/2020 Time: 1042

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used?	Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Trash bag		
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: SL Date: 10/14/2020 Time: 0952 Labels checked by: SL

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

A0J0312-03

20J0194-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/07/2020 13:05

Instrument: NT8 Analyst: JZ — Analyzed: 10/23/2020 15:42

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0194-01 A 01
	Preparation Batch: BIJ0485	Sample Size: 6.67 g (wet)	Dry Weight:5.04 g
	Prepared: 10/15/2020	Final Volume: 0.5 mL	% Solids: 75.51
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0194-01 A 01
	Cleanup Batch: CIJ0229	Initial Volume: 0.5 mL	
	Cleaned: 22-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.447	3.83	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*63.4*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*52.2*	*%*	

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

A0J0312-07

20J0194-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/08/2020 11:50
Instrument: NT8 Analyst: JZ — Analyzed: 10/23/2020 15:59

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0194-02 A 01
	Preparation Batch: BIJ0485	Sample Size: 7.65 g (wet)	Dry Weight:5.03 g
	Prepared: 10/15/2020	Final Volume: 0.5 mL	% Solids: 65.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0194-02 A 01
	Cleanup Batch: CIJ0229	Initial Volume: 0.5 mL	
	Cleaned: 22-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.447	3.83	2.65	ug/kg	J
Surrogate: Tripentyltin				*30-160 %*	*61.6*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*55.5*	*%*	

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

A0J0312-08

20J0194-03 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/08/2020 13:35
Instrument: NT8 Analyst: JZ — Analyzed: 10/23/2020 16:15

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0194-03 A 01
	Preparation Batch: BIJ0485	Sample Size: 7.69 g (wet)	Dry Weight:5.01 g
	Prepared: 10/15/2020	Final Volume: 0.5 mL	% Solids: 65.17
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0194-03 A 01
	Cleanup Batch: CIJ0229	Initial Volume: 0.5 mL	
	Cleaned: 22-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.449	3.85	0.688	ug/kg	J
Surrogate: Tripentyltin				*30-160 %*	*67.5*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*53.2*	*%*	

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

A0J0312-13

20J0194-04 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/09/2020 11:30
Instrument: NT8 Analyst: JZ — Analyzed: 10/23/2020 16:32

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0194-04 A 01
	Preparation Batch: BIJ0485	Sample Size: 5.41 g (wet)	Dry Weight:5.05 g
	Prepared: 10/15/2020	Final Volume: 0.5 mL	% Solids: 93.34
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0194-04 A 01
	Cleanup Batch: CIJ0229	Initial Volume: 0.5 mL	
	Cleaned: 22-Oct-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.446	3.82	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*77.6*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*67.4*	*%*	

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

Butyl Tins - Quality Control

Batch BIJ0485 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0485-BLK1)				Prepared: 15-Oct-2020 Analyzed: 23-Oct-2020 11:00							
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Surrogate: Tripentyltin	44.3			ug/kg	*45.2*		*98.0*	*30-160*			
Surrogate: Tripropyltin	35.6			ug/kg	*43.7*		*81.3*	*30-160*			
LCS (BIJ0485-BS1)				Prepared: 15-Oct-2020 Analyzed: 23-Oct-2020 11:17							
Tributyltin Ion	36.1	0.450	3.86	ug/kg	44.6		81.1	30-160			
Surrogate: Tripentyltin	42.5			ug/kg	*45.2*		*94.0*	*30-160*			
Surrogate: Tripropyltin	32.3			ug/kg	*43.7*		*73.9*	*30-160*			
LCS Dup (BIJ0485-BSD1)				Prepared: 15-Oct-2020 Analyzed: 23-Oct-2020 11:33							
Tributyltin Ion	41.1	0.450	3.86	ug/kg	44.6		92.3	30-160	12.90	30	
Surrogate: Tripentyltin	43.0			ug/kg	*45.2*		*95.2*	*30-160*			
Surrogate: Tripropyltin	35.2			ug/kg	*43.7*		*80.4*	*30-160*			

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Butyltin Ion	WADOE
Butyltin Ion	
Butyltin Ion	WADOE
Butyltin Ion	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Apex Laboratories LLC	Project: A0J0312	
12232 SW Garden Place	Project Number: A0J0312	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	27-Oct-2020 15:02

Notes and Definitions

*	Flagged value is not within established control limits.
J	Estimated concentration value detected below the reporting limit.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Your Project #: A0J0312
Your C.O.C. #: na

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2020/11/10
Report #: R6405943
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0Q7716
Received: 2020/10/13, 13:29

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	1	2020/10/16	2020/10/29	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	1	2020/10/16	2020/11/05	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	3	2020/10/17	2020/10/29	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	1	2020/10/17	2020/10/30	BRL SOP-00410	EPA 1613B m
Dioxins/Furans in Soil (1613B) (1)	1	2020/10/17	2020/10/31	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	1	2020/10/16	2020/10/27	BRL SOP-00406	EPA M8290A / M1613
2378TCDF Confirmation (M8290A/M1613)	1	2020/10/16	2020/11/04	BRL SOP-00406	EPA M8290A / M1613
2378TCDF Confirmation (M8290A/M1613)	2	2020/10/17	2020/11/04	BRL SOP-00406	EPA M8290A / M1613
Moisture	7	N/A	2020/10/15	CAM SOP-00445	Carter 2nd ed 51.2 m

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bvlabs.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BV Labs Job #: C0Q7716
Report Date: 2020/11/10

Apex Laboratories
Client Project #: A0J0312

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NWI350	NWI351	NWI352	NWI353	NWI354	NWI355			
Sampling Date		2020/10/07 10:10	2020/10/07 13:05	2020/10/07 13:35	2020/10/08 11:15	2020/10/08 11:50	2020/10/08 13:35			
COC Number		na	na	na	na	na	na			
	UNITS	T4RB-16U	T4RB-16L-O52C	T4RB-16L-OO	T4RB-17L-ON	T4RB-17U	T4RB-K1	RDL	MDL	QC Batch
Moisture	%	7.9	26	23	49	30	30	1.0	0.50	7002150

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

BV Labs ID		NWI356			
Sampling Date		2020/10/09 11:30			
COC Number		na			
	UNITS	T4RB-46U	RDL	MDL	QC Batch
Moisture	%	6.1	1.0	0.50	7002150

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI350							
Sampling Date		2020/10/07 10:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-16U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.148 U	0.148	0.999	0.0399	1.00	0.148	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	0.661 J	0.141	4.99	0.0399	1.00	0.661	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	0.934 J	0.143	4.99	0.0399	0.100	0.0934	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	3.49 J	0.143	4.99	0.0399	0.100	0.349	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	1.83 J	0.149	4.99	0.0399	0.100	0.183	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	129	0.144	4.99	0.0399	0.0100	1.29	N/A	7015723
Octa CDD *	pg/g	1210	0.150	9.99	0.0799	0.000300	0.363	N/A	7015723
Total Tetra CDD *	pg/g	0.776 J	0.148	0.999	0.0399	N/A	N/A	3	7015723
Total Penta CDD *	pg/g	2.19 J	0.141	4.99	0.0399	N/A	N/A	5	7015723
Total Hexa CDD *	pg/g	25.2	0.144	4.99	0.0399	N/A	N/A	8	7015723
Total Hepta CDD *	pg/g	293	0.144	4.99	0.0399	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	0.745 J	0.144	0.999	0.0399	0.100	0.0745	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	0.480 J	0.147	4.99	0.0399	0.0300	0.0144	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	0.919 J	0.137	4.99	0.0399	0.300	0.276	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	5.39	0.144	4.99	0.0399	0.100	0.539	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	1.10 J	0.148	4.99	0.0399	0.100	0.110	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	0.707 U (1)	0.707	4.99	0.0399	0.100	0.0707	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	0.150 U	0.150	4.99	0.0399	0.100	0.0150	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	25.2	0.144	4.99	0.0399	0.0100	0.252	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	3.11 J	0.144	4.99	0.0399	0.0100	0.0311	N/A	7015723
Octa CDF **	pg/g	101	0.125	9.99	0.0799	0.000300	0.0303	N/A	7015723
Total Tetra CDF **	pg/g	4.32	0.144	0.999	0.0399	N/A	N/A	9	7015723
Total Penta CDF **	pg/g	16.3	0.142	4.99	0.0399	N/A	N/A	9	7015723
Total Hexa CDF **	pg/g	42.0	0.147	4.99	0.0399	N/A	N/A	8	7015723
Total Hepta CDF **	pg/g	108	0.144	4.99	0.0399	N/A	N/A	3	7015723
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	4.50	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI350							
Sampling Date		2020/10/07 10:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-16U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI351							
Sampling Date		2020/10/07 13:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-16L-O52C	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.144 U	0.144	0.999	0.0400	1.00	0.144	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	0.515 J	0.143	5.00	0.0400	1.00	0.515	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	1.02 J	0.141	5.00	0.0400	0.100	0.102	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	7.59	0.141	5.00	0.0400	0.100	0.759	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	2.76 J (1)	0.147	5.00	0.0400	0.100	0.276	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	347	0.142	5.00	0.0400	0.0100	3.47	N/A	7015723
Octa CDD *	pg/g	3870	0.143	9.99	0.0799	0.000300	1.16	N/A	7015723
Total Tetra CDD *	pg/g	0.383 J	0.144	0.999	0.0400	N/A	N/A	2	7015723
Total Penta CDD *	pg/g	1.87 J	0.143	5.00	0.0400	N/A	N/A	6	7015723
Total Hexa CDD *	pg/g	43.6	0.142	5.00	0.0400	N/A	N/A	6	7015723
Total Hepta CDD *	pg/g	801	0.142	5.00	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	0.421 J	0.148	0.999	0.0400	0.100	0.0421	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	0.416 J	0.146	5.00	0.0400	0.0300	0.0125	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	0.725 J	0.136	5.00	0.0400	0.300	0.218	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	4.58 J	0.142	5.00	0.0400	0.100	0.458	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	1.04 J	0.146	5.00	0.0400	0.100	0.104	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	0.715 J	0.142	5.00	0.0400	0.100	0.0715	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	0.148 U	0.148	5.00	0.0400	0.100	0.0148	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	73.0	0.153	5.00	0.0400	0.0100	0.730	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	4.75 J	0.153	5.00	0.0400	0.0100	0.0475	N/A	7015723
Octa CDF **	pg/g	433	0.120	9.99	0.0799	0.000300	0.130	N/A	7015723
Total Tetra CDF **	pg/g	2.49	0.148	0.999	0.0400	N/A	N/A	6	7015723
Total Penta CDF **	pg/g	15.3	0.141	5.00	0.0400	N/A	N/A	8	7015723
Total Hexa CDF **	pg/g	75.6	0.144	5.00	0.0400	N/A	N/A	9	7015723
Total Hepta CDF **	pg/g	384	0.153	5.00	0.0400	N/A	N/A	4	7015723
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	8.25	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
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(1) EMPC / Merged Peak

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI351							
Sampling Date		2020/10/07 13:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-16L-O52C	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI352							
Sampling Date		2020/10/07 13:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-16L-OO	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.137 U	0.137	0.999	0.0400	1.00	0.137	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	0.142 U	0.142	4.99	0.0400	1.00	0.142	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	0.197 J	0.144	4.99	0.0400	0.100	0.0197	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	0.786 J	0.143	4.99	0.0400	0.100	0.0786	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	0.418 J (1)	0.150	4.99	0.0400	0.100	0.0418	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	26.4	0.143	4.99	0.0400	0.0100	0.264	N/A	7015723
Octa CDD *	pg/g	261	0.147	9.99	0.0799	0.000300	0.0783	N/A	7015723
Total Tetra CDD *	pg/g	0.137 U	0.137	0.999	0.0400	N/A	N/A	0	7015723
Total Penta CDD *	pg/g	0.142 U	0.142	4.99	0.0400	N/A	N/A	0	7015723
Total Hexa CDD *	pg/g	4.68 J	0.145	4.99	0.0400	N/A	N/A	5	7015723
Total Hepta CDD *	pg/g	59.1	0.143	4.99	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	0.148 U	0.148	0.999	0.0400	0.100	0.0148	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	0.149 U	0.149	4.99	0.0400	0.0300	0.00447	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	0.189 J	0.139	4.99	0.0400	0.300	0.0567	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	1.08 J	0.142	4.99	0.0400	0.100	0.108	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	0.349 J	0.145	4.99	0.0400	0.100	0.0349	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	0.169 J	0.141	4.99	0.0400	0.100	0.0169	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	0.147 U	0.147	4.99	0.0400	0.100	0.0147	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	7.11	0.143	4.99	0.0400	0.0100	0.0711	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.798 J	0.142	4.99	0.0400	0.0100	0.00798	N/A	7015723
Octa CDF **	pg/g	34.8	0.159	9.99	0.0799	0.000300	0.0104	N/A	7015723
Total Tetra CDF **	pg/g	0.148 U	0.148	0.999	0.0400	N/A	N/A	0	7015723
Total Penta CDF **	pg/g	2.83 J	0.144	4.99	0.0400	N/A	N/A	4	7015723
Total Hexa CDF **	pg/g	9.22	0.144	4.99	0.0400	N/A	N/A	7	7015723
Total Hepta CDF **	pg/g	31.5	0.143	4.99	0.0400	N/A	N/A	4	7015723
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.10	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7015723

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
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(1) EMPC / Merged Peak

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI352							
Sampling Date		2020/10/07 13:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-16L-OO	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7015723

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RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI353							
Sampling Date		2020/10/08 11:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L-ON	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	1.97 J	1.72	20.0	0.0400	1.00	1.97	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	8.05 J	1.92	100	0.0400	1.00	8.05	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	5.43 J	2.34	100	0.0400	0.100	0.543	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	42.8 J	2.33	100	0.0400	0.100	4.28	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	16.0 J	2.43	100	0.0400	0.100	1.60	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1490	2.47	100	0.0400	0.0100	14.9	N/A	7015723
Octa CDD *	pg/g	11400	2.17	200	0.0800	0.000300	3.42	N/A	7015723
Total Tetra CDD *	pg/g	7.45 J	1.72	20.0	0.0400	N/A	N/A	3	7015723
Total Penta CDD *	pg/g	26.2 J	1.92	100	0.0400	N/A	N/A	5	7015723
Total Hexa CDD *	pg/g	198	2.36	100	0.0400	N/A	N/A	8	7015723
Total Hepta CDD *	pg/g	3010	2.47	100	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	5.83 J	2.06	20.0	0.0400	0.100	0.583	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	3.70 J	2.20	100	0.0400	0.0300	0.111	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	6.33 J	2.05	100	0.0400	0.300	1.90	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	43.2 J	2.10	100	0.0400	0.100	4.32	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	13.4 J	2.16	100	0.0400	0.100	1.34	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	8.41 J	2.09	100	0.0400	0.100	0.841	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	2.19 U	2.19	100	0.0400	0.100	0.219	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	319	1.76	100	0.0400	0.0100	3.19	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	19.2 J	1.75	100	0.0400	0.0100	0.192	N/A	7015723
Octa CDF **	pg/g	1080	1.87	200	0.0800	0.000300	0.324	N/A	7015723
Total Tetra CDF **	pg/g	40.7	2.06	20.0	0.0400	N/A	N/A	8	7015723
Total Penta CDF **	pg/g	192	2.12	100	0.0400	N/A	N/A	7	7015723
Total Hexa CDF **	pg/g	459	2.14	100	0.0400	N/A	N/A	8	7015723
Total Hepta CDF **	pg/g	1280	1.75	100	0.0400	N/A	N/A	4	7015723
Confirmation 2,3,7,8-Tetra CDF **	pg/g	4.18	0.13	1.0	0.18	0.100	0.418	N/A	7041349
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	47.6	N/A	N/A

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI353							
Sampling Date		2020/10/08 11:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L-ON	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	126	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	211 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	148	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7015723
Confirmation C13-2378 TetraCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7041349

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) internal is high due to matrix interferences

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI353							
Sampling Date		2020/10/08 11:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L-ON Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	2.71 J	1.85	20.0	0.0400	1.00	2.71	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	8.79 J	2.11	99.9	0.0400	1.00	8.79	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	15.6 J	1.74	99.9	0.0400	0.100	1.56	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	45.7 J	1.74	99.9	0.0400	0.100	4.57	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	30.9 J	1.82	99.9	0.0400	0.100	3.09	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1640	1.64	99.9	0.0400	0.0100	16.4	N/A	7015723
Octa CDD *	pg/g	12700	2.85	200	0.0799	0.000300	3.81	N/A	7015723
Total Tetra CDD *	pg/g	4.82 J	1.85	20.0	0.0400	N/A	N/A	2	7015723
Total Penta CDD *	pg/g	25.8 J	2.11	99.9	0.0400	N/A	N/A	4	7015723
Total Hexa CDD *	pg/g	334	1.76	99.9	0.0400	N/A	N/A	8	7015723
Total Hepta CDD *	pg/g	3270	1.64	99.9	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	6.05 J	1.99	20.0	0.0400	0.100	0.605	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	3.64 J	1.97	99.9	0.0400	0.0300	0.109	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	7.98 J	1.83	99.9	0.0400	0.300	2.39	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	42.0 J	1.94	99.9	0.0400	0.100	4.20	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	13.5 J	1.99	99.9	0.0400	0.100	1.35	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	10.6 J	1.93	99.9	0.0400	0.100	1.06	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	2.02 U	2.02	99.9	0.0400	0.100	0.202	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	401	1.89	99.9	0.0400	0.0100	4.01	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	28.0 J	1.88	99.9	0.0400	0.0100	0.280	N/A	7015723
Octa CDF **	pg/g	1350	2.02	200	0.0799	0.000300	0.405	N/A	7015723
Total Tetra CDF **	pg/g	39.8	1.99	20.0	0.0400	N/A	N/A	7	7015723
Total Penta CDF **	pg/g	201	1.90	99.9	0.0400	N/A	N/A	7	7015723
Total Hexa CDF **	pg/g	578	1.97	99.9	0.0400	N/A	N/A	9	7015723
Total Hepta CDF **	pg/g	1530	1.89	99.9	0.0400	N/A	N/A	4	7015723
Confirmation 2,3,7,8-Tetra CDF **	pg/g	4.08	0.12	1.0	0.18	0.100	0.408	N/A	7041349
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	55.3	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI353							
Sampling Date		2020/10/08 11:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L-ON Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	129	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	135	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7015723
Confirmation C13-2378 TetraCDF **	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7041349

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI354							
Sampling Date		2020/10/08 11:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	3.73 J	2.11	20.0	0.0400	1.00	3.73	N/A	7015723
1,2,3,7,8-Penta CDD *	pg/g	33.5 J	1.94	100	0.0400	1.00	33.5	N/A	7015723
1,2,3,4,7,8-Hexa CDD *	pg/g	60.6 J	1.59	100	0.0400	0.100	6.06	N/A	7015723
1,2,3,6,7,8-Hexa CDD *	pg/g	264	1.59	100	0.0400	0.100	26.4	N/A	7015723
1,2,3,7,8,9-Hexa CDD *	pg/g	178	1.66	100	0.0400	0.100	17.8	N/A	7015723
1,2,3,4,6,7,8-Hepta CDD *	pg/g	10800	2.40	100	0.0400	0.0100	108	N/A	7015723
Octa CDD *	pg/g	92600 (1)	1.84	200	0.0800	0.000300	27.8	N/A	7015723
Total Tetra CDD *	pg/g	10.8 J	2.11	20.0	0.0400	N/A	N/A	3	7015723
Total Penta CDD *	pg/g	96.9 J	1.94	100	0.0400	N/A	N/A	8	7015723
Total Hexa CDD *	pg/g	1330	1.60	100	0.0400	N/A	N/A	8	7015723
Total Hepta CDD *	pg/g	18500	2.40	100	0.0400	N/A	N/A	2	7015723
2,3,7,8-Tetra CDF **	pg/g	9.77 J	2.14	20.0	0.0400	0.100	0.977	N/A	7015723
1,2,3,7,8-Penta CDF **	pg/g	15.9 J	2.22	100	0.0400	0.0300	0.477	N/A	7015723
2,3,4,7,8-Penta CDF **	pg/g	22.2 J	2.07	100	0.0400	0.300	6.66	N/A	7015723
1,2,3,4,7,8-Hexa CDF **	pg/g	273 U (2)	273	100	0.0400	0.100	27.3	N/A	7015723
1,2,3,6,7,8-Hexa CDF **	pg/g	49.9 J	2.25	100	0.0400	0.100	4.99	N/A	7015723
2,3,4,6,7,8-Hexa CDF **	pg/g	20.8 J	2.19	100	0.0400	0.100	2.08	N/A	7015723
1,2,3,7,8,9-Hexa CDF **	pg/g	2.28 U	2.28	100	0.0400	0.100	0.228	N/A	7015723
1,2,3,4,6,7,8-Hepta CDF **	pg/g	2920	2.28	100	0.0400	0.0100	29.2	N/A	7015723
1,2,3,4,7,8,9-Hepta CDF **	pg/g	391	2.27	100	0.0400	0.0100	3.91	N/A	7015723
Octa CDF **	pg/g	12100	1.64	200	0.0800	0.000300	3.63	N/A	7015723
Total Tetra CDF **	pg/g	48.8	2.14	20.0	0.0400	N/A	N/A	9	7015723
Total Penta CDF **	pg/g	405	2.15	100	0.0400	N/A	N/A	9	7015723
Total Hexa CDF **	pg/g	3880	2.23	100	0.0400	N/A	N/A	8	7015723
Total Hepta CDF **	pg/g	3310	2.27	100	0.0400	N/A	N/A	2	7015723
Confirmation 2,3,7,8-Tetra CDF **	pg/g	7.93	0.12	1.0	0.18	0.100	0.793	N/A	7041349

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

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QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMCL - PCDD/DF analysis - Exceeds Maximum Calibration Limit

(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI354							
Sampling Date		2020/10/08 11:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	303	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234678 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123478 HexaCDF **	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-1234789 HeptaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123678 HexaCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-12378 PentaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-123789 HexaCDF **	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-234678 HexaCDF **	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-23478 PentaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-2378 TetraCDF **	%	137	N/A	N/A	N/A	N/A	N/A	N/A	7015723
C13-OCDD *	%	147	N/A	N/A	N/A	N/A	N/A	N/A	7015723
Confirmation C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7041349

EDL = Estimated Detection Limit

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI355							
Sampling Date		2020/10/08 13:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-K1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	3.50 J	2.07	20.0	0.0400	1.00	3.50	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	6.47 J	2.21	99.9	0.0400	1.00	6.47	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	6.68 J	2.12	99.9	0.0400	0.100	0.668	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	27.2 J	2.11	99.9	0.0400	0.100	2.72	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	23.4 J	2.21	99.9	0.0400	0.100	2.34	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	838	2.30	99.9	0.0400	0.0100	8.38	N/A	7016913
Octa CDD *	pg/g	8180	2.04	200	0.0799	0.000300	2.45	N/A	7016913
Total Tetra CDD *	pg/g	19.0 J	2.07	20.0	0.0400	N/A	N/A	5	7016913
Total Penta CDD *	pg/g	18.5 J	2.21	99.9	0.0400	N/A	N/A	4	7016913
Total Hexa CDD *	pg/g	225	2.14	99.9	0.0400	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	2140	2.30	99.9	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	49.5	2.06	20.0	0.0400	0.100	4.95	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	166	2.27	99.9	0.0400	0.0300	4.98	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	50.0 J	2.12	99.9	0.0400	0.300	15.0	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	138	2.16	99.9	0.0400	0.100	13.8	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	37.2 J	2.22	99.9	0.0400	0.100	3.72	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	12.8 J	2.15	99.9	0.0400	0.100	1.28	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	2.24 U	2.24	99.9	0.0400	0.100	0.224	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	196	2.49	99.9	0.0400	0.0100	1.96	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	19.7 J	2.48	99.9	0.0400	0.0100	0.197	N/A	7016913
Octa CDF **	pg/g	374	1.88	200	0.0799	0.000300	0.112	N/A	7016913
Total Tetra CDF **	pg/g	171	2.06	20.0	0.0400	N/A	N/A	10	7016913
Total Penta CDF **	pg/g	544	2.19	99.9	0.0400	N/A	N/A	7	7016913
Total Hexa CDF **	pg/g	494	2.19	99.9	0.0400	N/A	N/A	9	7016913
Total Hepta CDF **	pg/g	605	2.48	99.9	0.0400	N/A	N/A	4	7016913
Confirmation 2,3,7,8-Tetra CDF **	pg/g	46.9 (1)	1.8	20	0.18	0.100	4.69	N/A	7041349
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	72.5	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Results obtained from 20x dilution and RDL is raised accordingly

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI355							
Sampling Date		2020/10/08 13:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-K1	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	59	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	63	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7016913
Confirmation C13-2378 TetraCDF **	%	128	N/A	N/A	N/A	N/A	N/A	N/A	7041349

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI356							
Sampling Date		2020/10/09 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-46U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	6.53	0.110	1.00	0.0400	1.00	6.53	N/A	7016913
1,2,3,7,8-Penta CDD *	pg/g	60.0	0.0858	5.00	0.0400	1.00	60.0	N/A	7016913
1,2,3,4,7,8-Hexa CDD *	pg/g	74.8	0.100	5.00	0.0400	0.100	7.48	N/A	7016913
1,2,3,6,7,8-Hexa CDD *	pg/g	610	0.0997	5.00	0.0400	0.100	61.0	N/A	7016913
1,2,3,7,8,9-Hexa CDD *	pg/g	163	0.104	5.00	0.0400	0.100	16.3	N/A	7016913
1,2,3,4,6,7,8-Hepta CDD *	pg/g	14500 (1)	1.19	100	0.0400	0.0100	145	N/A	7016913
Octa CDD *	pg/g	72000 (1)	0.664	200	0.0800	0.000300	21.6	N/A	7016913
Total Tetra CDD *	pg/g	29.0	0.110	1.00	0.0400	N/A	N/A	10	7016913
Total Penta CDD *	pg/g	203	0.0858	5.00	0.0400	N/A	N/A	11	7016913
Total Hexa CDD *	pg/g	2150	0.101	5.00	0.0400	N/A	N/A	7	7016913
Total Hepta CDD *	pg/g	26000 (1)	1.19	100	0.0400	N/A	N/A	2	7016913
2,3,7,8-Tetra CDF **	pg/g	8.49	0.148	1.00	0.0400	0.100	0.849	N/A	7016913
1,2,3,7,8-Penta CDF **	pg/g	24.0	0.164	5.00	0.0400	0.0300	0.720	N/A	7016913
2,3,4,7,8-Penta CDF **	pg/g	35.5	0.153	5.00	0.0400	0.300	10.7	N/A	7016913
1,2,3,4,7,8-Hexa CDF **	pg/g	112 U (2)	112	5.00	0.0400	0.100	11.2	N/A	7016913
1,2,3,6,7,8-Hexa CDF **	pg/g	34.9	0.111	5.00	0.0400	0.100	3.49	N/A	7016913
2,3,4,6,7,8-Hexa CDF **	pg/g	78.5	0.108	5.00	0.0400	0.100	7.85	N/A	7016913
1,2,3,7,8,9-Hexa CDF **	pg/g	1.55 J	0.112	5.00	0.0400	0.100	0.155	N/A	7016913
1,2,3,4,6,7,8-Hepta CDF **	pg/g	763	0.176	5.00	0.0400	0.0100	7.63	N/A	7016913
1,2,3,4,7,8,9-Hepta CDF **	pg/g	36.9	0.176	5.00	0.0400	0.0100	0.369	N/A	7016913
Octa CDF **	pg/g	680	0.253	10.0	0.0800	0.000300	0.204	N/A	7016913
Total Tetra CDF **	pg/g	30.2	0.148	1.00	0.0400	N/A	N/A	12	7016913
Total Penta CDF **	pg/g	537	0.158	5.00	0.0400	N/A	N/A	11	7016913
Total Hexa CDF **	pg/g	1540	0.110	5.00	0.0400	N/A	N/A	10	7016913
Total Hepta CDF **	pg/g	810	0.176	5.00	0.0400	N/A	N/A	3	7016913
Confirmation 2,3,7,8-Tetra CDF **	pg/g	7.61	0.12	1.0	0.18	0.100	0.761	N/A	7022840

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) ** From 20X Dilution **

(2) EMPC / DPE - Diphenylether interference present caused dibenzofuran detected to become a "non-detect" with an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NWI356							
Sampling Date		2020/10/09 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-46U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	361	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDD *	%	118 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234678 HeptaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123478 HexaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-1234789 HeptaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123678 HexaCDF **	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDD *	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-12378 PentaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-123789 HexaCDF **	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-234678 HexaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-23478 PentaCDF **	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-2378 TetraCDF **	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7016913
C13-OCDD *	%	141 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7016913
Confirmation C13-2378 TetraCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7022840

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable
* CDD = Chloro Dibenzo-p-Dioxin
** CDF = Chloro Dibenzo-p-Furan
(1) ** From 20X Dilution **

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NWI350
Sample ID: T4RB-16U
Matrix: Soil

Collected: 2020/10/07
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/29	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NWI351
Sample ID: T4RB-16L-O52C
Matrix: Soil

Collected: 2020/10/07
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/29	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NWI352
Sample ID: T4RB-16L-OO
Matrix: Soil

Collected: 2020/10/07
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/29	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NWI353
Sample ID: T4RB-17L-ON
Matrix: Soil

Collected: 2020/10/08
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/30	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7041349	2020/10/17	2020/11/04	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NWI353 Dup
Sample ID: T4RB-17L-ON
Matrix: Soil

Collected: 2020/10/08
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/31	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7041349	2020/10/17	2020/11/04	Angel Guerrero

BV Labs ID: NWI354
Sample ID: T4RB-17U
Matrix: Soil

Collected: 2020/10/08
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7015723	2020/10/17	2020/10/31	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7041349	2020/10/17	2020/11/04	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NWI355
Sample ID: T4RB-K1
Matrix: Soil

Collected: 2020/10/08
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/11/05	Owen Cosby
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7041349	2020/10/16	2020/11/04	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

BV Labs ID: NWI356
Sample ID: T4RB-46U
Matrix: Soil

Collected: 2020/10/09
Shipped:
Received: 2020/10/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7016913	2020/10/16	2020/10/29	Owen Cosby
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7022840	2020/10/16	2020/10/27	Angel Guerrero
Moisture	BAL	7002150	N/A	2020/10/15	Prgya Panchal

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Sample NWI353 [T4RB-17L-ON] : DF analysis: Sample NWI353, NWI353:D1 and NWI354: Results obtained from 20x dilution due to high matrix interferences in sample. RDL is raised accordingly

Sample NWI354 [T4RB-17U] : DF analysis: Sample NWI353, NWI353:D1 and NWI354: Results obtained from 20x dilution due to high matrix interferences in sample. RDL is raised accordingly

Sample NWI355 [T4RB-K1] : DF analysis: Due to high matrix interferences, sample is diluted to 20x and RDL is raised accordingly

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7002150	MYG	RPD - Sample/Sample Dup	Moisture	2020/10/15	4.0		%	20
7015723	AGU	Matrix Spike(NWI352)	37CL4 2378 Tetra CDD	2020/10/28		107	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/28		92	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/28		86	%	28 - 143
			C13-123478 HexaCDD	2020/10/28		91	%	32 - 141
			C13-123478 HexaCDF	2020/10/28		87	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/28		100	%	26 - 138
			C13-123678 HexaCDD	2020/10/28		110	%	28 - 130
			C13-123678 HexaCDF	2020/10/28		83	%	26 - 123
			C13-12378 PentaCDD	2020/10/28		100	%	25 - 181
			C13-12378 PentaCDF	2020/10/28		87	%	24 - 185
			C13-123789 HexaCDF	2020/10/28		113	%	29 - 147
			C13-234678 HexaCDF	2020/10/28		88	%	28 - 136
			C13-23478 PentaCDF	2020/10/28		102	%	21 - 178
			C13-2378 TetraCDD	2020/10/28		97	%	25 - 164
			C13-2378 TetraCDF	2020/10/28		96	%	24 - 169
			C13-OCDD	2020/10/28		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/28		105	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/28		104	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/28		103	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/28		101	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/28		103	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/28		107	%	70 - 140
			Octa CDD	2020/10/28		135	%	78 - 144
			Total Tetra CDD	2020/10/28		21	%	N/A
			Total Penta CDD	2020/10/28		104	%	N/A
			Total Hexa CDD	2020/10/28		308	%	N/A
			Total Hepta CDD	2020/10/28		133	%	N/A
			2,3,7,8-Tetra CDF	2020/10/28		105	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/28		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/28		98	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/28		103	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/28		112	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/28		105	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/28		104	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/28		97	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/28		109	%	78 - 138
			Octa CDF	2020/10/28		97	%	63 - 170
			Total Tetra CDF	2020/10/28		21	%	N/A
			Total Penta CDF	2020/10/28		206	%	N/A
			Total Hexa CDF	2020/10/28		426	%	N/A
			Total Hepta CDF	2020/10/28		214	%	N/A
7015723	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/10/28		93	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/28		94	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/28		84	%	28 - 143
			C13-123478 HexaCDD	2020/10/28		89	%	32 - 141
			C13-123478 HexaCDF	2020/10/28		86	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/28		95	%	26 - 138
			C13-123678 HexaCDD	2020/10/28		102	%	28 - 130
			C13-123678 HexaCDF	2020/10/28		93	%	26 - 123
			C13-12378 PentaCDD	2020/10/28		95	%	25 - 181
			C13-12378 PentaCDF	2020/10/28		85	%	24 - 185
			C13-123789 HexaCDF	2020/10/28		110	%	29 - 147

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-234678 HexaCDF	2020/10/28		86	%	28 - 136
			C13-23478 PentaCDF	2020/10/28		98	%	21 - 178
			C13-2378 TetraCDD	2020/10/28		90	%	25 - 164
			C13-2378 TetraCDF	2020/10/28		95	%	24 - 169
			C13-OCDD	2020/10/28		109	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/28		104	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/28		104	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/28		105	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/28		100	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/28		105	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/28		97	%	70 - 140
			Octa CDD	2020/10/28		97	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/28		100	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/28		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/28		104	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/28		99	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/28		92	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/28		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/28		93	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/28		100	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/28		110	%	78 - 138
			Octa CDF	2020/10/28		97	%	63 - 170
7015723	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/10/29		101	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/29		91	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/29		86	%	28 - 143
			C13-123478 HexaCDD	2020/10/29		94	%	32 - 141
			C13-123478 HexaCDF	2020/10/29		88	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/29		93	%	26 - 138
			C13-123678 HexaCDD	2020/10/29		106	%	28 - 130
			C13-123678 HexaCDF	2020/10/29		86	%	26 - 123
			C13-12378 PentaCDD	2020/10/29		98	%	25 - 181
			C13-12378 PentaCDF	2020/10/29		86	%	24 - 185
			C13-123789 HexaCDF	2020/10/29		114	%	29 - 147
			C13-234678 HexaCDF	2020/10/29		89	%	28 - 136
			C13-23478 PentaCDF	2020/10/29		100	%	21 - 178
			C13-2378 TetraCDD	2020/10/29		99	%	25 - 164
			C13-2378 TetraCDF	2020/10/29		100	%	24 - 169
			C13-OCDD	2020/10/29		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/29	0.147 U, EDL=0.147		pg/g	
			1,2,3,7,8-Penta CDD	2020/10/29	0.146 U, EDL=0.146		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/10/29	0.177 U, EDL=0.177		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/10/29	0.176 U, EDL=0.176		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/10/29	0.184 U, EDL=0.184		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/10/29	0.143 U, EDL=0.143		pg/g	
			Octa CDD	2020/10/29	0.791 J, EDL=0.147		pg/g	
			Total Tetra CDD	2020/10/29	0.147 U, EDL=0.147		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Penta CDD	2020/10/29	0.146 U, EDL=0.146		pg/g	
			Total Hexa CDD	2020/10/29	0.178 U, EDL=0.178		pg/g	
			Total Hepta CDD	2020/10/29	0.143 U, EDL=0.143		pg/g	
			2,3,7,8-Tetra CDF	2020/10/29	0.116 U, EDL=0.116		pg/g	
			1,2,3,7,8-Penta CDF	2020/10/29	0.147 U, EDL=0.147		pg/g	
			2,3,4,7,8-Penta CDF	2020/10/29	0.137 U, EDL=0.137		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/10/29	0.102 U, EDL=0.102		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/10/29	0.105 U, EDL=0.105		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/10/29	0.102 U, EDL=0.102		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/10/29	0.106 U, EDL=0.106		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/10/29	0.116 U, EDL=0.116		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/10/29	0.115 U, EDL=0.115		pg/g	
			Octa CDF	2020/10/29	0.142 U, EDL=0.142		pg/g	
			Total Tetra CDF	2020/10/29	0.116 U, EDL=0.116		pg/g	
			Total Penta CDF	2020/10/29	0.141 U, EDL=0.141		pg/g	
			Total Hexa CDF	2020/10/29	0.104 U, EDL=0.104		pg/g	
			Total Hepta CDF	2020/10/29	0.115 U, EDL=0.115		pg/g	
7015723	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/10/31	NC		%	25
			1,2,3,7,8-Penta CDD	2020/10/31	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/10/31	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/10/31	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/10/31	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/10/31	9.1		%	25
			Octa CDD	2020/10/31	11		%	25
			Total Tetra CDD	2020/10/31	NC		%	25
			Total Penta CDD	2020/10/31	NC		%	25
			Total Hexa CDD	2020/10/31	NC		%	25
			Total Hepta CDD	2020/10/31	8.2		%	25
			2,3,7,8-Tetra CDF	2020/10/31	NC		%	25
			1,2,3,7,8-Penta CDF	2020/10/31	NC		%	25
			2,3,4,7,8-Penta CDF	2020/10/31	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/10/31	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/10/31	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/10/31	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/10/31	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/10/31	23		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/10/31	NC		%	25

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Octa CDF	2020/10/31	23		%	25
			Total Tetra CDF	2020/10/31	2.4		%	25
			Total Penta CDF	2020/10/31	4.6		%	25
			Total Hexa CDF	2020/10/31	23		%	25
			Total Hepta CDF	2020/10/31	17		%	25
7016913	OBC	Matrix Spike	37CL4 2378 Tetra CDD	2020/10/25		80	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/25		92	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/25		85	%	28 - 143
			C13-123478 HexaCDD	2020/10/25		73	%	32 - 141
			C13-123478 HexaCDF	2020/10/25		74	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/25		104	%	26 - 138
			C13-123678 HexaCDD	2020/10/25		88	%	28 - 130
			C13-123678 HexaCDF	2020/10/25		71	%	26 - 123
			C13-12378 PentaCDD	2020/10/25		87	%	25 - 181
			C13-12378 PentaCDF	2020/10/25		84	%	24 - 185
			C13-123789 HexaCDF	2020/10/25		108	%	29 - 147
			C13-234678 HexaCDF	2020/10/25		76	%	28 - 136
			C13-23478 PentaCDF	2020/10/25		98	%	21 - 178
			C13-2378 TetraCDD	2020/10/25		85	%	25 - 164
			C13-2378 TetraCDF	2020/10/25		90	%	24 - 169
			C13-OCDD	2020/10/25		114	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/25		101	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/25		108	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/25		113	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/25		103	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/25		124	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/25		110	%	70 - 140
			Octa CDD	2020/10/25		109	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/25		109	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/25		109	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/25		98	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/25		107	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/25		113	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/25		106	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/25		99	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/25		101	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/25		107	%	78 - 138
			Octa CDF	2020/10/25		106	%	63 - 170
7016913	OBC	Spiked Blank	37CL4 2378 Tetra CDD	2020/10/25		67	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/25		91	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/25		85	%	28 - 143
			C13-123478 HexaCDD	2020/10/25		73	%	32 - 141
			C13-123478 HexaCDF	2020/10/25		72	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/25		101	%	26 - 138
			C13-123678 HexaCDD	2020/10/25		85	%	28 - 130
			C13-123678 HexaCDF	2020/10/25		70	%	26 - 123
			C13-12378 PentaCDD	2020/10/25		86	%	25 - 181
			C13-12378 PentaCDF	2020/10/25		83	%	24 - 185
			C13-123789 HexaCDF	2020/10/25		104	%	29 - 147
			C13-234678 HexaCDF	2020/10/25		75	%	28 - 136
			C13-23478 PentaCDF	2020/10/25		97	%	21 - 178
			C13-2378 TetraCDD	2020/10/25		75	%	25 - 164
			C13-2378 TetraCDF	2020/10/25		81	%	24 - 169

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-OCDD	2020/10/25		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/25		111	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/10/25		109	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/10/25		108	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/10/25		104	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/10/25		113	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/10/25		107	%	70 - 140
			Octa CDD	2020/10/25		100	%	78 - 144
			2,3,7,8-Tetra CDF	2020/10/25		111	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/10/25		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/10/25		104	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/10/25		106	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/10/25		110	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/10/25		109	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/10/25		105	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/10/25		101	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/10/25		116	%	78 - 138
			Octa CDF	2020/10/25		105	%	63 - 170
7016913	OBC	Method Blank	37CL4 2378 Tetra CDD	2020/10/25		101	%	35 - 197
			C13-1234678 HeptaCDD	2020/10/25		116	%	23 - 140
			C13-1234678 HeptaCDF	2020/10/25		106	%	28 - 143
			C13-123478 HexaCDD	2020/10/25		90	%	32 - 141
			C13-123478 HexaCDF	2020/10/25		87	%	26 - 152
			C13-1234789 HeptaCDF	2020/10/25		128	%	26 - 138
			C13-123678 HexaCDD	2020/10/25		115	%	28 - 130
			C13-123678 HexaCDF	2020/10/25		86	%	26 - 123
			C13-12378 PentaCDD	2020/10/25		100	%	25 - 181
			C13-12378 PentaCDF	2020/10/25		89	%	24 - 185
			C13-123789 HexaCDF	2020/10/25		131	%	29 - 147
			C13-234678 HexaCDF	2020/10/25		95	%	28 - 136
			C13-23478 PentaCDF	2020/10/25		108	%	21 - 178
			C13-2378 TetraCDD	2020/10/25		92	%	25 - 164
			C13-2378 TetraCDF	2020/10/25		102	%	24 - 169
			C13-OCDD	2020/10/25		146	%	17 - 157
			2,3,7,8-Tetra CDD	2020/10/25	0.117 U, EDL=0.117		pg/g	
			1,2,3,7,8-Penta CDD	2020/10/25	0.118 U, EDL=0.118		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/10/25	0.106 U, EDL=0.106		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/10/25	0.106 U, EDL=0.106		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/10/25	0.110 U, EDL=0.110		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/10/25	0.497 J, EDL=0.117		pg/g	
			Octa CDD	2020/10/25	3.90 J, EDL=0.108		pg/g	
			Total Tetra CDD	2020/10/25	0.117 U, EDL=0.117		pg/g	
			Total Penta CDD	2020/10/25	0.118 U, EDL=0.118		pg/g	
			Total Hexa CDD	2020/10/25	0.107 U, EDL=0.107		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Hepta CDD	2020/10/25	0.826 J, EDL=0.117		pg/g	
			2,3,7,8-Tetra CDF	2020/10/25	0.114 U, EDL=0.114		pg/g	
			1,2,3,7,8-Penta CDF	2020/10/25	0.142 J, EDL=0.112		pg/g	
			2,3,4,7,8-Penta CDF	2020/10/25	0.105 U, EDL=0.105		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/10/25	0.106 U, EDL=0.106		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/10/25	0.109 U, EDL=0.109		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/10/25	0.105 U, EDL=0.105		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/10/25	0.110 U, EDL=0.110		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/10/25	0.221 J, EDL=0.114		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/10/25	0.114 U, EDL=0.114		pg/g	
			Octa CDF	2020/10/25	0.846 J, EDL=0.100		pg/g	
			Total Tetra CDF	2020/10/25	0.114 U, EDL=0.114		pg/g	
			Total Penta CDF	2020/10/25	0.142 J, EDL=0.108		pg/g	
			Total Hexa CDF	2020/10/25	0.107 U, EDL=0.107		pg/g	
			Total Hepta CDF	2020/10/25	0.619 J, EDL=0.114		pg/g	
7016913	OBC	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/10/26	NC		%	25
			1,2,3,7,8-Penta CDD	2020/10/26	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/10/26	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/10/26	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/10/26	NC (1)		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/10/26	11		%	25
			Octa CDD	2020/10/26	3.0		%	25
			Total Tetra CDD	2020/10/26	NC		%	25
			Total Penta CDD	2020/10/26	NC		%	25
			Total Hexa CDD	2020/10/26	NC		%	25
			Total Hepta CDD	2020/10/26	12		%	25
			2,3,7,8-Tetra CDF	2020/10/26	NC		%	25
			1,2,3,7,8-Penta CDF	2020/10/26	NC		%	25
			2,3,4,7,8-Penta CDF	2020/10/26	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/10/26	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/10/26	NC (1)		%	25
			2,3,4,6,7,8-Hexa CDF	2020/10/26	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/10/26	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/10/26	12		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/10/26	NC		%	25
			Octa CDF	2020/10/26	8.7		%	25
			Total Tetra CDF	2020/10/26	NC		%	25
			Total Penta CDF	2020/10/26	NC		%	25
			Total Hexa CDF	2020/10/26	0.59		%	25

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total Hepta CDF	2020/10/26	12		%	25
7022840	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/10/27	0.15 U, EDL=0.15		pg/g	
			Confirmation C13-2378 TetraCDF	2020/10/27		87	%	40 - 135
7041349	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2020/11/04	0.16 U, EDL=0.16		pg/g	
			Confirmation C13-2378 TetraCDF	2020/11/04		79	%	40 - 135
7041349	AGU	RPD - Sample/Sample Dup	Confirmation 2,3,7,8-Tetra CDF	2020/11/04	48		%	100
			Confirmation 2,3,7,8-Tetra CDF	2020/11/04	2.5		%	100

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

Melissa DiGrazia, Operations Manager, HRMS Department

Owen Cosby, BSc.C.Chem, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SUBCONTRACT ORDER

Apex Laboratories

OB 10/9/20 **A0J0312**

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

International Solid Sample
Heat Treat Required
High Risk material
Controlled Storage and Disposal

Sample Name: T4RB-16U **Soil** **Sampled: 10/07/20 10:10** (A0J0312-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	OB 10/9/20 ~~10/22/20 17~~:00 10/27/20	04/05/21 10:10	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-16L-O52C **Soil** **Sampled: 10/07/20 13:05** (A0J0312-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	OB 10/9/20 ~~10/22/20 17~~:00 10/27/20	04/05/21 13:05	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-16L-OO **Soil** **Sampled: 10/07/20 13:35** (A0J0312-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	OB 10/9/20 ~~10/22/20 17~~:00 10/27/20	04/05/21 13:35	BV/ Maxxam -- Level 4 Data package

Sample Name: T4RB-17L-ON **Soil** **Sampled: 10/08/20 11:15** (A0J0312-06)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB) *Containers Supplied:* (C)8 oz Glass Jar	OB 10/9/20 ~~10/22/20 17~~:00 10/27/20	04/06/21 11:15	BV/ Maxxam -- Level 4 Data package

Standard TAT

13-Oct-20 13:29
Lori Dufour
C0Q7716

GK1 ENV-760

Fed Ex (Shipper)

Released By 10/12/20 Date | Received By Date

Fed Ex (Shipper)

Released By Date | Received By 10/13/2020 1329 Date

4-9141151

Page 1 of 2

SUBCONTRACT ORDER

Apex Laboratories

CB 10/9/20 **A0J0312**

Sample Name: T4RB-17U **Soil** **Sampled: 10/08/20 11:50** (A0J0312-07)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	CB 10/9/20 ~~10/22/20 17~~:00	04/06/21 11:50	BV/ Maxxam -- Level 4 Data package
Containers Supplied:	10/27/20		
(C)8 oz Glass Jar			

Sample Name: T4RB-K1 **Soil** **Sampled: 10/08/20 13:35** (A0J0312-08)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	CB 10/9/20 ~~10/22/20 17~~:00	04/06/21 13:35	BV/ Maxxam -- Level 4 Data package
Containers Supplied:	10/27/20		
(C)8 oz Glass Jar			

Sample Name: T4RB-46U **Soil** **Sampled: 10/09/20 11:30** (A0J0312-13)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	CB 10/9/20 ~~10/22/20 17~~:00	04/07/21 11:30	BV/ Maxxam -- Level 4 Data package
Containers Supplied:	10/27/20		
(C)8 oz Glass Jar			

Standard TAT

10/12/20 Fed Ex (Shipper) 4.9°C

Released By Date Received By Date

Fed Ex (Shipper) 10/13 1324 4.9/4.1/S1

Released By Date Received By Date

Page 2 of 2

Apex Laboratories, LLC

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

Monday, December 7, 2020

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0J0503 - POP --- T4 Riverbank - 2372-08 Task 3

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 A0J0503, which was received by the laboratory on 10/14/2020 at 9:51:00AM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	1.4 degC	Cooler #2	2.3 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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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T4RB-43L	A0J0503-01	Soil	10/12/20 11:00	10/14/20 09:51
T4RB-44L	A0J0503-02	Soil	10/12/20 11:35	10/14/20 09:51
T4RB-45L	A0J0503-03	Soil	10/12/20 12:10	10/14/20 09:51
T4RB-46L	A0J0503-04	Soil	10/12/20 12:40	10/14/20 09:51
T4RB-47L	A0J0503-05	Soil	10/12/20 13:10	10/14/20 09:51
T4RB-43U	A0J0503-06	Soil	10/12/20 14:15	10/14/20 09:51
T4RB-44U-OD1	A0J0503-07	Soil	10/12/20 14:45	10/14/20 09:51
DUP-5	A0J0503-08	Soil	10/12/20 00:00	10/14/20 09:51
T4RB-45U-OD2	A0J0503-10	Soil	10/13/20 12:45	10/14/20 09:51
T4RB-45U-OD3	A0J0503-11	Soil	10/13/20 13:15	10/14/20 09:51
T4RB-49L	A0J0503-13	Soil	10/13/20 14:15	10/14/20 09:51
T4RB-49U	A0J0503-14	Soil	10/13/20 11:45	10/14/20 09:51

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Darrell Auvil, Project Manager

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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
T4RB-43L (A0J0503-01)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	**149**	12.0	25.0	mg/kg dry	1	10/20/20 20:09	NWTPH-Dx	**F-11, F-15**
Oil	**80.9**	23.9	50.0	mg/kg dry	1	10/20/20 20:09	NWTPH-Dx	**F-16**
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*10/20/20 20:09*	*NWTPH-Dx*	
T4RB-44L (A0J0503-02)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	13.0	26.1	mg/kg dry	1	10/20/20 20:29	NWTPH-Dx	
Oil	**84.1**	26.1	52.1	mg/kg dry	1	10/20/20 20:29	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 78 %*		*Limits: 50-150 %*	*1*	*10/20/20 20:29*	*NWTPH-Dx*	
T4RB-45L (A0J0503-03)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	11.0	25.0	mg/kg dry	1	10/20/20 20:49	NWTPH-Dx	
Oil	ND	22.0	50.0	mg/kg dry	1	10/20/20 20:49	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*	*1*	*10/20/20 20:49*	*NWTPH-Dx*	
T4RB-46L (A0J0503-04)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	10.7	25.0	mg/kg dry	1	10/20/20 21:09	NWTPH-Dx	
Oil	**85.2**	21.3	50.0	mg/kg dry	1	10/20/20 21:09	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*	*1*	*10/20/20 21:09*	*NWTPH-Dx*	
T4RB-47L (A0J0503-05)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	10.8	25.0	mg/kg dry	1	10/20/20 21:29	NWTPH-Dx	
Oil	**27.6**	21.6	50.0	mg/kg dry	1	10/20/20 21:29	NWTPH-Dx	**J**
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*10/20/20 21:29*	*NWTPH-Dx*	
T4RB-43U (A0J0503-06)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	101	203	mg/kg dry	10	10/20/20 21:50	NWTPH-Dx	
Oil	**774**	203	406	mg/kg dry	10	10/20/20 21:50	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 82 %*		*Limits: 50-150 %*	*10*	*10/20/20 21:50*	*NWTPH-Dx*	*S-05*
T4RB-44U-OD1 (A0J0503-07)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	9.85	25.0	mg/kg dry	1	10/20/20 22:30	NWTPH-Dx	
Oil	**78.3**	19.7	50.0	mg/kg dry	1	10/20/20 22:30	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 86 %*		*Limits: 50-150 %*	*1*	*10/20/20 22:30*	*NWTPH-Dx*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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-5 (A0J0503-08)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	10.4	25.0	mg/kg dry	1	10/20/20 22:50	NWTPH-Dx	
Oil	**71.0**	20.8	50.0	mg/kg dry	1	10/20/20 22:50	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 77 %*		*Limits: 50-150 %*	*1*	*10/20/20 22:50*	*NWTPH-Dx*	
T4RB-45U-OD2 (A0J0503-10)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	10.5	25.0	mg/kg dry	1	10/21/20 00:31	NWTPH-Dx	
Oil	**66.9**	21.0	50.0	mg/kg dry	1	10/21/20 00:31	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 74 %*		*Limits: 50-150 %*	*1*	*10/21/20 00:31*	*NWTPH-Dx*	
T4RB-45U-OD3 (A0J0503-11)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	**15.2**	10.2	25.0	mg/kg dry	1	10/21/20 00:51	NWTPH-Dx	**J**
Oil	**47.0**	20.3	50.0	mg/kg dry	1	10/21/20 00:51	NWTPH-Dx	**J**
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*	*1*	*10/21/20 00:51*	*NWTPH-Dx*	
T4RB-49L (A0J0503-13)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	11.0	25.0	mg/kg dry	1	10/21/20 01:11	NWTPH-Dx	
Oil	**24.7**	21.9	50.0	mg/kg dry	1	10/21/20 01:11	NWTPH-Dx	**J**
Surrogate: o-Terphenyl (Surr)		*Recovery: 81 %*		*Limits: 50-150 %*	*1*	*10/21/20 01:11*	*NWTPH-Dx*	
T4RB-49U (A0J0503-14)				**Matrix: Soil**		**Batch: 0100667**		
Diesel	ND	10.8	25.0	mg/kg dry	1	10/21/20 01:32	NWTPH-Dx	
Oil	**329**	21.6	50.0	mg/kg dry	1	10/21/20 01:32	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 84 %*		*Limits: 50-150 %*	*1*	*10/21/20 01:32*	*NWTPH-Dx*	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-44L (A0J0503-02)				**Matrix: Soil**		**Batch: 0100754**		
Chlorobenzene	ND	20.2	40.4	ug/kg dry	50	10/22/20 20:07	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*104 %*	*Limits: 80-120 %*	*1*	*10/22/20 20:07*	*5035A/8260D*	
Toluene-d8 (Surr)			*95 %*	*80-120 %*	*1*	*10/22/20 20:07*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/22/20 20:07*	*5035A/8260D*	
T4RB-49L (A0J0503-13)				**Matrix: Soil**		**Batch: 0100754**		
Chlorobenzene	ND	16.9	33.7	ug/kg dry	50	10/22/20 20:35	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*105 %*	*Limits: 80-120 %*	*1*	*10/22/20 20:35*	*5035A/8260D*	
Toluene-d8 (Surr)			*97 %*	*80-120 %*	*1*	*10/22/20 20:35*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/22/20 20:35*	*5035A/8260D*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-44L (A0J0503-02)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1221	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1232	ND	5.29	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1242	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1248	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1254	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1260	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1262	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Aroclor 1268	ND	2.64	5.29	ug/kg dry	1	10/23/20 19:02	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 92 %*		*Limits: 60-125 %*	*1*	*10/23/20 19:02*	*EPA 8082A*	
T4RB-49L (A0J0503-13)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1221	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1232	ND	4.56	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1242	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1248	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1254	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1260	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1262	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Aroclor 1268	ND	2.28	4.56	ug/kg dry	1	10/23/20 19:37	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 102 %*		*Limits: 60-125 %*	*1*	*10/23/20 19:37*	*EPA 8082A*	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-44L (A0J0503-02RE2)				**Matrix: Soil**		**Batch: 0100905**		**C-05**
Aldrin	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
gamma-BHC (Lindane)	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
cis-Chlordane	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
trans-Chlordane	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
4,4'-DDD	ND	2.61	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
4,4'-DDE	ND	2.61	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
4,4'-DDT	**22.5**	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Dieldrin	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Endosulfan I	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Endosulfan II	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Endosulfan sulfate	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Chlordane (Technical)	ND	39.2	78.3	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
cis-Nonachlor	ND	2.61	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
2,4'-DDD	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
2,4'-DDE	ND	2.61	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
2,4'-DDT	**3.29**	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Oxychlordane	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
trans-Nonachlor	ND	1.31	2.61	ug/kg dry	1	10/28/20 20:31	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*59 %*	*Limits: 42-129 %*	*1*	*10/28/20 20:31*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*90 %*	*55-130 %*	*1*	*10/28/20 20:31*	*EPA 8081B*	
T4RB-49L (A0J0503-13RE2)				**Matrix: Soil**		**Batch: 0100905**		**C-05**
Aldrin	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
gamma-BHC (Lindane)	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
cis-Chlordane	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
trans-Chlordane	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
4,4'-DDD	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
4,4'-DDE	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
4,4'-DDT	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
Dieldrin	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
Endosulfan I	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
Endosulfan II	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
Endosulfan sulfate	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-49L (A0J0503-13RE2)				**Matrix: Soil**		**Batch: 0100905**		**C-05**
Chlordane (Technical)	ND	33.4	66.9	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
cis-Nonachlor	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
2,4'-DDD	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
2,4'-DDE	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
2,4'-DDT	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
Oxychlordane	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
trans-Nonachlor	ND	1.11	2.23	ug/kg dry	1	10/28/20 21:06	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*50 %*	*Limits: 42-129 %*	*1*	*10/28/20 21:06*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*110 %*	*55-130 %*	*1*	*10/28/20 21:06*	*EPA 8081B*	*Q-41*

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-43L (A0J0503-01RE1)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Acenaphthylene	**34.1**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	**J**
Anthracene	**34.0**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	**J**
Benz(a)anthracene	**68.5**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Benzo(a)pyrene	**176**	50.1	100	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Benzo(b)fluoranthene	**160**	50.1	100	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Benzo(k)fluoranthene	**84.6**	50.1	100	ug/kg dry	20	10/22/20 15:55	EPA 8270E	**J**
Benzo(g,h,i)perylene	**188**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Chrysene	**74.6**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Dibenz(a,h)anthracene	ND	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Fluoranthene	**91.9**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Fluorene	**72.2**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**146**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
2-Methylnaphthalene	**71.7**	66.8	133	ug/kg dry	20	10/22/20 15:55	EPA 8270E	**J**
Naphthalene	**280**	66.8	133	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Phenanthrene	**136**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Pyrene	**107**	33.3	66.8	ug/kg dry	20	10/22/20 15:55	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*77 %*	*Limits: 37-122 %*	*20*	*10/22/20 15:55*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*80 %*	*44-120 %*	*20*	*10/22/20 15:55*	*EPA 8270E*	
Phenol-d6 (Surr)			*50 %*	*33-122 %*	*20*	*10/22/20 15:55*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*92 %*	*54-127 %*	*20*	*10/22/20 15:55*	*EPA 8270E*	
2-Fluorophenol (Surr)			*65 %*	*35-120 %*	*20*	*10/22/20 15:55*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*101 %*	*39-132 %*	*20*	*10/22/20 15:55*	*EPA 8270E*	
T4RB-44L (A0J0503-02RE1)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Acenaphthylene	ND	14.3	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Anthracene	**13.5**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	**J**
Benz(a)anthracene	**58.7**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Benzo(a)pyrene	**79.7**	10.7	21.4	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Benzo(b)fluoranthene	**86.5**	10.7	21.4	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Benzo(k)fluoranthene	**36.4**	10.7	21.4	ug/kg dry	4	10/22/20 16:32	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**66.9**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Chrysene	**74.4**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-44L (A0J0503-02RE1)				**Matrix: Soil**		**Batch: 0100712**		
Dibenz(a,h)anthracene	**8.76**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	**J**
Fluoranthene	**139**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Fluorene	ND	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**55.1**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
2-Methylnaphthalene	ND	14.3	28.5	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Naphthalene	**49.6**	14.3	28.5	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Phenanthrene	**69.4**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Pyrene	**179**	7.11	14.3	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	107	214	ug/kg dry	4	10/22/20 16:32	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*78 %*	*Limits: 37-122 %*	*4*	*10/22/20 16:32*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*80 %*	*44-120 %*	*4*	*10/22/20 16:32*	*EPA 8270E*	
Phenol-d6 (Surr)			*69 %*	*33-122 %*	*4*	*10/22/20 16:32*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*85 %*	*54-127 %*	*4*	*10/22/20 16:32*	*EPA 8270E*	
2-Fluorophenol (Surr)			*73 %*	*35-120 %*	*4*	*10/22/20 16:32*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*88 %*	*39-132 %*	*4*	*10/22/20 16:32*	*EPA 8270E*	
T4RB-45L (A0J0503-03)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Acenaphthylene	ND	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Anthracene	ND	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Benz(a)anthracene	**165**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Benzo(a)pyrene	**254**	89.9	180	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Benzo(b)fluoranthene	**244**	89.9	180	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Benzo(k)fluoranthene	**136**	89.9	180	ug/kg dry	40	10/22/20 11:41	EPA 8270E	**J**
Benzo(g,h,i)perylene	**177**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Chrysene	**198**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Dibenz(a,h)anthracene	ND	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Fluoranthene	**327**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Fluorene	ND	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**166**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
2-Methylnaphthalene	ND	120	240	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Naphthalene	ND	120	240	ug/kg dry	40	10/22/20 11:41	EPA 8270E	
Phenanthrene	**93.6**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	**J**
Pyrene	**457**	59.8	120	ug/kg dry	40	10/22/20 11:41	EPA 8270E	

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-45L (A0J0503-03)				**Matrix: Soil**		**Batch: 0100712**		
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*57 %*	*Limits: 37-122 %*	*40*	*10/22/20 11:41*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*40*	*10/22/20 11:41*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*18 %*	*33-122 %*	*40*	*10/22/20 11:41*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*95 %*	*54-127 %*	*40*	*10/22/20 11:41*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*40 %*	*35-120 %*	*40*	*10/22/20 11:41*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*58 %*	*39-132 %*	*40*	*10/22/20 11:41*	*EPA 8270E*	*S-05*
T4RB-46L (A0J0503-04)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Acenaphthylene	ND	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Anthracene	ND	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Benz(a)anthracene	**203**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Benzo(a)pyrene	**318**	90.1	180	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Benzo(b)fluoranthene	**316**	90.1	180	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Benzo(k)fluoranthene	**135**	90.1	180	ug/kg dry	40	10/22/20 12:17	EPA 8270E	**J**
Benzo(g,h,i)perylene	**239**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Chrysene	**239**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Dibenz(a,h)anthracene	ND	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Fluoranthene	**405**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Fluorene	ND	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**223**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
2-Methylnaphthalene	ND	120	240	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Naphthalene	ND	120	240	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Phenanthrene	**100**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	**J**
Pyrene	**591**	59.9	120	ug/kg dry	40	10/22/20 12:17	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*64 %*	*Limits: 37-122 %*	*40*	*10/22/20 12:17*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*80 %*	*44-120 %*	*40*	*10/22/20 12:17*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*24 %*	*33-122 %*	*40*	*10/22/20 12:17*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*91 %*	*54-127 %*	*40*	*10/22/20 12:17*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*42 %*	*35-120 %*	*40*	*10/22/20 12:17*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*40*	*10/22/20 12:17*	*EPA 8270E*	*S-05*
T4RB-47L (A0J0503-05)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Acenaphthylene	ND	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-47L (A0J0503-05)				**Matrix: Soil**		**Batch: 0100712**		
Anthracene	ND	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Benz(a)anthracene	**182**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Benzo(a)pyrene	**200**	91.1	182	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Benzo(b)fluoranthene	**187**	91.1	182	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Benzo(k)fluoranthene	**106**	91.1	182	ug/kg dry	40	10/22/20 12:53	EPA 8270E	**J**
Benzo(g,h,i)perylene	**114**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	**J**
Chrysene	**207**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Dibenz(a,h)anthracene	ND	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Fluoranthene	**295**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Fluorene	ND	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**111**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	**J**
2-Methylnaphthalene	ND	122	243	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Naphthalene	ND	122	243	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Phenanthrene	**173**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Pyrene	**377**	60.6	122	ug/kg dry	40	10/22/20 12:53	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*59 %*	*Limits: 37-122 %*	*40*	*10/22/20 12:53*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*73 %*	*44-120 %*	*40*	*10/22/20 12:53*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*13 %*	*33-122 %*	*40*	*10/22/20 12:53*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*82 %*	*54-127 %*	*40*	*10/22/20 12:53*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*37 %*	*35-120 %*	*40*	*10/22/20 12:53*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*63 %*	*39-132 %*	*40*	*10/22/20 12:53*	*EPA 8270E*	*S-05*
T4RB-43U (A0J0503-06)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	**764**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Acenaphthylene	**151**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Anthracene	**838**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Benz(a)anthracene	**6460**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Benzo(a)pyrene	**10000**	83.8	168	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Benzo(b)fluoranthene	**13000**	83.8	168	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Benzo(k)fluoranthene	**4060**	83.8	168	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**M-05, Q-42**
Benzo(g,h,i)perylene	**7210**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Chrysene	**8130**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Dibenz(a,h)anthracene	**1480**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Fluoranthene	**10500**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-43U (A0J0503-06)				**Matrix: Soil**		**Batch: 0100765**		
Fluorene	**334**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Indeno(1,2,3-cd)pyrene	**7020**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
2-Methylnaphthalene	**187**	112	223	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**J, Q-42**
Naphthalene	**423**	112	223	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Phenanthrene	**4840**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Pyrene	**9470**	55.7	112	ug/kg dry	40	10/22/20 18:21	EPA 8270E	**Q-42**
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*59 %*	*Limits: 37-122 %*	*40*	*10/22/20 18:21*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*40*	*10/22/20 18:21*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*21 %*	*33-122 %*	*40*	*10/22/20 18:21*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*93 %*	*54-127 %*	*40*	*10/22/20 18:21*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*41 %*	*35-120 %*	*40*	*10/22/20 18:21*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*83 %*	*39-132 %*	*40*	*10/22/20 18:21*	*EPA 8270E*	*S-05*
T4RB-44U-OD1 (A0J0503-07)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	**33.9**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Acenaphthylene	**45.7**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Anthracene	**80.4**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Benz(a)anthracene	**477**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Benzo(a)pyrene	**722**	19.9	39.8	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Benzo(b)fluoranthene	**898**	19.9	39.8	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Benzo(k)fluoranthene	**327**	19.9	39.8	ug/kg dry	10	10/22/20 19:34	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**625**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Chrysene	**651**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Dibenz(a,h)anthracene	**97.3**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Fluoranthene	**903**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Fluorene	**18.8**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	**J**
Indeno(1,2,3-cd)pyrene	**553**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
2-Methylnaphthalene	**41.2**	26.6	53.1	ug/kg dry	10	10/22/20 19:34	EPA 8270E	**J**
Naphthalene	**150**	26.6	53.1	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Phenanthrene	**332**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Pyrene	**1060**	13.2	26.6	ug/kg dry	10	10/22/20 19:34	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*62 %*	*Limits: 37-122 %*	*10*	*10/22/20 19:34*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*10*	*10/22/20 19:34*	*EPA 8270E*	
Phenol-d6 (Surr)			*50 %*	*33-122 %*	*10*	*10/22/20 19:34*	*EPA 8270E*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-44U-OD1 (A0J0503-07)				**Matrix: Soil**		**Batch: 0100765**		
Surrogate: p-Terphenyl-d14 (Surr)			*Recovery: 89 %*	*Limits: 54-127 %*	*10*	*10/22/20 19:34*	*EPA 8270E*	
2-Fluorophenol (Surr)			*53 %*	*35-120 %*	*10*	*10/22/20 19:34*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*81 %*	*39-132 %*	*10*	*10/22/20 19:34*	*EPA 8270E*	
DUP-5 (A0J0503-08)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	**46.7**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Acenaphthylene	**49.8**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Anthracene	**96.2**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Benz(a)anthracene	**608**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Benzo(a)pyrene	**857**	20.6	41.3	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Benzo(b)fluoranthene	**1190**	20.6	41.3	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Benzo(k)fluoranthene	**372**	20.6	41.3	ug/kg dry	10	10/22/20 20:10	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**767**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Chrysene	**816**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Dibenz(a,h)anthracene	**127**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Fluoranthene	**1180**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Fluorene	**27.2**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	**J**
Indeno(1,2,3-cd)pyrene	**680**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
2-Methylnaphthalene	**60.2**	27.5	55.0	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Naphthalene	**219**	27.5	55.0	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Phenanthrene	**433**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Pyrene	**1280**	13.7	27.5	ug/kg dry	10	10/22/20 20:10	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 80 %*	*Limits: 37-122 %*	*10*	*10/22/20 20:10*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*83 %*	*44-120 %*	*10*	*10/22/20 20:10*	*EPA 8270E*	
Phenol-d6 (Surr)			*61 %*	*33-122 %*	*10*	*10/22/20 20:10*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*87 %*	*54-127 %*	*10*	*10/22/20 20:10*	*EPA 8270E*	
2-Fluorophenol (Surr)			*63 %*	*35-120 %*	*10*	*10/22/20 20:10*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*83 %*	*39-132 %*	*10*	*10/22/20 20:10*	*EPA 8270E*	
T4RB-45U-OD2 (A0J0503-10)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Acenaphthylene	ND	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Anthracene	ND	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Benz(a)anthracene	**296**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-45U-OD2 (A0J0503-10)				**Matrix: Soil**		**Batch: 0100712**		
Benzo(a)pyrene	**478**	87.3	175	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Benzo(b)fluoranthene	**553**	87.3	175	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Benzo(k)fluoranthene	**224**	87.3	175	ug/kg dry	40	10/22/20 13:30	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**332**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Chrysene	**370**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Dibenz(a,h)anthracene	**62.3**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	**J**
Fluoranthene	**563**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Fluorene	ND	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**309**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
2-Methylnaphthalene	ND	117	233	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Naphthalene	ND	117	233	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Phenanthrene	**214**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Pyrene	**739**	58.1	117	ug/kg dry	40	10/22/20 13:30	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*56 %*	*Limits: 37-122 %*	*40*	*10/22/20 13:30*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*40*	*10/22/20 13:30*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*18 %*	*33-122 %*	*40*	*10/22/20 13:30*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*84 %*	*54-127 %*	*40*	*10/22/20 13:30*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*39 %*	*35-120 %*	*40*	*10/22/20 13:30*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*63 %*	*39-132 %*	*40*	*10/22/20 13:30*	*EPA 8270E*	*S-05*
T4RB-45U-OD3 (A0J0503-11RE1)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Acenaphthylene	**36.7**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Anthracene	**42.9**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Benz(a)anthracene	**321**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Benzo(a)pyrene	**361**	20.6	41.1	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Benzo(b)fluoranthene	**502**	20.6	41.1	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Benzo(k)fluoranthene	**150**	20.6	41.1	ug/kg dry	10	10/23/20 15:51	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**350**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Chrysene	**383**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Dibenz(a,h)anthracene	**41.0**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Fluoranthene	**668**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Fluorene	ND	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**318**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-45U-OD3 (A0J0503-11RE1)				**Matrix: Soil**		**Batch: 0100765**		
2-Methylnaphthalene	ND	27.5	54.8	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Naphthalene	**111**	27.5	54.8	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Phenanthrene	**132**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Pyrene	**939**	13.7	27.5	ug/kg dry	10	10/23/20 15:51	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*70 %*	*Limits: 37-122 %*	*10*	*10/23/20 15:51*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*	*10*	*10/23/20 15:51*	*EPA 8270E*	
Phenol-d6 (Surr)			*43 %*	*33-122 %*	*10*	*10/23/20 15:51*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*83 %*	*54-127 %*	*10*	*10/23/20 15:51*	*EPA 8270E*	
2-Fluorophenol (Surr)			*58 %*	*35-120 %*	*10*	*10/23/20 15:51*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*10*	*10/23/20 15:51*	*EPA 8270E*	
T4RB-49L (A0J0503-13RE2)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Acenaphthylene	ND	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Anthracene	**6.19**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	**J**
Benz(a)anthracene	**19.6**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Benzo(a)pyrene	**31.8**	9.16	18.3	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Benzo(b)fluoranthene	**27.2**	9.16	18.3	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Benzo(k)fluoranthene	**14.1**	9.16	18.3	ug/kg dry	4	10/23/20 19:31	EPA 8270E	**J**
Benzo(g,h,i)perylene	**26.3**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Chrysene	**23.3**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Dibenz(a,h)anthracene	ND	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Fluoranthene	**30.6**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Fluorene	ND	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**19.8**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
2-Methylnaphthalene	ND	12.2	24.4	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Naphthalene	ND	12.2	24.4	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Phenanthrene	**14.1**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Pyrene	**43.5**	6.09	12.2	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	91.6	183	ug/kg dry	4	10/23/20 19:31	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*83 %*	*Limits: 37-122 %*	*4*	*10/23/20 19:31*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*76 %*	*44-120 %*	*4*	*10/23/20 19:31*	*EPA 8270E*	
Phenol-d6 (Surr)			*71 %*	*33-122 %*	*4*	*10/23/20 19:31*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*89 %*	*54-127 %*	*4*	*10/23/20 19:31*	*EPA 8270E*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-49L (A0J0503-13RE2)				**Matrix: Soil**		**Batch: 0100765**		
Surrogate: 2-Fluorophenol (Surr)		*Recovery:*	*75 %*	*Limits: 35-120 %*	*4*	*10/23/20 19:31*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*90 %*	*39-132 %*	*4*	*10/23/20 19:31*	*EPA 8270E*	
T4RB-49U (A0J0503-14)				**Matrix: Soil**		**Batch: 0100712**		
Acenaphthene	ND	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Acenaphthylene	ND	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Anthracene	**171**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	**J**
Benz(a)anthracene	**1340**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Benzo(a)pyrene	**1780**	229	458	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Benzo(b)fluoranthene	**2390**	229	458	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Benzo(k)fluoranthene	**862**	229	458	ug/kg dry	40	10/22/20 10:28	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**1330**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Chrysene	**1670**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Dibenz(a,h)anthracene	**267**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	**J**
Fluoranthene	**2300**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Fluorene	ND	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**1270**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
2-Methylnaphthalene	ND	306	611	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Naphthalene	ND	306	611	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Phenanthrene	**1090**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Pyrene	**2030**	152	306	ug/kg dry	40	10/22/20 10:28	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*48 %*	*Limits: 37-122 %*	*40*	*10/22/20 10:28*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*80 %*	*44-120 %*	*40*	*10/22/20 10:28*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*16 %*	*33-122 %*	*40*	*10/22/20 10:28*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*96 %*	*54-127 %*	*40*	*10/22/20 10:28*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*39 %*	*35-120 %*	*40*	*10/22/20 10:28*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*100 %*	*39-132 %*	*40*	*10/22/20 10:28*	*EPA 8270E*	*S-05*

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-43L (A0J0503-01)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**2.19**	0.657	1.31	mg/kg dry	10	10/23/20 20:50	EPA 6020A	
Cadmium	**0.922**	0.131	0.263	mg/kg dry	10	10/23/20 20:50	EPA 6020A	
Copper	**14.4**	1.31	2.63	mg/kg dry	10	10/23/20 20:50	EPA 6020A	
Lead	**22.8**	0.131	0.263	mg/kg dry	10	10/23/20 20:50	EPA 6020A	
Mercury	ND	0.0526	0.105	mg/kg dry	10	10/23/20 20:50	EPA 6020A	
Zinc	**597**	2.63	5.26	mg/kg dry	10	10/23/20 20:50	EPA 6020A	
T4RB-44L (A0J0503-02)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.92**	0.691	1.38	mg/kg dry	10	10/23/20 20:55	EPA 6020A	
Cadmium	**0.756**	0.138	0.276	mg/kg dry	10	10/23/20 20:55	EPA 6020A	
Copper	**20.2**	1.38	2.76	mg/kg dry	10	10/23/20 20:55	EPA 6020A	
Lead	**58.9**	0.138	0.276	mg/kg dry	10	10/23/20 20:55	EPA 6020A	
Mercury	**0.0898**	0.0552	0.110	mg/kg dry	10	10/23/20 20:55	EPA 6020A	**J**
Zinc	**89.7**	2.76	5.52	mg/kg dry	10	10/23/20 20:55	EPA 6020A	
T4RB-45L (A0J0503-03)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.35**	0.625	1.25	mg/kg dry	10	10/23/20 21:00	EPA 6020A	
Cadmium	**0.354**	0.125	0.250	mg/kg dry	10	10/23/20 21:00	EPA 6020A	
Copper	**17.3**	1.25	2.50	mg/kg dry	10	10/23/20 21:00	EPA 6020A	
Lead	**10.2**	0.125	0.250	mg/kg dry	10	10/23/20 21:00	EPA 6020A	
Mercury	ND	0.0500	0.0999	mg/kg dry	10	10/23/20 21:00	EPA 6020A	
Zinc	**80.1**	2.50	5.00	mg/kg dry	10	10/23/20 21:00	EPA 6020A	
T4RB-46L (A0J0503-04)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.17**	0.582	1.16	mg/kg dry	10	10/23/20 21:04	EPA 6020A	
Cadmium	**0.561**	0.116	0.233	mg/kg dry	10	10/23/20 21:04	EPA 6020A	
Copper	**14.8**	1.16	2.33	mg/kg dry	10	10/23/20 21:04	EPA 6020A	
Lead	**14.0**	0.116	0.233	mg/kg dry	10	10/23/20 21:04	EPA 6020A	
Mercury	ND	0.0466	0.0931	mg/kg dry	10	10/23/20 21:04	EPA 6020A	
Zinc	**106**	2.33	4.66	mg/kg dry	10	10/23/20 21:04	EPA 6020A	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-47L (A0J0503-05)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.89**	0.624	1.25	mg/kg dry	10	10/23/20 21:19	EPA 6020A	
Cadmium	**0.185**	0.125	0.249	mg/kg dry	10	10/23/20 21:19	EPA 6020A	**J**
Copper	**14.7**	1.25	2.49	mg/kg dry	10	10/23/20 21:19	EPA 6020A	
Lead	**4.23**	0.125	0.249	mg/kg dry	10	10/23/20 21:19	EPA 6020A	
Mercury	ND	0.0499	0.0998	mg/kg dry	10	10/23/20 21:19	EPA 6020A	
Zinc	**52.4**	2.49	4.99	mg/kg dry	10	10/23/20 21:19	EPA 6020A	
T4RB-43U (A0J0503-06)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**23.1**	0.558	1.12	mg/kg dry	10	10/23/20 21:34	EPA 6020A	
Cadmium	**18.0**	0.112	0.223	mg/kg dry	10	10/23/20 21:34	EPA 6020A	
Copper	**85.2**	1.12	2.23	mg/kg dry	10	10/23/20 21:34	EPA 6020A	
Mercury	**0.205**	0.0446	0.0892	mg/kg dry	10	10/23/20 21:34	EPA 6020A	
T4RB-43U (A0J0503-06RE1)				**Matrix: Soil**				
Batch: 0100767								
Lead	**2410**	0.558	1.12	mg/kg dry	50	10/27/20 12:53	EPA 6020A	
Zinc	**4890**	11.2	22.3	mg/kg dry	50	10/27/20 12:53	EPA 6020A	
T4RB-44U-OD1 (A0J0503-07)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.91**	0.547	1.09	mg/kg dry	10	10/23/20 21:39	EPA 6020A	
Cadmium	**0.847**	0.109	0.219	mg/kg dry	10	10/23/20 21:39	EPA 6020A	
Copper	**16.4**	1.09	2.19	mg/kg dry	10	10/23/20 21:39	EPA 6020A	
Lead	**308**	0.109	0.219	mg/kg dry	10	10/23/20 21:39	EPA 6020A	
Mercury	ND	0.0438	0.0876	mg/kg dry	10	10/23/20 21:39	EPA 6020A	
Zinc	**181**	2.19	4.38	mg/kg dry	10	10/23/20 21:39	EPA 6020A	
DUP-5 (A0J0503-08)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.64**	0.524	1.05	mg/kg dry	10	10/23/20 21:44	EPA 6020A	
Cadmium	**0.710**	0.105	0.209	mg/kg dry	10	10/23/20 21:44	EPA 6020A	
Copper	**16.7**	1.05	2.09	mg/kg dry	10	10/23/20 21:44	EPA 6020A	
Lead	**198**	0.105	0.209	mg/kg dry	10	10/23/20 21:44	EPA 6020A	

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
DUP-5 (A0J0503-08)				**Matrix: Soil**				
Mercury	ND	0.0419	0.0838	mg/kg dry	10	10/23/20 21:44	EPA 6020A	
Zinc	**144**	2.09	4.19	mg/kg dry	10	10/23/20 21:44	EPA 6020A	
T4RB-45U-OD2 (A0J0503-10)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.84**	0.586	1.17	mg/kg dry	10	10/23/20 21:49	EPA 6020A	
Cadmium	**1.09**	0.117	0.235	mg/kg dry	10	10/23/20 21:49	EPA 6020A	
Copper	**22.2**	1.17	2.35	mg/kg dry	10	10/23/20 21:49	EPA 6020A	
Mercury	ND	0.0469	0.0938	mg/kg dry	10	10/23/20 21:49	EPA 6020A	
Zinc	**219**	2.35	4.69	mg/kg dry	10	10/23/20 21:49	EPA 6020A	
T4RB-45U-OD2 (A0J0503-10RE1)				**Matrix: Soil**				
Batch: 0100767								
Lead	**911**	0.586	1.17	mg/kg dry	50	10/27/20 12:57	EPA 6020A	
T4RB-45U-OD3 (A0J0503-11)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.45**	0.567	1.13	mg/kg dry	10	10/23/20 21:54	EPA 6020A	
Cadmium	ND	0.113	0.227	mg/kg dry	10	10/23/20 21:54	EPA 6020A	
Copper	**13.8**	1.13	2.27	mg/kg dry	10	10/23/20 21:54	EPA 6020A	
Lead	**6.27**	0.113	0.227	mg/kg dry	10	10/23/20 21:54	EPA 6020A	
Mercury	ND	0.0453	0.0907	mg/kg dry	10	10/23/20 21:54	EPA 6020A	
Zinc	**35.2**	2.27	4.53	mg/kg dry	10	10/23/20 21:54	EPA 6020A	
T4RB-49L (A0J0503-13)				**Matrix: Soil**				
Batch: 0100767								
Arsenic	**3.61**	0.588	1.18	mg/kg dry	10	10/23/20 21:59	EPA 6020A	
Cadmium	**0.723**	0.118	0.235	mg/kg dry	10	10/23/20 21:59	EPA 6020A	
Copper	**16.9**	1.18	2.35	mg/kg dry	10	10/23/20 21:59	EPA 6020A	
Lead	**17.7**	0.118	0.235	mg/kg dry	10	10/23/20 21:59	EPA 6020A	
Mercury	**0.0793**	0.0470	0.0940	mg/kg dry	10	10/23/20 21:59	EPA 6020A	**J**
Zinc	**147**	2.35	4.70	mg/kg dry	10	10/23/20 21:59	EPA 6020A	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-43L (A0J0503-01)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**79.3**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-44L (A0J0503-02)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**74.8**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-45L (A0J0503-03)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**88.9**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-46L (A0J0503-04)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**88.5**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-47L (A0J0503-05)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**87.7**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-43U (A0J0503-06)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**92.4**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-44U-OD1 (A0J0503-07)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**93.0**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
DUP-5 (A0J0503-08)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**92.7**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-45U-OD2 (A0J0503-10)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**90.9**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-45U-OD3 (A0J0503-11)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**93.7**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-49L (A0J0503-13)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**85.8**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	
T4RB-49U (A0J0503-14)				**Matrix: Soil**		**Batch: 0100549**		
% Solids	**86.7**	1.00	1.00	%	1	10/19/20 09:22	EPA 8000D	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Butyl Tins

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-44L (A0J0503-02)				**Matrix: Soil**		**Batch: BIJ0720**		
Batch: BIJ0720								
Tributyltin Ion	ND	0.449	3.85	ug/kg dry	1	11/09/20 11:24	EPA 8270E-SIM	U
Batch: BIJ0720								
Surrogate: Tripentyltin		*Recovery:*	*65.7 %*	*Limits: 30-160 %*	*1*	*11/09/20 11:24*	*EPA 8270E-SIM*	
Tripropyltin			*51.9 %*	*30-160 %*	*1*	*11/09/20 11:24*	*EPA 8270E-SIM*	
T4RB-49L (A0J0503-13)				**Matrix: Soil**		**Batch: BIJ0720**		
Batch: BIJ0720								
Tributyltin Ion	ND	0.445	3.82	ug/kg dry	1	11/09/20 11:41	EPA 8270E-SIM	U
Batch: BIJ0720								
Surrogate: Tripentyltin		*Recovery:*	*67.2 %*	*Limits: 30-160 %*	*1*	*11/09/20 11:41*	*EPA 8270E-SIM*	
Tripropyltin			*51.2 %*	*30-160 %*	*1*	*11/09/20 11:41*	*EPA 8270E-SIM*	

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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 0100667 - EPA 3546 (Fuels)							**Soil**					
Blank (0100667-BLK1)			Prepared: 10/20/20 12:45		Analyzed: 10/20/20 18:07							
NWTPH-Dx												
Diesel	ND	9.09	18.2	mg/kg wet	1	---	---	---	---	---	---	
Oil	ND	18.2	36.4	mg/kg wet	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (0100667-BS1)			Prepared: 10/20/20 12:45		Analyzed: 10/20/20 18:28							
NWTPH-Dx												
Diesel	107	10.0	20.0	mg/kg wet	1	125	---	85	73-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100667-DUP2)			Prepared: 10/20/20 12:45		Analyzed: 10/21/20 01:52							
QC Source Sample: T4RB-49U (A0J0503-14)												
NWTPH-Dx												
Diesel	ND	10.7	21.4	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**189**	21.4	42.8	mg/kg dry	1	---	329	---	---	**54**	**30%**	F-03, Q-05
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*			*Dilution: 1x*					
Duplicate (0100667-DUP3)			Prepared: 10/20/20 12:45		Analyzed: 10/21/20 12:30							
QC Source Sample: Non-SDG (A0J0496-02RE1)												
Diesel	ND	51.1	102	mg/kg dry	5	---	ND	---	---	---	30%	
Oil	**3570**	102	205	mg/kg dry	5	---	3750	---	---	5	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 74 %*	*Limits: 50-150 %*			*Dilution: 5x*					S-05

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100754 - EPA 5035A							**Soil**					
Blank (0100754-BLK1)			Prepared: 10/22/20 09:00 Analyzed: 10/22/20 11:27									
5035A/8260D												
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100754 - EPA 5035A							**Soil**					
Blank (0100754-BLK1)			Prepared: 10/22/20 09:00		Analyzed: 10/22/20 11:27							
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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 102 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*			*"*				
LCS (0100754-BS1)			Prepared: 10/22/20 09:00		Analyzed: 10/22/20 10:32							
5035A/8260D												
Bromobenzene	968	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Bromochloromethane	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
Bromodichloromethane	1030	25.0	50.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
Bromoform	912	50.0	100	ug/kg wet	50	1000	---	91	80-120%	---	---	
Bromomethane	1220	500	500	ug/kg wet	50	1000	---	**122**	**80-120%**	---	---	Q-56
Carbon tetrachloride	1150	25.0	50.0	ug/kg wet	50	1000	---	115	80-120%	---	---	
Chlorobenzene	966	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Chloroethane	1110	250	500	ug/kg wet	50	1000	---	111	80-120%	---	---	
Chloroform	1100	25.0	50.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
Chloromethane	952	125	250	ug/kg wet	50	1000	---	95	80-120%	---	---	
2-Chlorotoluene	956	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
4-Chlorotoluene	964	25.0	50.0	ug/kg wet	50	1000	---	96	80-120%	---	---	
Dibromochloromethane	1100	50.0	100	ug/kg wet	50	1000	---	110	80-120%	---	---	
1,2-Dibromo-3-chloropropane	811	125	250	ug/kg wet	50	1000	---	81	80-120%	---	---	
1,2-Dibromoethane (EDB)	996	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Dibromomethane	1010	25.0	50.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
1,2-Dichlorobenzene	946	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100754 - EPA 5035A							**Soil**					
LCS (0100754-BS1)			Prepared: 10/22/20 09:00		Analyzed: 10/22/20 10:32							
1,3-Dichlorobenzene	972	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,4-Dichlorobenzene	948	12.5	25.0	ug/kg wet	50	1000	---	95	80-120%	---	---	
Dichlorodifluoromethane	1130	50.0	100	ug/kg wet	50	1000	---	113	80-120%	---	---	
1,1-Dichloroethane	1030	12.5	25.0	ug/kg wet	50	1000	---	103	80-120%	---	---	
1,2-Dichloroethane (EDC)	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
1,1-Dichloroethene	942	12.5	25.0	ug/kg wet	50	1000	---	94	80-120%	---	---	
cis-1,2-Dichloroethene	988	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
trans-1,2-Dichloroethene	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,2-Dichloropropane	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,3-Dichloropropane	990	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
2,2-Dichloropropane	1110	25.0	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
1,1-Dichloropropene	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
cis-1,3-Dichloropropene	970	25.0	50.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
trans-1,3-Dichloropropene	1080	25.0	50.0	ug/kg wet	50	1000	---	108	80-120%	---	---	
Hexachlorobutadiene	956	50.0	100	ug/kg wet	50	1000	---	96	80-120%	---	---	
Methylene chloride	1140	250	500	ug/kg wet	50	1000	---	114	80-120%	---	---	
1,1,1,2-Tetrachloroethane	1110	12.5	25.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Tetrachloroethene (PCE)	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
1,2,3-Trichlorobenzene	948	125	250	ug/kg wet	50	1000	---	95	80-120%	---	---	
1,2,4-Trichlorobenzene	928	125	250	ug/kg wet	50	1000	---	93	80-120%	---	---	
1,1,1-Trichloroethane	1100	12.5	25.0	ug/kg wet	50	1000	---	110	80-120%	---	---	
1,1,2-Trichloroethane	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Trichloroethene (TCE)	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Trichlorofluoromethane	1250	50.0	100	ug/kg wet	50	1000	---	**125**	**80-120%**	---	---	Q-56
1,2,3-Trichloropropane	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
Vinyl chloride	1130	12.5	25.0	ug/kg wet	50	1000	---	113	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*98 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*79-120 %*			*"*				
Duplicate (0100754-DUP1)			Prepared: 10/19/20 10:10		Analyzed: 10/22/20 15:06							
QC Source Sample: Non-SDG (A0J0639-04)												
Bromobenzene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100754 - EPA 5035A							**Soil**					
Duplicate (0100754-DUP1)			Prepared: 10/19/20 10:10 Analyzed: 10/22/20 15:06									
QC Source Sample: Non-SDG (A0J0639-04)												
Bromochloromethane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	66.0	132	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	660	660	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	330	660	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	165	330	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	66.0	132	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	165	330	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	66.0	132	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	66.0	132	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	330	660	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

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6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100754 - EPA 5035A							**Soil**					
Duplicate (0100754-DUP1)			Prepared: 10/19/20 10:10 Analyzed: 10/22/20 15:06									
QC Source Sample: Non-SDG (A0J0639-04)												
1,1,2,2-Tetrachloroethane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	165	330	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	165	330	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	66.0	132	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	33.0	66.0	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	16.5	33.0	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 104 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*96 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*				*"*			
Matrix Spike (0100754-MS1)			Prepared: 10/19/20 10:50 Analyzed: 10/22/20 16:55									
QC Source Sample: Non-SDG (A0J0639-05)												
5035A/8260D												
Bromobenzene	1290	15.8	31.5	ug/kg dry	50	1260	ND	102	78-121%	---	---	
Bromochloromethane	1350	31.5	63.1	ug/kg dry	50	1260	ND	107	78-125%	---	---	
Bromodichloromethane	1330	31.5	63.1	ug/kg dry	50	1260	ND	105	75-127%	---	---	
Bromoform	1250	63.1	126	ug/kg dry	50	1260	ND	99	67-132%	---	---	
Bromomethane	1580	631	631	ug/kg dry	50	1260	ND	126	53-143%	---	---	Q-54
Carbon tetrachloride	1450	31.5	63.1	ug/kg dry	50	1260	ND	115	70-135%	---	---	
Chlorobenzene	1250	15.8	31.5	ug/kg dry	50	1260	ND	99	79-120%	---	---	
Chloroethane	986	315	631	ug/kg dry	50	1260	ND	78	59-139%	---	---	
Chloroform	1410	31.5	63.1	ug/kg dry	50	1260	ND	111	78-123%	---	---	
Chloromethane	1120	158	315	ug/kg dry	50	1260	ND	89	50-136%	---	---	
2-Chlorotoluene	1220	31.5	63.1	ug/kg dry	50	1260	ND	97	75-122%	---	---	
4-Chlorotoluene	1210	31.5	63.1	ug/kg dry	50	1260	ND	96	72-124%	---	---	
Dibromochloromethane	1430	63.1	126	ug/kg dry	50	1260	ND	113	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1050	158	315	ug/kg dry	50	1260	ND	83	61-132%	---	---	
1,2-Dibromoethane (EDB)	1280	31.5	63.1	ug/kg dry	50	1260	ND	101	78-122%	---	---	
Dibromomethane	1340	31.5	63.1	ug/kg dry	50	1260	ND	106	78-125%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100754 - EPA 5035A							**Soil**					
Matrix Spike (0100754-MS1)			Prepared: 10/19/20 10:50 Analyzed: 10/22/20 16:55									
QC Source Sample: Non-SDG (A0J0639-05)												
1,2-Dichlorobenzene	1220	15.8	31.5	ug/kg dry	50	1260	ND	97	78-121%	---	---	
1,3-Dichlorobenzene	1250	15.8	31.5	ug/kg dry	50	1260	ND	99	77-121%	---	---	
1,4-Dichlorobenzene	1220	15.8	31.5	ug/kg dry	50	1260	ND	97	75-120%	---	---	
Dichlorodifluoromethane	1380	63.1	126	ug/kg dry	50	1260	ND	109	29-149%	---	---	
1,1-Dichloroethane	1320	15.8	31.5	ug/kg dry	50	1260	ND	105	76-125%	---	---	
1,2-Dichloroethane (EDC)	1330	15.8	31.5	ug/kg dry	50	1260	ND	105	73-128%	---	---	
1,1-Dichloroethene	1010	15.8	31.5	ug/kg dry	50	1260	ND	80	70-131%	---	---	
cis-1,2-Dichloroethene	1280	15.8	31.5	ug/kg dry	50	1260	ND	101	77-123%	---	---	
trans-1,2-Dichloroethene	1330	15.8	31.5	ug/kg dry	50	1260	ND	106	74-125%	---	---	
1,2-Dichloropropane	1320	15.8	31.5	ug/kg dry	50	1260	ND	104	76-123%	---	---	
1,3-Dichloropropane	1240	31.5	63.1	ug/kg dry	50	1260	ND	98	77-121%	---	---	
2,2-Dichloropropane	1250	31.5	63.1	ug/kg dry	50	1260	ND	99	67-133%	---	---	
1,1-Dichloropropene	1320	31.5	63.1	ug/kg dry	50	1260	ND	105	76-125%	---	---	
cis-1,3-Dichloropropene	1190	31.5	63.1	ug/kg dry	50	1260	ND	94	74-126%	---	---	
trans-1,3-Dichloropropene	1310	31.5	63.1	ug/kg dry	50	1260	ND	104	71-130%	---	---	
Hexachlorobutadiene	1260	63.1	126	ug/kg dry	50	1260	ND	100	61-135%	---	---	
Methylene chloride	1340	315	631	ug/kg dry	50	1260	ND	106	70-128%	---	---	
1,1,1,2-Tetrachloroethane	1430	15.8	31.5	ug/kg dry	50	1260	ND	113	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1310	31.5	63.1	ug/kg dry	50	1260	ND	104	70-124%	---	---	
Tetrachloroethene (PCE)	1250	15.8	31.5	ug/kg dry	50	1260	ND	99	73-128%	---	---	
1,2,3-Trichlorobenzene	1220	158	315	ug/kg dry	50	1260	ND	97	66-130%	---	---	
1,2,4-Trichlorobenzene	1200	158	315	ug/kg dry	50	1260	ND	95	67-129%	---	---	
1,1,1-Trichloroethane	1390	15.8	31.5	ug/kg dry	50	1260	ND	110	73-130%	---	---	
1,1,2-Trichloroethane	1290	15.8	31.5	ug/kg dry	50	1260	ND	102	78-121%	---	---	
Trichloroethene (TCE)	1330	15.8	31.5	ug/kg dry	50	1260	ND	105	77-123%	---	---	
Trichlorofluoromethane	1110	63.1	126	ug/kg dry	50	1260	ND	88	62-140%	---	---	Q-54a
1,2,3-Trichloropropane	1310	31.5	63.1	ug/kg dry	50	1260	ND	103	73-125%	---	---	
Vinyl chloride	1430	15.8	31.5	ug/kg dry	50	1260	ND	113	56-135%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 104 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*96 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*			*"*				

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100700 - EPA 3546							**Soil**					
Blank (0100700-BLK1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 07:53							**C-07**
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	**4.22**	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B
Aroclor 1242	**2.13**	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B-02, J
Aroclor 1248	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1262	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1268	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 111 %*		*Limits: 60-125 %*			*Dilution: 1x*				
LCS (0100700-BS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 08:10							**C-07**
EPA 8082A												
Aroclor 1016	196	2.00	4.00	ug/kg wet	1	250	---	79	47-134%	---	---	
Aroclor 1260	254	2.00	4.00	ug/kg wet	1	250	---	101	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 113 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Duplicate (0100700-DUP2)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 12:52							**C-07**
QC Source Sample: Non-SDG (A0J0358-02RE1)												
Aroclor 1016	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1221	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1232	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1242	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1248	**1350**	25.9	51.8	ug/kg dry	5	---	1130	---	---	18	30%	X
Aroclor 1254	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1260	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1262	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1268	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 60-125 %*			*Dilution: 5x*				
Matrix Spike (0100700-MS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 11:41							**C-07, Q-43**
QC Source Sample: Non-SDG (A0J0358-02RE1)												

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100700 - EPA 3546							**Soil**					
Matrix Spike (0100700-MS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 11:41							**C-07, Q-43**
QC Source Sample: Non-SDG (A0J0358-02RE1)												
EPA 8082A												
Aroclor 1016	959	25.5	51.0	ug/kg dry	5	255	ND	**376**	**47-134%**	---	---	
Aroclor 1260	299	25.5	51.0	ug/kg dry	5	255	ND	117	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*		*Limits: 60-125 %*			*Dilution: 5x*				

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100905-BLK2)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 19:39							**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 57 %*		*Limits: 42-129 %*		*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*109 %*		*55-130 %*		*"*					Q-41
LCS (0100905-BS3)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 19:57							**C-05**
EPA 8081B												
Aldrin	32.5	1.00	2.00	ug/kg wet	1	50.0	---	65	45-136%	---	---	
gamma-BHC (Lindane)	35.1	1.00	2.00	ug/kg wet	1	50.0	---	70	49-135%	---	---	
cis-Chlordane	36.6	1.00	2.00	ug/kg wet	1	50.0	---	73	54-133%	---	---	
trans-Chlordane	36.3	1.00	2.00	ug/kg wet	1	50.0	---	73	53-135%	---	---	
4,4'-DDD	44.5	1.00	2.00	ug/kg wet	1	50.0	---	89	56-139%	---	---	
4,4'-DDE	39.2	1.00	2.00	ug/kg wet	1	50.0	---	78	56-134%	---	---	
4,4'-DDT	45.2	1.00	2.00	ug/kg wet	1	50.0	---	90	50-141%	---	---	
Dieldrin	42.4	1.00	2.00	ug/kg wet	1	50.0	---	85	56-136%	---	---	
Endosulfan I	38.8	1.00	2.00	ug/kg wet	1	50.0	---	78	53-132%	---	---	
Endosulfan II	44.3	1.00	2.00	ug/kg wet	1	50.0	---	89	53-134%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0100905-BS3)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 19:57							**C-05**
Endosulfan sulfate	45.1	1.00	2.00	ug/kg wet	1	50.0	---	90	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 63 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*100 %*		*55-130 %*			*"*				
LCS (0100905-BS4)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 20:14							**C-05**
EPA 8081B												
cis-Nonachlor	42.8	1.00	2.00	ug/kg wet	1	50.0	---	86	68-121%	---	---	
2,4'-DDD	43.1	1.00	2.00	ug/kg wet	1	50.0	---	86	58-128%	---	---	
2,4'-DDE	36.5	1.00	2.00	ug/kg wet	1	50.0	---	73	49-125%	---	---	
2,4'-DDT	44.5	1.00	2.00	ug/kg wet	1	50.0	---	89	66-145%	---	---	
Oxychlordane	35.7	1.00	2.00	ug/kg wet	1	50.0	---	71	56-120%	---	---	
trans-Nonachlor	37.2	1.00	2.00	ug/kg wet	1	50.0	---	74	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 62 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*98 %*		*55-130 %*			*"*				
Duplicate (0100905-DUP2)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 20:48							**C-05**
QC Source Sample: T4RB-44L (A0J0503-02RE2)												
EPA 8081B												
Aldrin	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	2.59	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	2.59	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	**8.73**	1.30	2.59	ug/kg dry	1	---	22.5	---	---	**88**	**30%**	Q-05
Dieldrin	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	38.9	77.7	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	2.59	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100905-DUP2)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 20:48							**C-05**
QC Source Sample: T4RB-44L (A0J0503-02RE2)												
2,4'-DDT	**1.33**	1.30	2.59	ug/kg dry	1	---	3.29	---	---	**85**	**30%**	J, P-11
Oxychlordane	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 55 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*90 %*		*55-130 %*				*"*			
Matrix Spike (0100905-MS3)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 21:23							**C-05**
QC Source Sample: T4RB-49L (A0J0503-13RE2)												
EPA 8081B												
Aldrin	35.6	1.12	2.25	ug/kg dry	1	56.2	ND	63	45-136%	---	---	
gamma-BHC (Lindane)	33.9	1.12	2.25	ug/kg dry	1	56.2	ND	60	49-135%	---	---	
cis-Chlordane	43.0	1.12	2.25	ug/kg dry	1	56.2	ND	77	54-133%	---	---	
trans-Chlordane	43.0	1.12	2.25	ug/kg dry	1	56.2	ND	76	53-135%	---	---	
4,4'-DDD	50.3	1.12	2.25	ug/kg dry	1	56.2	ND	89	56-139%	---	---	
4,4'-DDE	45.7	1.12	2.25	ug/kg dry	1	56.2	ND	81	56-134%	---	---	
4,4'-DDT	51.3	1.12	2.25	ug/kg dry	1	56.2	ND	91	50-141%	---	---	
Dieldrin	49.2	1.12	2.25	ug/kg dry	1	56.2	ND	88	56-136%	---	---	
Endosulfan I	45.3	1.12	2.25	ug/kg dry	1	56.2	ND	81	53-132%	---	---	
Endosulfan II	50.0	1.12	2.25	ug/kg dry	1	56.2	ND	89	53-134%	---	---	
Endosulfan sulfate	52.8	1.12	2.25	ug/kg dry	1	56.2	ND	94	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 51 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*96 %*		*55-130 %*				*"*			
Matrix Spike (0100905-MS4)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 21:40							**C-05**
QC Source Sample: T4RB-49L (A0J0503-13RE2)												
EPA 8081B												
cis-Nonachlor	50.1	1.12	2.25	ug/kg dry	1	56.2	ND	89	68-121%	---	---	
2,4'-DDD	50.1	1.12	2.25	ug/kg dry	1	56.2	ND	89	58-128%	---	---	
2,4'-DDE	42.0	1.12	2.25	ug/kg dry	1	56.2	ND	75	49-125%	---	---	
2,4'-DDT	50.1	1.12	2.25	ug/kg dry	1	56.2	ND	89	66-145%	---	---	
Oxychlordane	38.1	1.12	2.25	ug/kg dry	1	56.2	ND	68	56-120%	---	---	
trans-Nonachlor	42.5	1.12	2.25	ug/kg dry	1	56.2	ND	76	60-120%	---	---	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100905-MS4)				Prepared: 10/23/20 07:03		Analyzed: 10/28/20 21:40						**C-05**
QC Source Sample: T4RB-49L (A0J0503-13RE2)												
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 47 %*	*Limits: 42-129 %*		*Dilution: 1x*						
Decachlorobiphenyl (Surr)			*99 %*	*55-130 %*		*"*						

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100712 - EPA 3546							**Soil**					
Blank (0100712-BLK1)			Prepared: 10/21/20 10:52 Analyzed: 10/21/20 14:45									
EPA 8270E												
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	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	18.7	37.5	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 98 %*	*Limits: 37-122 %*			*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*85 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*89 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*95 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*87 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*90 %*	*39-132 %*			*"*					
LCS (0100712-BS1)			Prepared: 10/21/20 10:52 Analyzed: 10/21/20 15:21									**Q-18**
EPA 8270E												
Acenaphthene	488	2.66	5.34	ug/kg wet	2	533	---	92	40-123%	---	---	
Acenaphthylene	518	2.66	5.34	ug/kg wet	2	533	---	97	32-132%	---	---	
Anthracene	479	2.66	5.34	ug/kg wet	2	533	---	90	47-123%	---	---	
Benz(a)anthracene	491	2.66	5.34	ug/kg wet	2	533	---	92	49-126%	---	---	
Benzo(a)pyrene	500	4.00	8.00	ug/kg wet	2	533	---	94	45-129%	---	---	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100712 - EPA 3546							**Soil**					
LCS (0100712-BS1)			Prepared: 10/21/20 10:52	Analyzed: 10/21/20 15:21								**Q-18**
Benzo(b)fluoranthene	498	4.00	8.00	ug/kg wet	2	533	---	93	45-132%	---	---	
Benzo(k)fluoranthene	469	4.00	8.00	ug/kg wet	2	533	---	88	47-132%	---	---	
Benzo(g,h,i)perylene	454	2.66	5.34	ug/kg wet	2	533	---	85	43-134%	---	---	
Chrysene	495	2.66	5.34	ug/kg wet	2	533	---	93	50-124%	---	---	
Dibenz(a,h)anthracene	450	2.66	5.34	ug/kg wet	2	533	---	84	45-134%	---	---	
Fluoranthene	470	2.66	5.34	ug/kg wet	2	533	---	88	50-127%	---	---	
Fluorene	465	2.66	5.34	ug/kg wet	2	533	---	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	437	2.66	5.34	ug/kg wet	2	533	---	82	45-133%	---	---	
1-Methylnaphthalene	485	5.34	10.7	ug/kg wet	2	533	---	91	40-120%	---	---	
2-Methylnaphthalene	489	5.34	10.7	ug/kg wet	2	533	---	92	38-122%	---	---	
Naphthalene	470	5.34	10.7	ug/kg wet	2	533	---	88	35-123%	---	---	
Phenanthrene	446	2.66	5.34	ug/kg wet	2	533	---	84	50-121%	---	---	
Pyrene	473	2.66	5.34	ug/kg wet	2	533	---	89	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	566	40.0	80.0	ug/kg wet	2	533	---	106	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*	*Limits: 37-122 %*			*Dilution: 2x*					
2-Fluorobiphenyl (Surr)			*90 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*96 %*	*33-122 %*			*"*					
p-Terphenyl-d14 (Surr)			*98 %*	*54-127 %*			*"*					
2-Fluorophenol (Surr)			*93 %*	*35-120 %*			*"*					
2,4,6-Tribromophenol (Surr)			*100 %*	*39-132 %*			*"*					
Duplicate (0100712-DUP1)			Prepared: 10/21/20 10:52	Analyzed: 10/21/20 16:33								
QC Source Sample: Non-SDG (A0J0312-01)												
Acenaphthene	**156**	57.2	115	ug/kg dry	40	---	172	---	---	10	30%	
Acenaphthylene	ND	57.2	115	ug/kg dry	40	---	ND	---	---	---	30%	
Anthracene	**145**	57.2	115	ug/kg dry	40	---	156	---	---	7	30%	
Benz(a)anthracene	**1100**	57.2	115	ug/kg dry	40	---	1190	---	---	7	30%	
Benzo(a)pyrene	**1790**	86.0	172	ug/kg dry	40	---	1910	---	---	6	30%	
Benzo(b)fluoranthene	**2090**	86.0	172	ug/kg dry	40	---	2100	---	---	0.3	30%	
Benzo(k)fluoranthene	**691**	86.0	172	ug/kg dry	40	---	718	---	---	4	30%	M-05
Benzo(g,h,i)perylene	**1190**	57.2	115	ug/kg dry	40	---	1270	---	---	7	30%	
Chrysene	**1280**	57.2	115	ug/kg dry	40	---	1350	---	---	6	30%	
Dibenz(a,h)anthracene	**249**	57.2	115	ug/kg dry	40	---	264	---	---	6	30%	
Fluoranthene	**1640**	57.2	115	ug/kg dry	40	---	1810	---	---	10	30%	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100712 - EPA 3546							**Soil**					
Duplicate (0100712-DUP1)			Prepared: 10/21/20 10:52 Analyzed: 10/21/20 16:33									
QC Source Sample: Non-SDG (A0J0312-01)												
Fluorene	ND	57.2	115	ug/kg dry	40	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	**1110**	57.2	115	ug/kg dry	40	---	1200	---	---	8	30%	
1-Methylnaphthalene	ND	115	229	ug/kg dry	40	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	115	229	ug/kg dry	40	---	ND	---	---	---	30%	
Naphthalene	ND	115	229	ug/kg dry	40	---	ND	---	---	---	30%	
Phenanthrene	**693**	57.2	115	ug/kg dry	40	---	733	---	---	5	30%	
Pyrene	**1580**	57.2	115	ug/kg dry	40	---	1710	---	---	8	30%	
Bis(2-ethylhexyl)phthalate	ND	860	1720	ug/kg dry	40	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 37-122 %*			*Dilution: 40x*					S-05
2-Fluorobiphenyl (Surr)			*70 %*	*44-120 %*			*"*					S-05
Phenol-d6 (Surr)			*46 %*	*33-122 %*			*"*					S-05
p-Terphenyl-d14 (Surr)			*80 %*	*54-127 %*			*"*					S-05
2-Fluorophenol (Surr)			*47 %*	*35-120 %*			*"*					S-05
2,4,6-Tribromophenol (Surr)			*75 %*	*39-132 %*			*"*					S-05

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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 0100765 - EPA 3546							**Soil**					
Blank (0100765-BLK2)			Prepared: 10/22/20 10:45 Analyzed: 10/22/20 17:09									
EPA 8270E												
Acenaphthene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	17.6	35.3	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 75 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*69 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*64 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*84 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*68 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*69 %*		*39-132 %*			*"*				
LCS (0100765-BS2)			Prepared: 10/22/20 10:45 Analyzed: 10/22/20 17:45									**Q-18**
EPA 8270E												
Acenaphthene	441	2.66	5.34	ug/kg wet	2	533	---	83	40-123%	---	---	
Acenaphthylene	474	2.66	5.34	ug/kg wet	2	533	---	89	32-132%	---	---	
Anthracene	449	2.66	5.34	ug/kg wet	2	533	---	84	47-123%	---	---	
Benz(a)anthracene	487	2.66	5.34	ug/kg wet	2	533	---	91	49-126%	---	---	
Benzo(a)pyrene	499	4.00	8.00	ug/kg wet	2	533	---	94	45-129%	---	---	
Benzo(b)fluoranthene	490	4.00	8.00	ug/kg wet	2	533	---	92	45-132%	---	---	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100765 - EPA 3546							**Soil**					
LCS (0100765-BS2)			Prepared: 10/22/20 10:45		Analyzed: 10/22/20 17:45							**Q-18**
Benzo(k)fluoranthene	466	4.00	8.00	ug/kg wet	2	533	---	87	47-132%	---	---	
Benzo(g,h,i)perylene	440	2.66	5.34	ug/kg wet	2	533	---	83	43-134%	---	---	
Chrysene	477	2.66	5.34	ug/kg wet	2	533	---	89	50-124%	---	---	
Dibenz(a,h)anthracene	453	2.66	5.34	ug/kg wet	2	533	---	85	45-134%	---	---	
Fluoranthene	488	2.66	5.34	ug/kg wet	2	533	---	92	50-127%	---	---	
Fluorene	433	2.66	5.34	ug/kg wet	2	533	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	437	2.66	5.34	ug/kg wet	2	533	---	82	45-133%	---	---	
2-Methylnaphthalene	467	5.34	10.7	ug/kg wet	2	533	---	88	38-122%	---	---	
Naphthalene	434	5.34	10.7	ug/kg wet	2	533	---	81	35-123%	---	---	
Phenanthrene	432	2.66	5.34	ug/kg wet	2	533	---	81	50-121%	---	---	
Pyrene	488	2.66	5.34	ug/kg wet	2	533	---	92	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	573	40.0	80.0	ug/kg wet	2	533	---	107	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 89 %*		*Limits: 37-122 %*				*Dilution: 2x*			
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*86 %*		*33-122 %*				*"*			
p-Terphenyl-d14 (Surr)			*94 %*		*54-127 %*				*"*			
2-Fluorophenol (Surr)			*84 %*		*35-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*89 %*		*39-132 %*				*"*			
Duplicate (0100765-DUP2)			Prepared: 10/22/20 10:45		Analyzed: 10/22/20 18:58							
QC Source Sample: T4RB-43U (A0J0503-06)												
EPA 8270E												
Acenaphthene	**301**	56.1	113	ug/kg dry	40	---	764	---	---	**87**	**30%**	Q-04
Acenaphthylene	**92.8**	56.1	113	ug/kg dry	40	---	151	---	---	**47**	**30%**	Q-04, J
Anthracene	**405**	56.1	113	ug/kg dry	40	---	838	---	---	**70**	**30%**	Q-04
Benz(a)anthracene	**2700**	56.1	113	ug/kg dry	40	---	6460	---	---	**82**	**30%**	Q-04
Benzo(a)pyrene	**4060**	84.4	169	ug/kg dry	40	---	10000	---	---	**84**	**30%**	Q-04
Benzo(b)fluoranthene	**5420**	84.4	169	ug/kg dry	40	---	13000	---	---	**82**	**30%**	Q-04
Benzo(k)fluoranthene	**1990**	84.4	169	ug/kg dry	40	---	4060	---	---	**68**	**30%**	M-05, Q-04
Benzo(g,h,i)perylene	**3060**	56.1	113	ug/kg dry	40	---	7210	---	---	**81**	**30%**	Q-04
Chrysene	**3360**	56.1	113	ug/kg dry	40	---	8130	---	---	**83**	**30%**	Q-04
Dibenz(a,h)anthracene	**689**	56.1	113	ug/kg dry	40	---	1480	---	---	**73**	**30%**	Q-04
Fluoranthene	**4580**	56.1	113	ug/kg dry	40	---	10500	---	---	**78**	**30%**	Q-04
Fluorene	**130**	56.1	113	ug/kg dry	40	---	334	---	---	**88**	**30%**	Q-04

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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 0100765 - EPA 3546							**Soil**					
Duplicate (0100765-DUP2)			Prepared: 10/22/20 10:45 Analyzed: 10/22/20 18:58									
QC Source Sample: T4RB-43U (A0J0503-06)												
Indeno(1,2,3-cd)pyrene	**3030**	56.1	113	ug/kg dry	40	---	7020	---	---	**79**	**30%**	Q-04
2-Methylnaphthalene	**116**	113	225	ug/kg dry	40	---	187	---	---	**47**	**30%**	Q-04, J
Naphthalene	**277**	113	225	ug/kg dry	40	---	423	---	---	**42**	**30%**	Q-04
Phenanthrene	**2050**	56.1	113	ug/kg dry	40	---	4840	---	---	**81**	**30%**	Q-04
Pyrene	**4220**	56.1	113	ug/kg dry	40	---	9470	---	---	**77**	**30%**	Q-04
Bis(2-ethylhexyl)phthalate	ND	844	1690	ug/kg dry	40	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 49 %*	*Limits: 37-122 %*			*Dilution: 40x*					S-05
2-Fluorobiphenyl (Surr)			*64 %*	*44-120 %*			*"*					S-05
Phenol-d6 (Surr)			*22 %*	*33-122 %*			*"*					S-05
p-Terphenyl-d14 (Surr)			*93 %*	*54-127 %*			*"*					S-05
2-Fluorophenol (Surr)			*38 %*	*35-120 %*			*"*					S-05
2,4,6-Tribromophenol (Surr)			*87 %*	*39-132 %*			*"*					S-05

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100767 - EPA 3051A							**Soil**					
Blank (0100767-BLK1)			Prepared: 10/22/20 11:02 Analyzed: 10/23/20 20:40									
EPA 6020A												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (0100767-BS1)			Prepared: 10/22/20 11:02 Analyzed: 10/23/20 20:45									
EPA 6020A												
Arsenic	51.3	0.500	1.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Cadmium	51.0	0.100	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Copper	52.3	1.00	2.00	mg/kg wet	10	50.0	---	105	80-120%	---	---	
Lead	51.4	0.100	0.200	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Mercury	0.991	0.0400	0.0800	mg/kg wet	10	1.00	---	99	80-120%	---	---	
Zinc	51.3	2.00	4.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Duplicate (0100767-DUP1)			Prepared: 10/22/20 11:02 Analyzed: 10/23/20 21:09									
QC Source Sample: T4RB-46L (A0J0503-04)												
EPA 6020A												
Arsenic	**2.99**	0.553	1.11	mg/kg dry	10	---	3.17	---	---	6	20%	
Cadmium	**0.599**	0.111	0.221	mg/kg dry	10	---	0.561	---	---	7	20%	
Copper	**15.2**	1.11	2.21	mg/kg dry	10	---	14.8	---	---	3	20%	
Lead	**16.6**	0.111	0.221	mg/kg dry	10	---	14.0	---	---	17	20%	
Mercury	ND	0.0442	0.0884	mg/kg dry	10	---	ND	---	---	---	20%	
Zinc	**119**	2.21	4.42	mg/kg dry	10	---	106	---	---	12	20%	
Matrix Spike (0100767-MS1)			Prepared: 10/22/20 11:02 Analyzed: 10/23/20 21:14									
QC Source Sample: T4RB-46L (A0J0503-04)												
EPA 6020A												
Arsenic	60.8	0.586	1.17	mg/kg dry	10	58.6	3.17	98	75-125%	---	---	
Cadmium	57.9	0.117	0.234	mg/kg dry	10	58.6	0.561	98	75-125%	---	---	
Copper	75.8	1.17	2.34	mg/kg dry	10	58.6	14.8	104	75-125%	---	---	

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100767 - EPA 3051A							**Soil**					
Matrix Spike (0100767-MS1)			Prepared: 10/22/20 11:02		Analyzed: 10/23/20 21:14							
QC Source Sample: T4RB-46L (A0J0503-04)												
Lead	73.6	0.117	0.234	mg/kg dry	10	58.6	14.0	102	75-125%	---	---	
Mercury	1.16	0.0469	0.0937	mg/kg dry	10	1.17	ND	99	75-125%	---	---	
Zinc	173	2.34	4.69	mg/kg dry	10	58.6	106	115	75-125%	---	---	

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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 0100549 - Total Solids (Dry Weight)							Soil					
Duplicate (0100549-DUP1)			Prepared: 10/16/20 09:34		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0154-03)												
% Solids	**85.4**	1.00	1.00	%	1	---	84.8	---	---	0.8	10%	
Duplicate (0100549-DUP2)			Prepared: 10/16/20 09:34		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0444-05)												
% Solids	**93.1**	1.00	1.00	%	1	---	92.7	---	---	0.4	10%	
Duplicate (0100549-DUP3)			Prepared: 10/16/20 09:34		Analyzed: 10/19/20 09:22							
QC Source Sample: T4RB-44L (A0J0503-02)												
EPA 8000D												
% Solids	**75.2**	1.00	1.00	%	1	---	74.8	---	---	0.6	10%	
Duplicate (0100549-DUP4)			Prepared: 10/16/20 09:34		Analyzed: 10/19/20 09:22							
QC Source Sample: T4RB-45U-OD3 (A0J0503-11)												
EPA 8000D												
% Solids	**93.9**	1.00	1.00	%	1	---	93.7	---	---	0.2	10%	
Duplicate (0100549-DUP5)			Prepared: 10/16/20 09:34		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0532-02)												
% Solids	**70.9**	1.00	1.00	%	1	---	77.1	---	---	8	10%	
Duplicate (0100549-DUP6)			Prepared: 10/16/20 09:34		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0562-03)												
% Solids	**95.3**	1.00	1.00	%	1	---	94.8	---	---	0.5	10%	
Duplicate (0100549-DUP7)			Prepared: 10/16/20 19:03		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0606-01)												
% Solids	**65.1**	1.00	1.00	%	1	---	67.1	---	---	3	10%	
Duplicate (0100549-DUP8)			Prepared: 10/16/20 19:51		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0619-02)												

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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 0100549 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100549-DUP8)			Prepared: 10/16/20 19:51		Analyzed: 10/19/20 09:22							
QC Source Sample: Non-SDG (A0J0619-02)												
% Solids	**82.5**	1.00	1.00	%	1	---	82.6	---	---	0.08	10%	

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

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Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0720 - EPA 3546 (Microwave)							**Solid**					
Blank (BIJ0720-BLK1)			Prepared: 10/23/20 15:05 Analyzed: 11/09/20 10:51									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.450	3.86	ug/kg wet	1	---	---	---	---	---	---	U
Surr: Tripentyltin			*Recovery: 75.9 %*	*Limits: 30-160 %*			*Dilution: 1x*					
Tripropyltin			*69.8 %*	*30-160 %*			*"*					
LCS (BIJ0720-BS1)			Prepared: 10/23/20 15:05 Analyzed: 11/09/20 11:08									
EPA 8270E-SIM												
Tributyltin Ion	37.3	0.450	3.86	ug/kg wet	1	44.554	---	83.7	30-160%	---	---	
Surr: Tripentyltin			*Recovery: 82.0 %*	*Limits: 30-160 %*			*Dilution: 1x*					
Tripropyltin			*77.0 %*	*30-160 %*			*"*					

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100667							
A0J0503-01	Soil	NWTPH-Dx	10/12/20 11:00	10/20/20 12:45	10.54g/5mL	10g/5mL	0.95
A0J0503-02	Soil	NWTPH-Dx	10/12/20 11:35	10/20/20 12:45	10.26g/5mL	10g/5mL	0.98
A0J0503-03	Soil	NWTPH-Dx	10/12/20 12:10	10/20/20 12:45	10.22g/5mL	10g/5mL	0.98
A0J0503-04	Soil	NWTPH-Dx	10/12/20 12:40	10/20/20 12:45	10.6g/5mL	10g/5mL	0.94
A0J0503-05	Soil	NWTPH-Dx	10/12/20 13:10	10/20/20 12:45	10.54g/5mL	10g/5mL	0.95
A0J0503-06	Soil	NWTPH-Dx	10/12/20 14:15	10/20/20 12:45	10.66g/5mL	10g/5mL	0.94
A0J0503-07	Soil	NWTPH-Dx	10/12/20 14:45	10/20/20 12:45	10.91g/5mL	10g/5mL	0.92
A0J0503-08	Soil	NWTPH-Dx	10/12/20 00:00	10/20/20 12:45	10.36g/5mL	10g/5mL	0.97
A0J0503-10	Soil	NWTPH-Dx	10/13/20 12:45	10/20/20 12:45	10.49g/5mL	10g/5mL	0.95
A0J0503-11	Soil	NWTPH-Dx	10/13/20 13:15	10/20/20 12:45	10.5g/5mL	10g/5mL	0.95
A0J0503-13	Soil	NWTPH-Dx	10/13/20 14:15	10/20/20 12:45	10.63g/5mL	10g/5mL	0.94
A0J0503-14	Soil	NWTPH-Dx	10/13/20 11:45	10/20/20 12:45	10.69g/5mL	10g/5mL	0.94

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100754							
A0J0503-02	Soil	5035A/8260D	10/12/20 11:35	10/12/20 11:35	5.23g/5mL	5g/5mL	0.96
A0J0503-13	Soil	5035A/8260D	10/13/20 14:15	10/13/20 14:15	4.93g/5mL	5g/5mL	1.01

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100700							
A0J0503-02	Soil	EPA 8082A	10/12/20 11:35	10/21/20 10:03	10.11g/2mL	10g/2mL	0.99
A0J0503-13	Soil	EPA 8082A	10/13/20 14:15	10/21/20 10:03	10.22g/2mL	10g/2mL	0.98

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100905							
A0J0503-02RE2	Soil	EPA 8081B	10/12/20 11:35	10/23/20 07:03	10.24g/10mL	10g/5mL	1.95
A0J0503-13RE2	Soil	EPA 8081B	10/13/20 14:15	10/23/20 07:03	10.46g/10mL	10g/5mL	1.91

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

SAMPLE PREPARATION INFORMATION

Organochlorine Pesticides by EPA 8081B

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100712							
A0J0503-01RE1	Soil	EPA 8270E	10/12/20 11:00	10/21/20 10:52	15.12g/2mL	15g/2mL	0.99
A0J0503-02RE1	Soil	EPA 8270E	10/12/20 11:35	10/21/20 10:52	15.01g/2mL	15g/2mL	1.00
A0J0503-03	Soil	EPA 8270E	10/12/20 12:10	10/21/20 10:52	15.01g/2mL	15g/2mL	1.00
A0J0503-04	Soil	EPA 8270E	10/12/20 12:40	10/21/20 10:52	15.05g/2mL	15g/2mL	1.00
A0J0503-05	Soil	EPA 8270E	10/12/20 13:10	10/21/20 10:52	15.01g/2mL	15g/2mL	1.00
A0J0503-10	Soil	EPA 8270E	10/13/20 12:45	10/21/20 10:52	15.12g/2mL	15g/2mL	0.99
A0J0503-14	Soil	EPA 8270E	10/13/20 11:45	10/21/20 10:52	15.1g/5mL	15g/2mL	2.48
Batch: 0100765							
A0J0503-06	Soil	EPA 8270E	10/12/20 14:15	10/22/20 10:45	15.49g/2mL	15g/2mL	0.97
A0J0503-07	Soil	EPA 8270E	10/12/20 14:45	10/22/20 10:45	16.19g/2mL	15g/2mL	0.93
A0J0503-08	Soil	EPA 8270E	10/12/20 00:00	10/22/20 10:45	15.68g/2mL	15g/2mL	0.96
A0J0503-11RE1	Soil	EPA 8270E	10/13/20 13:15	10/22/20 10:45	15.57g/2mL	15g/2mL	0.96
A0J0503-13RE2	Soil	EPA 8270E	10/13/20 14:15	10/22/20 10:45	15.28g/2mL	15g/2mL	0.98

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100767							
A0J0503-01	Soil	EPA 6020A	10/12/20 11:00	10/22/20 11:02	0.48g/50mL	0.5g/50mL	1.04
A0J0503-02	Soil	EPA 6020A	10/12/20 11:35	10/22/20 11:02	0.484g/50mL	0.5g/50mL	1.03
A0J0503-03	Soil	EPA 6020A	10/12/20 12:10	10/22/20 11:02	0.45g/50mL	0.5g/50mL	1.11
A0J0503-04	Soil	EPA 6020A	10/12/20 12:40	10/22/20 11:02	0.485g/50mL	0.5g/50mL	1.03
A0J0503-05	Soil	EPA 6020A	10/12/20 13:10	10/22/20 11:02	0.457g/50mL	0.5g/50mL	1.09
A0J0503-06	Soil	EPA 6020A	10/12/20 14:15	10/22/20 11:02	0.485g/50mL	0.5g/50mL	1.03
A0J0503-06RE1	Soil	EPA 6020A	10/12/20 14:15	10/22/20 11:02	0.485g/50mL	0.5g/50mL	1.03
A0J0503-07	Soil	EPA 6020A	10/12/20 14:45	10/22/20 11:02	0.491g/50mL	0.5g/50mL	1.02
A0J0503-08	Soil	EPA 6020A	10/12/20 00:00	10/22/20 11:02	0.515g/50mL	0.5g/50mL	0.97
A0J0503-10	Soil	EPA 6020A	10/13/20 12:45	10/22/20 11:02	0.469g/50mL	0.5g/50mL	1.07
A0J0503-10RE1	Soil	EPA 6020A	10/13/20 12:45	10/22/20 11:02	0.469g/50mL	0.5g/50mL	1.07
A0J0503-11	Soil	EPA 6020A	10/13/20 13:15	10/22/20 11:02	0.471g/50mL	0.5g/50mL	1.06
A0J0503-13	Soil	EPA 6020A	10/13/20 14:15	10/22/20 11:02	0.496g/50mL	0.5g/50mL	1.01

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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100549							
A0J0503-01	Soil	EPA 8000D	10/12/20 11:00	10/16/20 09:34			NA
A0J0503-02	Soil	EPA 8000D	10/12/20 11:35	10/16/20 09:34			NA
A0J0503-03	Soil	EPA 8000D	10/12/20 12:10	10/16/20 09:34			NA
A0J0503-04	Soil	EPA 8000D	10/12/20 12:40	10/16/20 09:34			NA
A0J0503-05	Soil	EPA 8000D	10/12/20 13:10	10/16/20 09:34			NA
A0J0503-06	Soil	EPA 8000D	10/12/20 14:15	10/16/20 09:34			NA
A0J0503-07	Soil	EPA 8000D	10/12/20 14:45	10/16/20 09:34			NA
A0J0503-08	Soil	EPA 8000D	10/12/20 00:00	10/16/20 09:34			NA
A0J0503-10	Soil	EPA 8000D	10/13/20 12:45	10/16/20 09:34			NA
A0J0503-11	Soil	EPA 8000D	10/13/20 13:15	10/16/20 09:34			NA
A0J0503-13	Soil	EPA 8000D	10/13/20 14:15	10/16/20 09:34			NA
A0J0503-14	Soil	EPA 8000D	10/13/20 11:45	10/16/20 09:34			NA

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Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Butyl Tins

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0720							
A0J0503-02	Soil	EPA 8270E-SIM	10/12/20 11:35	10/26/20 09:30	6.79g/0.5mL	5g/0.5mL	0.74
A0J0503-13	Soil	EPA 8270E-SIM	10/13/20 14:15	10/26/20 09:30	6.11g/0.5mL	5g/0.5mL	0.82

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QUALIFIER DEFINITIONS

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

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B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
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-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
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-15	Results for diesel are estimated due to overlap from the reported oil result.
F-16	Results for oil are estimated due to overlap from the reported diesel result.
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-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
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-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
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-43	Matrix Spike recovery is not applicable due to interfering Aroclor(s) in source sample.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. 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 +5%. The results are reported as Estimated Values.
Q-56	Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
X	See Case Narrative.

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project:	**POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number:	**2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager:	**Steve Misner**	**A0J0503 - 12 07 20 1438**

Analytical Resources, Inc.

U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

Apex Laboratories



Darrell Auvil, Project Manager

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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



Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

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.

Apex Laboratories



Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



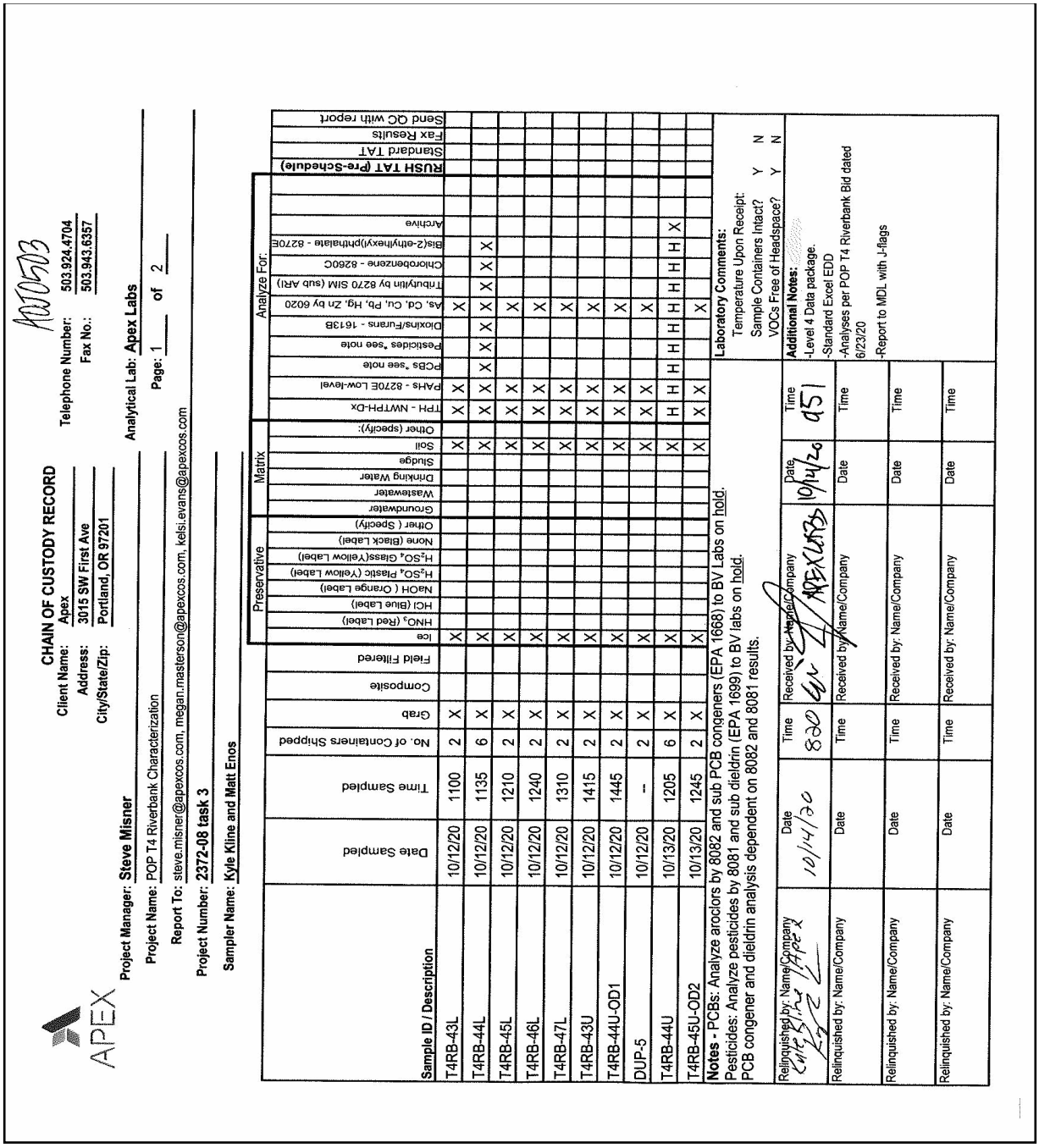
Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**



CHAIN OF CUSTODY RECORD

Client Name: Apex
Address: 3015 SW First Ave
City/State/Zip: Portland, OR 97201
Telephone Number: 503.924.4704
Fax No.: 503.943.6357

Project Manager: Steve Misner
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos
Analytical Lab: Apex Labs
Page: 1 of 2

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs "see note	Pesticides "see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributylin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-43L	10/12/20	1100	2	X			X												X		X	X	X										
T4RB-44L	10/12/20	1135	6	X															X		X	X	X		X	X	X	X	X				
T4RB-45L	10/12/20	1210	2	X			X												X		X	X	X			X							
T4RB-46L	10/12/20	1240	2	X			X												X		X	X	X			X							
T4RB-47L	10/12/20	1310	2	X			X												X		X	X	X			X							
T4RB-43U	10/12/20	1415	2	X			X												X		X	X	X			X							
T4RB-44U-OD1	10/12/20	1445	2	X			X												X		X	X	X			X							
DUP-5	10/12/20	-	2	X			X												X		X	X	X			X							
T4RB-44U	10/13/20	1205	6	X															X		H	H	H	H	H	H	H	H	X				
T4RB-45U-OD2	10/13/20	1245	2	X			X												X		X	X	X			X							

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date 10/14/20	Time 830	Received by: Name/Company	Date 10/14/20	Time 0951
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

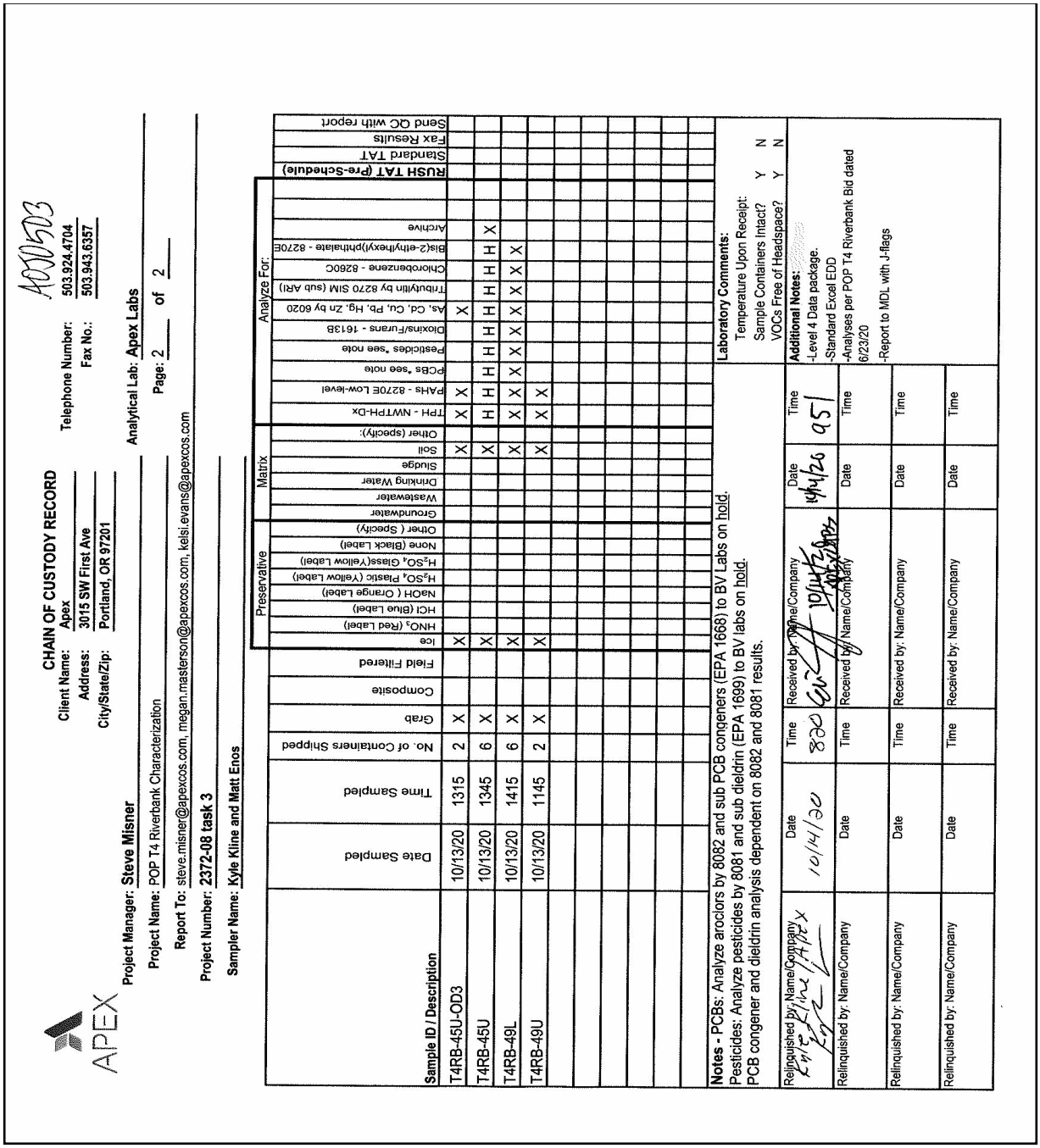
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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**



APEX

CHAIN OF CUSTODY RECORD

Client Name: Apex
Address: 3015 SW First Ave
City/State/Zip: Portland, OR 97201
Telephone Number: 503.924.4704
Fax No.: 503.943.6357

Analytical Lab: **Apex Labs**

Page: 2 of 2

Project Manager: **Steve Misner**
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: **2372-08 task 3**
Sampler Name: **Kyle Kline and Matt Enos**

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs "see note	Pesticides "see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributylin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-45U-OD3	10/13/20	1315	2	X			X												X		X	X				X							
T4RB-45U	10/13/20	1345	6	X			X												X		H	H				H							
T4RB-49L	10/13/20	1415	6	X			X												X		X	X				X							
T4RB-49U	10/13/20	1145	2	X			X												X		X	X				X							

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
[illegible]	10/14/20	830	[illegible]	10/14/20	951
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0503 - 12 07 20 1438**

APEX LABS COOLER RECEIPT FORM

Client: Apex Companies Element WO#: A0 J0503

Project/Project #: POP T4 Riverbank Characterization 2372-08 task 3

Delivery Info:

Date/time received: 10/14/20 @ 951 By: EJ

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

Cooler Inspection Date/time inspected: 10/14/20 @ 1025 By: EJ

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	1.4	2.3					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	Y	Y					
Ice type: (Gel/Real/Other)	Real	Real					
Condition:	Good	Good					

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

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

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

Samples Inspection: Date/time inspected: 10/14/20 @ 1605 By: VM

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: T on T4RB-49U conts read 1445.

COC/container discrepancies form initiated? Yes ___ No X

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

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

Comments ___

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

Comments: ___

Additional information: ___

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

Analytical Resources, Incorporated
Analytical Chemists and Consultants

13 January 2021

Darrell Auvil
Apex Laboratories LLC
12232 SW Garden Place
Tigard, OR 97223

RE: A0J0503

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20J0291	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

SUBCONTRACT ORDER

Apex Laboratories

20J0291 OB 10/14/20 **A0J0503** JS

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

Sample Name: A0J0503-02 **Soil** **Sampled: 10/12/20 11:35** (T4RB-44L)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	OB 10/14 ~~10/27/20~~ 17:00 11/3/20	10/26/20 11:35	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Sample Name: A0J0503-13 **Soil** **Sampled: 10/13/20 14:15** (T4RB-49L)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	OB 10/14 ~~10/27/20~~ 17:00 11/3/20	10/27/20 14:15	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

Standard TAT

Tracking#: 1ZX4720R0194817959 ES

Released By	10/9/20 Date	UPS (Shipper) Received By	Date
UPS (Shipper) Released By	Date	Jacob Walthy Received By	10/10/2020 1104 Date

Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A0J0503-02	20J0291-01	Solid	12-Oct-2020 11:35	20-Oct-2020 11:04
A0J0503-13	20J0291-02	Solid	13-Oct-2020 14:15	20-Oct-2020 11:04

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4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received 20-Oct-2020 11:04 under ARI work order 20J0291. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The samples were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

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4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex Project Name: A0J0503

COC No(s): (NA) Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: 20J0291 Tracking No: 1ZX472OR0194817959 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? (YES) NO

Were custody papers included with the cooler? (YES) NO

Were custody papers properly filled out (ink, signed, etc.) (YES) NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1104 1.2

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: DOO 5206

Cooler Accepted by: JG Date: 10/20/2020 Time: 1104

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? (YES) NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: Trash bag

Was sufficient ice used (if appropriate)? NA (YES) NO

How were bottles sealed in plastic bags? Individually Grouped (Not)

Did all bottles arrive in good condition (unbroken)? (YES) NO

Were all bottle labels complete and legible? (YES) NO

Did the number of containers listed on COC match with the number of containers received? (YES) NO

Did all bottle labels and tags agree with custody papers? (YES) NO

Were all bottles used correct for the requested analyses? (YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) (NA) YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? (YES) NO

Date VOC Trip Blank was made at ARI (NA)

Were the sample(s) split by ARI? (NA) YES Date/Time: Equipment: Split by:

Samples Logged by: JG Date: 10/20/2020 Time: 1209 Labels checked by: JG

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

A0J0503-02

20J0291-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/12/2020 11:35

Instrument: NT8 Analyst: JZ — Analyzed: 11/09/2020 11:24

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0291-01 A 01
	Preparation Batch: BIJ0720	Sample Size: 6.79 g (wet)	Dry Weight:5.02 g
	Prepared: 10/26/2020	Final Volume: 0.5 mL	% Solids: 73.86
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0291-01 A 01
	Cleanup Batch: CIK0062	Initial Volume: 0.5 mL	
	Cleaned: 06-Nov-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.449	3.85	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*65.7*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*51.9*	*%*	

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.

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

A0J0503-13

20J0291-02 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/13/2020 14:15
Instrument: NT8 Analyst: JZ — Analyzed: 11/09/2020 11:41

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0291-02 A 01
	Preparation Batch: BIJ0720	Sample Size: 6.11 g (wet)	Dry Weight:5.06 g
	Prepared: 10/26/2020	Final Volume: 0.5 mL	% Solids: 82.79
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0291-02 A 01
	Cleanup Batch: CIK0062	Initial Volume: 0.5 mL	
	Cleaned: 06-Nov-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.445	3.82	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*67.2*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*51.2*	*%*	

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.

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Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

Butyl Tins - Quality Control

Batch BIJ0720 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0720-BLK1)				Prepared: 23-Oct-2020 Analyzed: 09-Nov-2020 10:51							
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Surrogate: Tripentyltin	34.3			ug/kg	*45.2*		*75.9*	*30-160*			
Surrogate: Tripropyltin	30.5			ug/kg	*43.7*		*69.8*	*30-160*			
LCS (BIJ0720-BS1)				Prepared: 23-Oct-2020 Analyzed: 09-Nov-2020 11:08							
Tributyltin Ion	37.3	0.450	3.86	ug/kg	44.6		83.7	30-160			
Surrogate: Tripentyltin	37.0			ug/kg	*45.2*		*82.0*	*30-160*			
Surrogate: Tripropyltin	33.7			ug/kg	*43.7*		*77.0*	*30-160*			

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Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Butyltin Ion	WADOE
Butyltin Ion	
Butyltin Ion	WADOE
Butyltin Ion	WADOE

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Apex Laboratories LLC	Project: A0J0503	
12232 SW Garden Place	Project Number: A0J0503	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	13-Jan-2021 10:33

Notes and Definitions

U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Your Project #: A0J0503
Your C.O.C. #: na

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2021/01/08
Report #: R6474432
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C0R6852
Received: 2020/10/21, 13:03

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	2	2020/11/09	2020/11/15	BRL SOP-00410	EPA 1613B m
Moisture	2	N/A	2020/10/22	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides in Soil by GCTQ	1	2020/12/23	2021/01/04	BRL SOP-00014	EPA Method 1699m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bvlabs.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NYH273	NYH274			
Sampling Date		2020/10/12 11:35	2020/10/13 14:15			
COC Number		na	na			
	UNITS	T4RB-44L	T4RB-49L	RDL	MDL	QC Batch
Moisture	%	29	21	1.0	0.50	7015665
Dieldrin	ng/g	0.033 U	N/A	0.068	0.033	7124581
Surrogate Recovery (%)						
13C10-cis Nonachlor	%	52	N/A	N/A	N/A	7124581
13C10-Heptachlor	%	92	N/A	N/A	N/A	7124581
13C10-Heptachlor Epoxide	%	78	N/A	N/A	N/A	7124581
13C10-Oxychlordane	%	78	N/A	N/A	N/A	7124581
13C10-trans Nonachlor	%	69	N/A	N/A	N/A	7124581
13C12-Endrin	%	74	N/A	N/A	N/A	7124581
13C12-Endrin Ketone	%	32 (1)	N/A	N/A	N/A	7124581
13C6-beta BHC	%	77	N/A	N/A	N/A	7124581
13C6-d6-gamma BHC (Lindane)	%	75	N/A	N/A	N/A	7124581
13C-Methoxychlor	%	65	N/A	N/A	N/A	7124581
13C-pp-DDD	%	46	N/A	N/A	N/A	7124581
13C-pp-DDE	%	56	N/A	N/A	N/A	7124581
13C-pp-DDT	%	33	N/A	N/A	N/A	7124581
C13-Hexachlorobenzene	%	87	N/A	N/A	N/A	7124581

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Recovery of 13C-Endrin Ketone was below criteria due to matrix interferences.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH273							
Sampling Date		2020/10/12 11:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-44L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.117 U	0.117	0.996	0.400	1.00	0.117	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.115 U	0.115	4.98	0.400	1.00	0.115	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.227 J	0.109	4.98	0.400	0.100	0.0227	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	0.507 J	0.110	4.98	0.400	0.100	0.0507	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.510 J	0.116	4.98	0.400	0.100	0.0510	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	14.9	0.112	4.98	0.400	0.0100	0.149	N/A	7055856
Octa CDD *	pg/g	113	0.187	9.96	0.800	0.000300	0.0339	N/A	7055856
Total Tetra CDD *	pg/g	0.117 U	0.117	0.996	0.400	N/A	N/A	0	7055856
Total Penta CDD *	pg/g	0.115 U	0.115	4.98	0.400	N/A	N/A	0	7055856
Total Hexa CDD *	pg/g	4.95 J	0.113	4.98	0.400	N/A	N/A	5	7055856
Total Hepta CDD *	pg/g	39.2	0.112	4.98	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.118 U	0.118	0.996	0.400	0.100	0.0118	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.107 U	0.107	4.98	0.400	0.0300	0.00321	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	0.147 J	0.0974	4.98	0.400	0.300	0.0441	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	0.668 J	0.100	4.98	0.400	0.100	0.0668	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	0.168 J	0.103	4.98	0.400	0.100	0.0168	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.0971 U	0.0971	4.98	0.400	0.100	0.00971	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.104 U	0.104	4.98	0.400	0.100	0.0104	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	1.49 J	0.114	4.98	0.400	0.0100	0.0149	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.110 U	0.110	4.98	0.400	0.0100	0.00110	N/A	7055856
Octa CDF **	pg/g	4.03 J	0.117	9.96	0.800	0.000300	0.00121	N/A	7055856
Total Tetra CDF **	pg/g	0.141 U (1)	0.141	0.996	0.400	N/A	N/A	0	7055856
Total Penta CDF **	pg/g	1.29 J	0.102	4.98	0.400	N/A	N/A	4	7055856
Total Hexa CDF **	pg/g	3.98 J	0.101	4.98	0.400	N/A	N/A	5	7055856
Total Hepta CDF **	pg/g	5.63	0.112	4.98	0.400	N/A	N/A	2	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.719	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH273							
Sampling Date		2020/10/12 11:35							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-44L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH274							
Sampling Date		2020/10/13 14:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-49L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.115 U	0.115	0.999	0.400	1.00	0.115	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.101 U	0.101	4.99	0.400	1.00	0.101	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.109 U	0.109	4.99	0.400	0.100	0.0109	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	0.353 J	0.110	4.99	0.400	0.100	0.0353	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.186 J	0.116	4.99	0.400	0.100	0.0186	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	7.67	0.109	4.99	0.400	0.0100	0.0767	N/A	7055856
Octa CDD *	pg/g	54.1	0.243	9.99	0.800	0.000300	0.0162	N/A	7055856
Total Tetra CDD *	pg/g	0.115 U	0.115	0.999	0.400	N/A	N/A	0	7055856
Total Penta CDD *	pg/g	0.101 U	0.101	4.99	0.400	N/A	N/A	0	7055856
Total Hexa CDD *	pg/g	1.70 J	0.113	4.99	0.400	N/A	N/A	4	7055856
Total Hepta CDD *	pg/g	13.8	0.109	4.99	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.107 U	0.107	0.999	0.400	0.100	0.0107	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.107 U	0.107	4.99	0.400	0.0300	0.00321	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	0.0975 U	0.0975	4.99	0.400	0.300	0.0293	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	0.153 J	0.119	4.99	0.400	0.100	0.0153	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	0.122 U	0.122	4.99	0.400	0.100	0.0122	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.115 U	0.115	4.99	0.400	0.100	0.0115	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.123 U	0.123	4.99	0.400	0.100	0.0123	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	0.919 J	0.109	4.99	0.400	0.0100	0.00919	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.106 U	0.106	4.99	0.400	0.0100	0.00106	N/A	7055856
Octa CDF **	pg/g	2.08 U (1)	2.08	9.99	0.800	0.000300	0.000624	N/A	7055856
Total Tetra CDF **	pg/g	0.107 U	0.107	0.999	0.400	N/A	N/A	0	7055856
Total Penta CDF **	pg/g	0.241 U (2)	0.241	4.99	0.400	N/A	N/A	0	7055856
Total Hexa CDF **	pg/g	1.70 J	0.120	4.99	0.400	N/A	N/A	4	7055856
Total Hepta CDF **	pg/g	2.79 J	0.107	4.99	0.400	N/A	N/A	2	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.479	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH274							
Sampling Date		2020/10/13 14:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-49L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH274							
Sampling Date		2020/10/13 14:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-49L Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.108 U	0.108	10.0	0.400	1.00	0.108	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.110 U	0.110	50.0	0.400	1.00	0.110	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.110 U	0.110	50.0	0.400	0.100	0.0110	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	0.309 J	0.110	50.0	0.400	0.100	0.0309	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.117 U	0.117	50.0	0.400	0.100	0.0117	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	7.08 J	0.115	50.0	0.400	0.0100	0.0708	N/A	7055856
Octa CDD *	pg/g	51.5 J	0.143	100	0.800	0.000300	0.0155	N/A	7055856
Total Tetra CDD *	pg/g	0.108 U	0.108	10.0	0.400	N/A	N/A	0	7055856
Total Penta CDD *	pg/g	0.110 U	0.110	50.0	0.400	N/A	N/A	0	7055856
Total Hexa CDD *	pg/g	1.43 J	0.114	50.0	0.400	N/A	N/A	4	7055856
Total Hepta CDD *	pg/g	13.3 J	0.115	50.0	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.106 U	0.106	10.0	0.400	0.100	0.0106	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.114 U	0.114	50.0	0.400	0.0300	0.00342	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	0.104 U	0.104	50.0	0.400	0.300	0.0312	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	0.112 U	0.112	50.0	0.400	0.100	0.0112	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	0.115 U	0.115	50.0	0.400	0.100	0.0115	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.109 U	0.109	50.0	0.400	0.100	0.0109	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.116 U	0.116	50.0	0.400	0.100	0.0116	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	1.12 J	0.110	50.0	0.400	0.0100	0.0112	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.106 U	0.106	50.0	0.400	0.0100	0.00106	N/A	7055856
Octa CDF **	pg/g	1.95 U (1)	1.95	100	0.800	0.000300	0.000585	N/A	7055856
Total Tetra CDF **	pg/g	0.106 U	0.106	10.0	0.400	N/A	N/A	0	7055856
Total Penta CDF **	pg/g	0.274 J	0.109	50.0	0.400	N/A	N/A	1	7055856
Total Hexa CDF **	pg/g	0.515 J	0.113	50.0	0.400	N/A	N/A	2	7055856
Total Hepta CDF **	pg/g	3.15 J	0.108	50.0	0.400	N/A	N/A	2	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	0.461	N/A	N/A

EDL = Estimated Detection Limit

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QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH274							
Sampling Date		2020/10/13 14:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-49L Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	44	N/A	N/A	N/A	N/A	N/A	N/A	7055856

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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TEST SUMMARY

BV Labs ID: NYH273
Sample ID: T4RB-44L
Matrix: Soil

Collected: 2020/10/12
Shipped:
Received: 2020/10/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero
Moisture	BAL	7015665	N/A	2020/10/22	Prgya Panchal
OC Pesticides in Soil by GCTQ	GCTQ/MS	7124581	2020/12/23	2021/01/04	Wenhui (Susie) Shi

BV Labs ID: NYH274
Sample ID: T4RB-49L
Matrix: Soil

Collected: 2020/10/13
Shipped:
Received: 2020/10/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero
Moisture	BAL	7015665	N/A	2020/10/22	Prgya Panchal

BV Labs ID: NYH274 Dup
Sample ID: T4RB-49L
Matrix: Soil

Collected: 2020/10/13
Shipped:
Received: 2020/10/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.8°C

Revised Report (2021/01/08): Additional analysis added, OC Pesticides.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7015665	MYG	RPD - Sample/Sample Dup	Moisture	2020/10/22	0		%	20
7055856	AGU	Matrix Spike(NYH273)	37CL4 2378 Tetra CDD	2020/11/14		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/14		117	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/14		125	%	28 - 143
			C13-123478 HexaCDD	2020/11/14		118	%	32 - 141
			C13-123478 HexaCDF	2020/11/14		126	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/14		124	%	26 - 138
			C13-123678 HexaCDD	2020/11/14		129	%	28 - 130
			C13-123678 HexaCDF	2020/11/14		115	%	26 - 123
			C13-12378 PentaCDD	2020/11/14		102	%	25 - 181
			C13-12378 PentaCDF	2020/11/14		93	%	24 - 185
			C13-123789 HexaCDF	2020/11/14		128	%	29 - 147
			C13-234678 HexaCDF	2020/11/14		124	%	28 - 136
			C13-23478 PentaCDF	2020/11/14		108	%	21 - 178
			C13-2378 TetraCDD	2020/11/14		87	%	25 - 164
			C13-2378 TetraCDF	2020/11/14		93	%	24 - 169
			C13-OCDD	2020/11/14		97	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/14		92	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/14		102	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/14		99	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/14		100	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/14		90	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/14		146 (1)	%	70 - 140
			Octa CDD	2020/11/14		191 (1)	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/14		97	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/14		104	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/14		96	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/14		100	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/14		103	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/14		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/14		95	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/14		93	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/14		101	%	78 - 138
			Octa CDF	2020/11/14		106	%	63 - 170
7055856	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/11/14		112	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/14		111	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/14		119	%	28 - 143
			C13-123478 HexaCDD	2020/11/14		111	%	32 - 141
			C13-123478 HexaCDF	2020/11/14		117	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/14		119	%	26 - 138
			C13-123678 HexaCDD	2020/11/14		124	%	28 - 130
			C13-123678 HexaCDF	2020/11/14		110	%	26 - 123
			C13-12378 PentaCDD	2020/11/14		111	%	25 - 181
			C13-12378 PentaCDF	2020/11/14		103	%	24 - 185
			C13-123789 HexaCDF	2020/11/14		127	%	29 - 147
			C13-234678 HexaCDF	2020/11/14		118	%	28 - 136
			C13-23478 PentaCDF	2020/11/14		118	%	21 - 178
			C13-2378 TetraCDD	2020/11/14		96	%	25 - 164
			C13-2378 TetraCDF	2020/11/14		93	%	24 - 169
			C13-OCDD	2020/11/14		89	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/14		89	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/14		101	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/14		100	%	70 - 164

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/11/14		92	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/14		99	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/14		102	%	70 - 140
			Octa CDD	2020/11/14		97	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/14		97	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/14		100	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/14		94	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/14		97	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/14		98	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/14		100	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/14		94	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/14		90	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/14		96	%	78 - 138
			Octa CDF	2020/11/14		103	%	63 - 170
7055856	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/11/15		89	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/15		108	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/15		115	%	28 - 143
			C13-123478 HexaCDD	2020/11/15		106	%	32 - 141
			C13-123478 HexaCDF	2020/11/15		115	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/15		114	%	26 - 138
			C13-123678 HexaCDD	2020/11/15		122	%	28 - 130
			C13-123678 HexaCDF	2020/11/15		108	%	26 - 123
			C13-12378 PentaCDD	2020/11/15		95	%	25 - 181
			C13-12378 PentaCDF	2020/11/15		88	%	24 - 185
			C13-123789 HexaCDF	2020/11/15		122	%	29 - 147
			C13-234678 HexaCDF	2020/11/15		117	%	28 - 136
			C13-23478 PentaCDF	2020/11/15		104	%	21 - 178
			C13-2378 TetraCDD	2020/11/15		78	%	25 - 164
			C13-2378 TetraCDF	2020/11/15		82	%	24 - 169
			C13-OCDD	2020/11/15		82	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/15	0.116 U, EDL=0.116		pg/g	
			1,2,3,7,8-Penta CDD	2020/11/15	0.104 U, EDL=0.104		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/11/15	0.113 U, EDL=0.113		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/11/15	0.113 U, EDL=0.113		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/11/15	0.120 U, EDL=0.120		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/11/15	0.106 U, EDL=0.106		pg/g	
			Octa CDD	2020/11/15	0.130 U, EDL=0.130		pg/g	
			Total Tetra CDD	2020/11/15	0.116 U, EDL=0.116		pg/g	
			Total Penta CDD	2020/11/15	0.104 U, EDL=0.104		pg/g	
			Total Hexa CDD	2020/11/15	0.117 U, EDL=0.117		pg/g	
			Total Hepta CDD	2020/11/15	0.106 U, EDL=0.106		pg/g	
			2,3,7,8-Tetra CDF	2020/11/15	0.119 U, EDL=0.119		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2020/11/15	0.111 U, EDL=0.111		pg/g	
			2,3,4,7,8-Penta CDF	2020/11/15	0.101 U, EDL=0.101		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/11/15	0.104 U, EDL=0.104		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/11/15	0.106 U, EDL=0.106		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/11/15	0.100 U, EDL=0.100		pg/g	
			1,2,3,7,8,9-Hexa CDF	2020/11/15	0.107 U, EDL=0.107		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/11/15	0.109 U, EDL=0.109		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/11/15	0.105 U, EDL=0.105		pg/g	
			Octa CDF	2020/11/15	0.205 U, EDL=0.205		pg/g	
			Total Tetra CDF	2020/11/15	0.119 U, EDL=0.119		pg/g	
			Total Penta CDF	2020/11/15	0.106 U, EDL=0.106		pg/g	
			Total Hexa CDF	2020/11/15	0.104 U, EDL=0.104		pg/g	
			Total Hepta CDF	2020/11/15	0.107 U, EDL=0.107		pg/g	
7055856	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/11/15	NC		%	25
			1,2,3,7,8-Penta CDD	2020/11/15	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/11/15	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/11/15	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/11/15	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/11/15	NC		%	25
			Octa CDD	2020/11/15	NC		%	25
			Total Tetra CDD	2020/11/15	NC		%	25
			Total Penta CDD	2020/11/15	NC		%	25
			Total Hexa CDD	2020/11/15	NC		%	25
			Total Hepta CDD	2020/11/15	NC		%	25
			2,3,7,8-Tetra CDF	2020/11/15	NC		%	25
			1,2,3,7,8-Penta CDF	2020/11/15	NC		%	25
			2,3,4,7,8-Penta CDF	2020/11/15	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/11/15	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/11/15	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/11/15	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/11/15	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/11/15	NC		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/11/15	NC		%	25
			Octa CDF	2020/11/15	NC (2)		%	25
			Total Tetra CDF	2020/11/15	NC		%	25
			Total Penta CDF	2020/11/15	NC		%	25
			Total Hexa CDF	2020/11/15	NC		%	25
			Total Hepta CDF	2020/11/15	NC		%	25
7124581	WSS	Matrix Spike	13C10-cis Nonachlor	2020/12/23		86	%	36 - 139
			13C10-Heptachlor	2020/12/23		95	%	5 - 120
			13C10-Heptachlor Epoxide	2020/12/23		83	%	27 - 137

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			13C10-Oxychlordane	2020/12/23		84	%	23 - 135
			13C10-trans Nonachlor	2020/12/23		91	%	14 - 136
			13C12-Endrin	2020/12/23		85	%	35 - 155
			13C12-Endrin Ketone	2020/12/23		70	%	35 - 155
			13C6-beta BHC	2020/12/23		76	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2020/12/23		65	%	11 - 120
			13C-Methoxychlor	2020/12/23		76	%	5 - 120
			13C-pp-DDD	2020/12/23		76	%	5 - 120
			13C-pp-DDE	2020/12/23		75	%	47 - 160
			13C-pp-DDT	2020/12/23		60	%	5 - 120
			C13-Hexachlorobenzene	2020/12/23		58	%	5 - 120
			Dieldrin	2020/12/23		119	%	50 - 200
7124581	WSS	Spiked Blank	13C10-cis Nonachlor	2020/12/23		93	%	36 - 139
			13C10-Heptachlor	2020/12/23		79	%	5 - 120
			13C10-Heptachlor Epoxide	2020/12/23		77	%	27 - 137
			13C10-Oxychlordane	2020/12/23		75	%	23 - 135
			13C10-trans Nonachlor	2020/12/23		89	%	14 - 136
			13C12-Endrin	2020/12/23		87	%	35 - 155
			13C12-Endrin Ketone	2020/12/23		93	%	35 - 155
			13C6-beta BHC	2020/12/23		83	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2020/12/23		80	%	11 - 120
			13C-Methoxychlor	2020/12/23		95	%	5 - 120
			13C-pp-DDD	2020/12/23		85	%	5 - 120
			13C-pp-DDE	2020/12/23		76	%	47 - 160
			13C-pp-DDT	2020/12/23		84	%	5 - 120
			C13-Hexachlorobenzene	2020/12/23		53	%	5 - 120
			Dieldrin	2020/12/23		112	%	50 - 200
7124581	WSS	Method Blank	13C10-cis Nonachlor	2020/12/23		98	%	36 - 139
			13C10-Heptachlor	2020/12/23		85	%	5 - 120
			13C10-Heptachlor Epoxide	2020/12/23		79	%	27 - 137
			13C10-Oxychlordane	2020/12/23		83	%	23 - 135
			13C10-trans Nonachlor	2020/12/23		91	%	14 - 136
			13C12-Endrin	2020/12/23		88	%	35 - 155
			13C12-Endrin Ketone	2020/12/23		101	%	35 - 155
			13C6-beta BHC	2020/12/23		82	%	32 - 130
			13C6-d6-gamma BHC (Lindane)	2020/12/23		83	%	11 - 120
			13C-Methoxychlor	2020/12/23		81	%	5 - 120
			13C-pp-DDD	2020/12/23		90	%	5 - 120
			13C-pp-DDE	2020/12/23		75	%	47 - 160
			13C-pp-DDT	2020/12/23		83	%	5 - 120
			C13-Hexachlorobenzene	2020/12/23		56	%	5 - 120
			Dieldrin	2020/12/23	0.024 U, MDL=0.024		ng/g	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7124581	WSS	RPD - Sample/Sample Dup	Dieldrin	2020/12/23	NC		%	25

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery exceeds method criteria and is possibly due to sample heterogeneity

(2) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Owen Cosby, BSc.C.Chem, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SUBCONTRACT ORDER

Apex Laboratories

A0J0503

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

Sample Name: T4RB-44L **Soil** **Sampled: 10/12/20 11:35** (A0J0503-02)

Analysis	Due	Expires	Comments
[redacted]	[redacted]	[redacted]	[redacted] Done
1699 Insecticides/Pesticides (SUB)	01/05/21 17:00	10/26/20 11:35	Dieldrin ONLY---RDL is 0.05ng/g and MDL is 0.0076ng/g Level 4 DP

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-49L **Soil** **Sampled: 10/13/20 14:15** (A0J0503-13)

Analysis	Due	Expires	Comments
[redacted]	[redacted]	04/11/21 14:15	[redacted] Done

Containers Supplied:
(C)8 oz Glass Jar

Fed Ex (Shipper)

Released By	Date	Received By	Date
Fed Ex (Shipper)			
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

CB 10/14/20 **A0J0503**

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

Sample Name: T4RB-44L **Soil** **Sampled: 10/12/20 11:35** (A0J0503-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	CB 10/14 ~~10/27/20~~ 17:00	04/10/21 11:35	BV/ Maxxam -- Level 4 Data package
Containers Supplied:	11/3/20		
(C)8 oz Glass Jar			

Sample Name: T4RB-49L **Soil** **Sampled: 10/13/20 14:15** (A0J0503-13)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	CB 10/14 ~~10/27/20~~ 17:00	04/11/21 14:15	BV/ Maxxam -- Level 4 Data package
Containers Supplied:	11/3/20		
(C)8 oz Glass Jar			

International Solid Sample
Heat Treat Required
High Risk material
Controlled Storage and Disposal

21-Oct-20 13:03
Lori Dufour
C0R6852
GK1 ENV-976

Standard TAT

Tracking #: 771840695964 EJ

Released By	Date	Received By	Date
	10/19/20	Fed Ex (Shipper)	
Fed Ex (Shipper)		DIPIKA SINGH	2020/10/21 13:03
Released By	Date	Received By	Date

Page 1 of 1

3.0/5-0/3.4

Apex Laboratories, LLC

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

Monday, December 21, 2020

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0J0545 - POP --- T4 Riverbank - 2372-08 Task 3

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 A0J0545, which was received by the laboratory on 10/15/2020 at 12:12:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	0.9 degC	Cooler #2	1.4 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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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
T4RB-48L	A0J0545-01	Soil	10/14/20 10:25	10/15/20 12:12
T4RB-48U	A0J0545-02	Soil	10/14/20 10:55	10/15/20 12:12
T4RB-50U	A0J0545-03	Soil	10/14/20 11:25	10/15/20 12:12
T4RB-50L	A0J0545-04	Soil	10/14/20 12:10	10/15/20 12:12
T4RB-51L	A0J0545-05	Soil	10/14/20 13:45	10/15/20 12:12
T4RB-51L-OD4	A0J0545-06	Soil	10/14/20 14:25	10/15/20 12:12
T4RB-51U	A0J0545-07	Soil	10/14/20 14:50	10/15/20 12:12
Equipment Blank Soil	A0J0545-08	Water	10/14/20 16:10	10/15/20 12:12

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL CASE NARRATIVE

Work Order: A0J0545

Amended Report Revision 1:

Additional 8270E Compound Reported-

This report supersedes all previous reports.

The final report has been amended to add bis-2-ethylhexyl phthalate (BEHP) by EPA 8270E to sample; T4RB-51U (Apex ID: A0J0545-07)

Darrell Auvil
Project Manager
12/21/2020

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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
T4RB-48L (A0J0545-01)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	10.5	25.0	mg/kg dry	1	10/21/20 23:03	NWTPH-Dx	
Oil	**219**	20.9	50.0	mg/kg dry	1	10/21/20 23:03	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 88 %*		*Limits: 50-150 %*	*1*	*10/21/20 23:03*	*NWTPH-Dx*	
T4RB-48U (A0J0545-02)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	199	398	mg/kg dry	20	10/21/20 23:48	NWTPH-Dx	
Oil	**880**	398	796	mg/kg dry	20	10/21/20 23:48	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: %*		*Limits: 50-150 %*	*20*	*10/21/20 23:48*	*NWTPH-Dx*	*S-01*
T4RB-50U (A0J0545-03)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	10.9	25.0	mg/kg dry	1	10/22/20 00:34	NWTPH-Dx	
Oil	**45.0**	21.8	50.0	mg/kg dry	1	10/22/20 00:34	NWTPH-Dx	**J**
Surrogate: o-Terphenyl (Surr)		*Recovery: 72 %*		*Limits: 50-150 %*	*1*	*10/22/20 00:34*	*NWTPH-Dx*	
T4RB-50L (A0J0545-04)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	11.1	25.0	mg/kg dry	1	10/22/20 00:56	NWTPH-Dx	
Oil	ND	22.1	50.0	mg/kg dry	1	10/22/20 00:56	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 80 %*		*Limits: 50-150 %*	*1*	*10/22/20 00:56*	*NWTPH-Dx*	
T4RB-51L (A0J0545-05)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	10.5	25.0	mg/kg dry	1	10/22/20 01:19	NWTPH-Dx	
Oil	ND	21.0	50.0	mg/kg dry	1	10/22/20 01:19	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*		*Limits: 50-150 %*	*1*	*10/22/20 01:19*	*NWTPH-Dx*	
T4RB-51L-OD4 (A0J0545-06)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	10.8	25.0	mg/kg dry	1	10/22/20 01:41	NWTPH-Dx	
Oil	**126**	21.6	50.0	mg/kg dry	1	10/22/20 01:41	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 87 %*		*Limits: 50-150 %*	*1*	*10/22/20 01:41*	*NWTPH-Dx*	
T4RB-51U (A0J0545-07)				**Matrix: Soil**		**Batch: 0100726**		
Diesel	ND	10.2	25.0	mg/kg dry	1	10/22/20 02:04	NWTPH-Dx	
Oil	**96.0**	20.4	50.0	mg/kg dry	1	10/22/20 02:04	NWTPH-Dx	**F-03**
Surrogate: o-Terphenyl (Surr)		*Recovery: 83 %*		*Limits: 50-150 %*	*1*	*10/22/20 02:04*	*NWTPH-Dx*	

Apex Laboratories



Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: 0100657**		
Diesel	ND	0.0952	0.190	mg/L	1	10/21/20 04:05	NWTPH-Dx	
Oil	ND	0.190	0.381	mg/L	1	10/21/20 04:05	NWTPH-Dx	
Surrogate: o-Terphenyl (Surr)		*Recovery: 98 %*		*Limits: 50-150 %*	*1*	*10/21/20 04:05*	*NWTPH-Dx*	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Halogenated Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51U (A0J0545-07)				**Matrix: Soil**		**Batch: 0100802**		
Chlorobenzene	ND	14.5	28.9	ug/kg dry	50	10/23/20 18:31	5035A/8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits: 80-120 %*	*1*	*10/23/20 18:31*	*5035A/8260D*	
Toluene-d8 (Surr)			*102 %*	*80-120 %*	*1*	*10/23/20 18:31*	*5035A/8260D*	
4-Bromofluorobenzene (Surr)			*100 %*	*79-120 %*	*1*	*10/23/20 18:31*	*5035A/8260D*	
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: 0100846**		
Chlorobenzene	ND	0.250	0.500	ug/L	1	10/24/20 13:02	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		*Recovery:*	*101 %*	*Limits: 80-120 %*	*1*	*10/24/20 13:02*	*EPA 8260D*	
Toluene-d8 (Surr)			*101 %*	*80-120 %*	*1*	*10/24/20 13:02*	*EPA 8260D*	
4-Bromofluorobenzene (Surr)			*103 %*	*80-120 %*	*1*	*10/24/20 13:02*	*EPA 8260D*	

Apex Laboratories



Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51U (A0J0545-07)				**Matrix: Soil**		**Batch: 0100700**		**C-07**
Aroclor 1016	ND	2.14	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1221	ND	2.14	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1232	ND	5.01	5.01	ug/kg dry	1	10/23/20 20:13	EPA 8082A	R-02
Aroclor 1242	ND	4.29	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1248	ND	2.14	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1254	ND	4.29	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1260	**5.67**	2.14	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1262	ND	2.14	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Aroclor 1268	ND	4.29	4.29	ug/kg dry	1	10/23/20 20:13	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 106 %*		*Limits: 60-125 %*	*1*	*10/23/20 20:13*	*EPA 8082A*	
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: 0110021**		**C-07**
Aroclor 1016	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1221	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1232	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1242	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1248	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1254	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1260	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1262	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Aroclor 1268	ND	0.0190	0.0381	ug/L	1	11/03/20 08:56	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 87 %*		*Limits: 40-135 %*	*1*	*11/03/20 08:56*	*EPA 8082A*	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51U (A0J0545-07RE1)				**Matrix: Soil**		**Batch: 0100905**		**C-05**
Aldrin	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
gamma-BHC (Lindane)	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
cis-Chlordane	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
trans-Chlordane	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
4,4'-DDD	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
4,4'-DDE	**1.15**	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	**J**
4,4'-DDT	**1.13**	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	**J**
Dieldrin	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
Endosulfan I	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
Endosulfan II	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
Endosulfan sulfate	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
Chlordane (Technical)	ND	32.1	64.2	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
cis-Nonachlor	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
2,4'-DDD	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
2,4'-DDE	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
2,4'-DDT	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
Oxychlordane	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
trans-Nonachlor	ND	1.07	2.14	ug/kg dry	1	10/28/20 16:29	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*37 %*	*Limits: 42-129 %*	*1*	*10/28/20 16:29*	*EPA 8081B*	*S-06*
Decachlorobiphenyl (Surr)			*83 %*	*55-130 %*	*1*	*10/28/20 16:29*	*EPA 8081B*	
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: 0100638**		
Aldrin	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
alpha-BHC	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
beta-BHC	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
delta-BHC	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
gamma-BHC (Lindane)	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
cis-Chlordane	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
trans-Chlordane	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
4,4'-DDD	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
4,4'-DDE	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
4,4'-DDT	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Dieldrin	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: 0100638**		
Endosulfan I	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Endosulfan II	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Endosulfan sulfate	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Endrin	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Endrin Aldehyde	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Endrin ketone	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Heptachlor	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Heptachlor epoxide	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Methoxychlor	ND	0.0143	0.0286	ug/L	1	10/21/20 16:56	EPA 8081B	
Chlordane (Technical)	ND	0.179	0.357	ug/L	1	10/21/20 16:56	EPA 8081B	
Toxaphene (Total)	ND	0.179	0.357	ug/L	1	10/21/20 16:56	EPA 8081B	
cis-Nonachlor	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
trans-Nonachlor	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
2,4'-DDD	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
2,4'-DDE	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
2,4'-DDT	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Hexachlorobenzene	ND	0.0143	0.0286	ug/L	1	10/21/20 16:56	EPA 8081B	
Hexachlorobutadiene	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Mirex	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Oxychlordane	ND	0.00476	0.00952	ug/L	1	10/21/20 16:56	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*55 %*	*Limits: 25-140 %*	*1*	*10/21/20 16:56*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*43 %*	*30-135 %*	*1*	*10/21/20 16:56*	*EPA 8081B*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-48L (A0J0545-01RE2)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Acenaphthylene	ND	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Anthracene	ND	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Benz(a)anthracene	**24.7**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	**J**
Benzo(a)pyrene	**45.8**	22.0	43.9	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Benzo(b)fluoranthene	**54.9**	22.0	43.9	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Benzo(k)fluoranthene	**27.1**	22.0	43.9	ug/kg dry	10	10/28/20 23:27	EPA 8270E	**J**
Benzo(g,h,i)perylene	**33.3**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Chrysene	**32.3**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Dibenz(a,h)anthracene	ND	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Fluoranthene	**35.0**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Fluorene	ND	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**22.9**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	**J**
2-Methylnaphthalene	ND	29.3	58.6	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Naphthalene	ND	29.3	58.6	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Phenanthrene	**20.9**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	**J**
Pyrene	**39.8**	14.6	29.3	ug/kg dry	10	10/28/20 23:27	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*78 %*	*Limits: 37-122 %*	*10*	*10/28/20 23:27*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*78 %*	*44-120 %*	*10*	*10/28/20 23:27*	*EPA 8270E*	
Phenol-d6 (Surr)			*47 %*	*33-122 %*	*10*	*10/28/20 23:27*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*10*	*10/28/20 23:27*	*EPA 8270E*	
2-Fluorophenol (Surr)			*64 %*	*35-120 %*	*10*	*10/28/20 23:27*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*58 %*	*39-132 %*	*10*	*10/28/20 23:27*	*EPA 8270E*	
T4RB-48U (A0J0545-02)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Acenaphthylene	ND	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Anthracene	ND	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Benz(a)anthracene	**5920**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Benzo(a)pyrene	**10000**	2140	4270	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Benzo(b)fluoranthene	**13300**	2140	4270	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Benzo(k)fluoranthene	**4970**	2140	4270	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**8360**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Chrysene	**7630**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-48U (A0J0545-02)				**Matrix: Soil**		**Batch: 0100765**		
Dibenz(a,h)anthracene	ND	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Fluoranthene	**9330**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Fluorene	ND	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**7450**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
2-Methylnaphthalene	ND	2850	5690	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Naphthalene	ND	2850	5690	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Phenanthrene	**3590**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Pyrene	**10500**	1420	2850	ug/kg dry	1000	10/26/20 10:25	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*26 %*	*Limits: 37-122 %*	*1000*	*10/26/20 10:25*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*729 %*	*44-120 %*	*1000*	*10/26/20 10:25*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*134 %*	*33-122 %*	*1000*	*10/26/20 10:25*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*872 %*	*54-127 %*	*1000*	*10/26/20 10:25*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*272 %*	*35-120 %*	*1000*	*10/26/20 10:25*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*1060 %*	*39-132 %*	*1000*	*10/26/20 10:25*	*EPA 8270E*	*S-05*
T4RB-50U (A0J0545-03RE1)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Acenaphthylene	ND	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Anthracene	ND	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Benz(a)anthracene	**9.35**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
Benzo(a)pyrene	**15.3**	8.54	17.1	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
Benzo(b)fluoranthene	**19.8**	8.54	17.1	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Benzo(k)fluoranthene	**9.93**	8.54	17.1	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
Benzo(g,h,i)perylene	**8.16**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
Chrysene	**10.4**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
Dibenz(a,h)anthracene	ND	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Fluoranthene	**14.2**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Fluorene	ND	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**8.13**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
2-Methylnaphthalene	ND	11.4	22.8	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Naphthalene	ND	11.4	22.8	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Phenanthrene	**6.75**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	**J**
Pyrene	**12.4**	5.68	11.4	ug/kg dry	4	10/27/20 14:24	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*66 %*	*Limits: 37-122 %*	*4*	*10/27/20 14:24*	*EPA 8270E*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-50U (A0J0545-03RE1)				**Matrix: Soil**		**Batch: 0100765**		
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*67 %*	*Limits: 44-120 %*	*4*	*10/27/20 14:24*	*EPA 8270E*	
Phenol-d6 (Surr)			*45 %*	*33-122 %*	*4*	*10/27/20 14:24*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*	*4*	*10/27/20 14:24*	*EPA 8270E*	
2-Fluorophenol (Surr)			*50 %*	*35-120 %*	*4*	*10/27/20 14:24*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*67 %*	*39-132 %*	*4*	*10/27/20 14:24*	*EPA 8270E*	
T4RB-50L (A0J0545-04)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Acenaphthylene	ND	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Anthracene	**15.4**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	**J**
Benz(a)anthracene	**108**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Benzo(a)pyrene	**122**	21.8	43.5	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Benzo(b)fluoranthene	**109**	21.8	43.5	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Benzo(k)fluoranthene	**48.2**	21.8	43.5	ug/kg dry	10	10/26/20 11:36	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**65.6**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Chrysene	**125**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Dibenz(a,h)anthracene	ND	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Fluoranthene	**138**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Fluorene	ND	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**62.9**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
2-Methylnaphthalene	ND	29.1	58.0	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Naphthalene	ND	29.1	58.0	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Phenanthrene	**58.1**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Pyrene	**198**	14.5	29.1	ug/kg dry	10	10/26/20 11:36	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*71 %*	*Limits: 37-122 %*	*10*	*10/26/20 11:36*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*10*	*10/26/20 11:36*	*EPA 8270E*	
Phenol-d6 (Surr)			*42 %*	*33-122 %*	*10*	*10/26/20 11:36*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*88 %*	*54-127 %*	*10*	*10/26/20 11:36*	*EPA 8270E*	
2-Fluorophenol (Surr)			*57 %*	*35-120 %*	*10*	*10/26/20 11:36*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*72 %*	*39-132 %*	*10*	*10/26/20 11:36*	*EPA 8270E*	
T4RB-51L (A0J0545-05RE1)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Acenaphthylene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Anthracene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51L (A0J0545-05RE1)				**Matrix: Soil**		**Batch: 0100765**		
Benz(a)anthracene	**1.81**	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	**J**
Benzo(a)pyrene	**2.41**	2.18	4.35	ug/kg dry	1	10/26/20 14:35	EPA 8270E	**J**
Benzo(b)fluoranthene	**2.63**	2.18	4.35	ug/kg dry	1	10/26/20 14:35	EPA 8270E	**J**
Benzo(k)fluoranthene	ND	2.18	4.35	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Benzo(g,h,i)perylene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Chrysene	**1.60**	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	**J**
Dibenz(a,h)anthracene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Fluoranthene	**2.64**	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	**J**
Fluorene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
2-Methylnaphthalene	ND	2.91	5.80	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Naphthalene	ND	2.91	5.80	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Phenanthrene	**3.52**	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Pyrene	**3.10**	1.45	2.91	ug/kg dry	1	10/26/20 14:35	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*76 %*	*Limits: 37-122 %*	*1*	*10/26/20 14:35*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*71 %*	*44-120 %*	*1*	*10/26/20 14:35*	*EPA 8270E*	
Phenol-d6 (Surr)			*68 %*	*33-122 %*	*1*	*10/26/20 14:35*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*83 %*	*54-127 %*	*1*	*10/26/20 14:35*	*EPA 8270E*	
2-Fluorophenol (Surr)			*67 %*	*35-120 %*	*1*	*10/26/20 14:35*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*86 %*	*39-132 %*	*1*	*10/26/20 14:35*	*EPA 8270E*	
T4RB-51L-OD4 (A0J0545-06RE1)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Acenaphthylene	ND	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Anthracene	**13.1**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	**J**
Benz(a)anthracene	**76.5**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Benzo(a)pyrene	**151**	13.5	27.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Benzo(b)fluoranthene	**183**	13.5	27.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Benzo(k)fluoranthene	**71.5**	13.5	27.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**119**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Chrysene	**108**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Dibenz(a,h)anthracene	**20.8**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Fluoranthene	**137**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Fluorene	ND	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51L-OD4 (A0J0545-06RE1)				**Matrix: Soil**		**Batch: 0100765**		
Indeno(1,2,3-cd)pyrene	**110**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
2-Methylnaphthalene	ND	18.0	35.9	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Naphthalene	ND	18.0	35.9	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Phenanthrene	**51.7**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Pyrene	**138**	8.96	18.0	ug/kg dry	4	10/26/20 15:11	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*64 %*	*Limits: 37-122 %*	*4*	*10/26/20 15:11*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*66 %*	*44-120 %*	*4*	*10/26/20 15:11*	*EPA 8270E*	
Phenol-d6 (Surr)			*58 %*	*33-122 %*	*4*	*10/26/20 15:11*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*90 %*	*54-127 %*	*4*	*10/26/20 15:11*	*EPA 8270E*	
2-Fluorophenol (Surr)			*54 %*	*35-120 %*	*4*	*10/26/20 15:11*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*93 %*	*39-132 %*	*4*	*10/26/20 15:11*	*EPA 8270E*	
T4RB-51U (A0J0545-07RE2)				**Matrix: Soil**		**Batch: 0100765**		
Acenaphthene	ND	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Acenaphthylene	ND	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Anthracene	ND	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Benz(a)anthracene	**11.8**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Benzo(a)pyrene	**20.7**	8.71	17.4	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Benzo(b)fluoranthene	**22.1**	8.71	17.4	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Benzo(k)fluoranthene	**13.1**	8.71	17.4	ug/kg dry	4	10/27/20 15:00	EPA 8270E	**J**
Benzo(g,h,i)perylene	**13.3**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Chrysene	**11.9**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Dibenz(a,h)anthracene	ND	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Fluoranthene	**16.3**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Fluorene	ND	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**11.2**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	**J**
2-Methylnaphthalene	ND	11.6	23.2	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Naphthalene	ND	11.6	23.2	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Phenanthrene	**7.09**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	**J**
Pyrene	**16.4**	5.79	11.6	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	87.1	174	ug/kg dry	4	10/27/20 15:00	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*79 %*	*Limits: 37-122 %*	*4*	*10/27/20 15:00*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*77 %*	*44-120 %*	*4*	*10/27/20 15:00*	*EPA 8270E*	
Phenol-d6 (Surr)			*62 %*	*33-122 %*	*4*	*10/27/20 15:00*	*EPA 8270E*	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51U (A0J0545-07RE2)				**Matrix: Soil**		**Batch: 0100765**		
Surrogate: p-Terphenyl-d14 (Surr)		*Recovery:*	*87 %*	*Limits: 54-127 %*	*4*	*10/27/20 15:00*	*EPA 8270E*	
2-Fluorophenol (Surr)			*68 %*	*35-120 %*	*4*	*10/27/20 15:00*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*85 %*	*39-132 %*	*4*	*10/27/20 15:00*	*EPA 8270E*	
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: 0100642**		
Acenaphthene	ND	0.122	0.122	ug/L	1	10/20/20 15:59	EPA 8270E	R-02
Acenaphthylene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Anthracene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Benz(a)anthracene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Benzo(a)pyrene	ND	0.0153	0.0306	ug/L	1	10/20/20 15:59	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0153	0.0306	ug/L	1	10/20/20 15:59	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0153	0.0306	ug/L	1	10/20/20 15:59	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Chrysene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Fluoranthene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Fluorene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
2-Methylnaphthalene	ND	0.0204	0.0408	ug/L	1	10/20/20 15:59	EPA 8270E	
Naphthalene	ND	0.0204	0.0408	ug/L	1	10/20/20 15:59	EPA 8270E	
Phenanthrene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Pyrene	ND	0.0102	0.0204	ug/L	1	10/20/20 15:59	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	0.204	0.408	ug/L	1	10/20/20 15:59	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*59 %*	*Limits: 44-120 %*	*1*	*10/20/20 15:59*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*46 %*	*44-120 %*	*1*	*10/20/20 15:59*	*EPA 8270E*	
Phenol-d6 (Surr)			*19 %*	*10-133 %*	*1*	*10/20/20 15:59*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*63 %*	*50-134 %*	*1*	*10/20/20 15:59*	*EPA 8270E*	
2-Fluorophenol (Surr)			*28 %*	*19-120 %*	*1*	*10/20/20 15:59*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*78 %*	*43-140 %*	*1*	*10/20/20 15:59*	*EPA 8270E*	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51U (A0J0545-07)				**Matrix: Soil**				
Batch: 0100878								
Arsenic	**3.58**	0.589	1.18	mg/kg dry	10	10/27/20 16:46	EPA 6020A	
Cadmium	**0.182**	0.118	0.235	mg/kg dry	10	10/27/20 16:46	EPA 6020A	**J**
Copper	**18.0**	1.18	2.35	mg/kg dry	10	10/27/20 16:46	EPA 6020A	
Lead	**9.66**	0.118	0.235	mg/kg dry	10	10/27/20 16:46	EPA 6020A	
Mercury	ND	0.0471	0.0942	mg/kg dry	10	10/27/20 16:46	EPA 6020A	
Zinc	**58.3**	2.35	4.71	mg/kg dry	10	10/27/20 16:46	EPA 6020A	
Equipment Blank Soil (A0J0545-08RE1)				**Matrix: Water**				
Batch: 0100942								
Arsenic	ND	0.500	1.00	ug/L	1	10/27/20 19:07	EPA 6020A	
Cadmium	ND	0.100	0.200	ug/L	1	10/27/20 19:07	EPA 6020A	
Copper	ND	1.00	2.00	ug/L	1	10/27/20 19:07	EPA 6020A	
Lead	ND	0.100	0.200	ug/L	1	10/27/20 19:07	EPA 6020A	Q-41
Mercury	ND	0.0400	0.0800	ug/L	1	10/27/20 19:07	EPA 6020A	
Zinc	ND	2.00	4.00	ug/L	1	10/27/20 19:07	EPA 6020A	

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-48L (A0J0545-01)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**90.0**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	
T4RB-48U (A0J0545-02)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**93.2**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	
T4RB-50U (A0J0545-03)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**89.3**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	
T4RB-50L (A0J0545-04)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**87.6**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	
T4RB-51L (A0J0545-05)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**89.0**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	
T4RB-51L-OD4 (A0J0545-06)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**85.4**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	
T4RB-51U (A0J0545-07)				**Matrix: Soil**		**Batch: 0100602**		
% Solids	**90.5**	1.00	1.00	%	1	10/20/20 08:57	EPA 8000D	

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Analytical Resources, Inc.

ANALYTICAL SAMPLE RESULTS (Subcontracted)

Butyl Tins

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-51U (A0J0545-07)				**Matrix: Soil**		**Batch: BIJ0720**		
Batch: BIJ0720								
Tributyltin Ion	ND	0.449	3.85	ug/kg dry	1	11/09/20 11:57	EPA 8270E-SIM	U
Batch: BIJ0720								
Surrogate: Tripentyltin		*Recovery:*	*64.4 %*	*Limits: 30-160 %*	*1*	*11/09/20 11:57*	*EPA 8270E-SIM*	
Tripropyltin			*49.6 %*	*30-160 %*	*1*	*11/09/20 11:57*	*EPA 8270E-SIM*	
Equipment Blank Soil (A0J0545-08)				**Matrix: Water**		**Batch: BIJ0640**		
Batch: BIJ0640								
Tributyltin Ion	ND	0.043	0.193	ug/L	1	10/25/20 12:40	EPA 8270E-SIM	U
Batch: BIJ0640								
Surrogate: Tripentyltin		*Recovery:*	*59.1 %*	*Limits: 30-160 %*	*1*	*10/25/20 12:40*	*EPA 8270E-SIM*	
Tripropyltin			*52.3 %*	*30-160 %*	*1*	*10/25/20 12:40*	*EPA 8270E-SIM*	

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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 0100657 - EPA 3510C (Fuels/Acid Ext.)							**Water**					
Blank (0100657-BLK1)			Prepared: 10/20/20 10:39		Analyzed: 10/21/20 01:40							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	mg/L	1	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 92 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (0100657-BS1)			Prepared: 10/20/20 10:39		Analyzed: 10/21/20 02:01							
NWTPH-Dx												
Diesel	1.13	0.100	0.200	mg/L	1	1.25	---	91	59-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 106 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS Dup (0100657-BSD1)			Prepared: 10/20/20 10:39		Analyzed: 10/21/20 02:22							**Q-19**
NWTPH-Dx												
Diesel	1.19	0.100	0.200	mg/L	1	1.25	---	95	59-115%	5	30%	
Surr: o-Terphenyl (Surr)			*Recovery: 105 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Batch 0100726 - EPA 3546 (Fuels)							**Soil**					
Blank (0100726-BLK1)			Prepared: 10/21/20 13:05		Analyzed: 10/21/20 22:18							
NWTPH-Dx												
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	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 85 %*		*Limits: 50-150 %*		*Dilution: 1x*					
LCS (0100726-BS1)			Prepared: 10/21/20 13:05		Analyzed: 10/21/20 22:41							
NWTPH-Dx												
Diesel	109	10.0	20.0	mg/kg wet	1	125	---	88	73-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*		*Limits: 50-150 %*		*Dilution: 1x*					
Duplicate (0100726-DUP1)			Prepared: 10/21/20 13:05		Analyzed: 10/21/20 23:26							
QC Source Sample: T4RB-48L (A0J0545-01)												
NWTPH-Dx												
Diesel	ND	10.4	20.8	mg/kg dry	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100726 - EPA 3546 (Fuels)							**Soil**					
Duplicate (0100726-DUP1)			Prepared: 10/21/20 13:05		Analyzed: 10/21/20 23:26							
QC Source Sample: T4RB-48L (A0J0545-01)												
Oil	**132**	20.8	41.7	mg/kg dry	1	---	219	---	---	**50**	**30%**	Q-05
Mineral Oil	ND	20.8	41.7	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 81 %*	*Limits: 50-150 %*		*Dilution: 1x*							
Duplicate (0100726-DUP2)			Prepared: 10/21/20 13:05		Analyzed: 10/22/20 02:04							
QC Source Sample: Non-SDG (A0J0639-06)												
Diesel	ND	12.9	25.8	mg/kg dry	1	---	ND	---	---	---	30%	
Oil	**236**	25.8	51.6	mg/kg dry	1	---	114	---	---	**70**	**30%**	Q-05
Mineral Oil	ND	25.8	51.6	mg/kg dry	1	---	ND	---	---	---	30%	
Surr: o-Terphenyl (Surr)		*Recovery: 79 %*	*Limits: 50-150 %*		*Dilution: 1x*							

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100802 - EPA 5035A							**Soil**					
Blank (0100802-BLK1)			Prepared: 10/23/20 09:00 Analyzed: 10/23/20 11:15									
5035A/8260D												
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	---	---	---	---	---	---	
Carbon tetrachloride	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Chlorobenzene	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Chloroethane	ND	333	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	---	---	---	---	---	---	
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	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Hexachlorobutadiene	ND	33.3	66.7	ug/kg wet	50	---	---	---	---	---	---	
Methylene chloride	ND	167	333	ug/kg wet	50	---	---	---	---	---	---	

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Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100802 - EPA 5035A							**Soil**					
Blank (0100802-BLK1)			Prepared: 10/23/20 09:00		Analyzed: 10/23/20 11:15							
1,1,1,2-Tetrachloroethane	ND	16.7	33.3	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	---	---	---	---	---	---	
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	66.7	66.7	ug/kg wet	50	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	16.7	33.3	ug/kg wet	50	---	---	---	---	---	---	
Vinyl chloride	ND	8.33	16.7	ug/kg wet	50	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*		*Dilution: 1x*					
Toluene-d8 (Surr)			*104 %*		*80-120 %*		*"*					
4-Bromofluorobenzene (Surr)			*101 %*		*79-120 %*		*"*					
LCS (0100802-BS1)			Prepared: 10/23/20 09:00		Analyzed: 10/23/20 10:21							
5035A/8260D												
Bromobenzene	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
Bromochloromethane	915	25.0	50.0	ug/kg wet	50	1000	---	91	80-120%	---	---	
Bromodichloromethane	1110	25.0	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
Bromoform	971	50.0	100	ug/kg wet	50	1000	---	97	80-120%	---	---	
Bromomethane	878	500	500	ug/kg wet	50	1000	---	88	80-120%	---	---	
Carbon tetrachloride	1140	25.0	50.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
Chlorobenzene	1010	12.5	25.0	ug/kg wet	50	1000	---	101	80-120%	---	---	
Chloroethane	618	500	500	ug/kg wet	50	1000	---	**62**	**80-120%**	---	---	Q-55
Chloroform	1110	25.0	50.0	ug/kg wet	50	1000	---	111	80-120%	---	---	
Chloromethane	902	125	250	ug/kg wet	50	1000	---	90	80-120%	---	---	
2-Chlorotoluene	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
4-Chlorotoluene	1140	25.0	50.0	ug/kg wet	50	1000	---	114	80-120%	---	---	
Dibromochloromethane	994	50.0	100	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2-Dibromo-3-chloropropane	957	125	250	ug/kg wet	50	1000	---	96	80-120%	---	---	
1,2-Dibromoethane (EDB)	1050	25.0	50.0	ug/kg wet	50	1000	---	105	80-120%	---	---	
Dibromomethane	1040	25.0	50.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
1,2-Dichlorobenzene	1050	12.5	25.0	ug/kg wet	50	1000	---	105	80-120%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100802 - EPA 5035A							**Soil**					
LCS (0100802-BS1)			Prepared: 10/23/20 09:00		Analyzed: 10/23/20 10:21							
1,3-Dichlorobenzene	1070	12.5	25.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,4-Dichlorobenzene	971	12.5	25.0	ug/kg wet	50	1000	---	97	80-120%	---	---	
Dichlorodifluoromethane	919	50.0	100	ug/kg wet	50	1000	---	92	80-120%	---	---	
1,1-Dichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,2-Dichloroethane (EDC)	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
1,1-Dichloroethene	1000	12.5	25.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
cis-1,2-Dichloroethene	1040	12.5	25.0	ug/kg wet	50	1000	---	104	80-120%	---	---	
trans-1,2-Dichloroethene	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,2-Dichloropropane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
1,3-Dichloropropane	1090	25.0	50.0	ug/kg wet	50	1000	---	109	80-120%	---	---	
2,2-Dichloropropane	1230	25.0	50.0	ug/kg wet	50	1000	---	**123**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	1070	25.0	50.0	ug/kg wet	50	1000	---	107	80-120%	---	---	
cis-1,3-Dichloropropene	1000	25.0	50.0	ug/kg wet	50	1000	---	100	80-120%	---	---	
trans-1,3-Dichloropropene	1000	50.0	100	ug/kg wet	50	1000	---	100	80-120%	---	---	
Hexachlorobutadiene	973	50.0	100	ug/kg wet	50	1000	---	97	80-120%	---	---	
Methylene chloride	1070	250	500	ug/kg wet	50	1000	---	107	80-120%	---	---	
1,1,1,2-Tetrachloroethane	993	25.0	50.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,1,2,2-Tetrachloroethane	1200	25.0	50.0	ug/kg wet	50	1000	---	120	80-120%	---	---	
Tetrachloroethene (PCE)	990	12.5	25.0	ug/kg wet	50	1000	---	99	80-120%	---	---	
1,2,3-Trichlorobenzene	979	125	250	ug/kg wet	50	1000	---	98	80-120%	---	---	
1,2,4-Trichlorobenzene	968	125	250	ug/kg wet	50	1000	---	97	80-120%	---	---	
1,1,1-Trichloroethane	1130	12.5	25.0	ug/kg wet	50	1000	---	113	80-120%	---	---	
1,1,2-Trichloroethane	1060	12.5	25.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Trichloroethene (TCE)	1020	12.5	25.0	ug/kg wet	50	1000	---	102	80-120%	---	---	
Trichlorofluoromethane	516	100	100	ug/kg wet	50	1000	---	**52**	**80-120%**	---	---	Q-55
1,2,3-Trichloropropane	1060	25.0	50.0	ug/kg wet	50	1000	---	106	80-120%	---	---	
Vinyl chloride	887	12.5	25.0	ug/kg wet	50	1000	---	89	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*101 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*98 %*		*79-120 %*				*"*			
Duplicate (0100802-DUP1)			Prepared: 10/20/20 15:30		Analyzed: 10/23/20 14:26							
QC Source Sample: Non-SDG (A0J0737-01)												
Bromobenzene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100802 - EPA 5035A							**Soil**					
Duplicate (0100802-DUP1)			Prepared: 10/20/20 15:30		Analyzed: 10/23/20 14:26							
QC Source Sample: Non-SDG (A0J0737-01)												
Bromochloromethane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromodichloromethane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Bromoform	ND	62.6	125	ug/kg dry	50	---	ND	---	---	---	30%	
Bromomethane	ND	626	626	ug/kg dry	50	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Chlorobenzene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroethane	ND	626	626	ug/kg dry	50	---	ND	---	---	---	30%	
Chloroform	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Chloromethane	ND	157	313	ug/kg dry	50	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromochloromethane	ND	62.6	125	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	157	313	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Dibromomethane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	62.6	125	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	62.6	125	ug/kg dry	50	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	62.6	125	ug/kg dry	50	---	ND	---	---	---	30%	
Methylene chloride	ND	313	626	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100802 - EPA 5035A							**Soil**					
Duplicate (0100802-DUP1)			Prepared: 10/20/20 15:30 Analyzed: 10/23/20 14:26									
QC Source Sample: Non-SDG (A0J0737-01)												
1,1,2,2-Tetrachloroethane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	157	313	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	157	313	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	125	125	ug/kg dry	50	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	31.3	62.6	ug/kg dry	50	---	ND	---	---	---	30%	
Vinyl chloride	ND	15.7	31.3	ug/kg dry	50	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 94 %*		*Limits: 80-120 %*				*Dilution: 1x*			
Toluene-d8 (Surr)			*102 %*		*80-120 %*				*"*			
4-Bromofluorobenzene (Surr)			*100 %*		*79-120 %*				*"*			
Matrix Spike (0100802-MS1)			Prepared: 10/20/20 17:15 Analyzed: 10/23/20 15:20									
QC Source Sample: Non-SDG (A0J0737-04)												
5035A/8260D												
Bromobenzene	1540	19.4	38.8	ug/kg dry	50	1550	ND	99	78-121%	---	---	
Bromochloromethane	1390	38.8	77.6	ug/kg dry	50	1550	ND	89	78-125%	---	---	
Bromodichloromethane	1700	38.8	77.6	ug/kg dry	50	1550	ND	109	75-127%	---	---	
Bromoform	1540	77.6	155	ug/kg dry	50	1550	ND	99	67-132%	---	---	
Bromomethane	1220	776	776	ug/kg dry	50	1550	ND	78	53-143%	---	---	
Carbon tetrachloride	1760	38.8	77.6	ug/kg dry	50	1550	ND	113	70-135%	---	---	
Chlorobenzene	1570	19.4	38.8	ug/kg dry	50	1550	ND	101	79-120%	---	---	
Chloroethane	1350	776	776	ug/kg dry	50	1550	ND	87	59-139%	---	---	Q-54b
Chloroform	1670	38.8	77.6	ug/kg dry	50	1550	ND	107	78-123%	---	---	
Chloromethane	1310	194	388	ug/kg dry	50	1550	ND	84	50-136%	---	---	
2-Chlorotoluene	1520	38.8	77.6	ug/kg dry	50	1550	ND	98	75-122%	---	---	
4-Chlorotoluene	1700	38.8	77.6	ug/kg dry	50	1550	ND	110	72-124%	---	---	
Dibromochloromethane	1580	77.6	155	ug/kg dry	50	1550	ND	102	74-126%	---	---	
1,2-Dibromo-3-chloropropane	1430	194	388	ug/kg dry	50	1550	ND	92	61-132%	---	---	
1,2-Dibromoethane (EDB)	1630	38.8	77.6	ug/kg dry	50	1550	ND	105	78-122%	---	---	
Dibromomethane	1530	38.8	77.6	ug/kg dry	50	1550	ND	99	78-125%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100802 - EPA 5035A							**Soil**					
Matrix Spike (0100802-MS1)			Prepared: 10/20/20 17:15		Analyzed: 10/23/20 15:20							
QC Source Sample: Non-SDG (A0J0737-04)												
1,2-Dichlorobenzene	1570	19.4	38.8	ug/kg dry	50	1550	ND	101	78-121%	---	---	
1,3-Dichlorobenzene	1580	19.4	38.8	ug/kg dry	50	1550	ND	102	77-121%	---	---	
1,4-Dichlorobenzene	1450	19.4	38.8	ug/kg dry	50	1550	ND	93	75-120%	---	---	
Dichlorodifluoromethane	1400	77.6	155	ug/kg dry	50	1550	ND	90	29-149%	---	---	
1,1-Dichloroethane	1580	19.4	38.8	ug/kg dry	50	1550	ND	101	76-125%	---	---	
1,2-Dichloroethane (EDC)	1680	19.4	38.8	ug/kg dry	50	1550	ND	108	73-128%	---	---	
1,1-Dichloroethene	1180	19.4	38.8	ug/kg dry	50	1550	ND	76	70-131%	---	---	
cis-1,2-Dichloroethene	1510	19.4	38.8	ug/kg dry	50	1550	ND	97	77-123%	---	---	
trans-1,2-Dichloroethene	1530	19.4	38.8	ug/kg dry	50	1550	ND	99	74-125%	---	---	
1,2-Dichloropropane	1530	19.4	38.8	ug/kg dry	50	1550	ND	99	76-123%	---	---	
1,3-Dichloropropane	1690	38.8	77.6	ug/kg dry	50	1550	ND	109	77-121%	---	---	
2,2-Dichloropropane	1660	38.8	77.6	ug/kg dry	50	1550	ND	107	67-133%	---	---	Q-54a
1,1-Dichloropropene	1510	38.8	77.6	ug/kg dry	50	1550	ND	97	76-125%	---	---	
cis-1,3-Dichloropropene	1500	38.8	77.6	ug/kg dry	50	1550	ND	97	74-126%	---	---	
trans-1,3-Dichloropropene	1550	77.6	155	ug/kg dry	50	1550	ND	100	71-130%	---	---	
Hexachlorobutadiene	1330	77.6	155	ug/kg dry	50	1550	ND	86	61-135%	---	---	
Methylene chloride	1360	388	776	ug/kg dry	50	1550	ND	87	70-128%	---	---	
1,1,1,2-Tetrachloroethane	1570	38.8	77.6	ug/kg dry	50	1550	ND	101	78-125%	---	---	
1,1,2,2-Tetrachloroethane	1860	38.8	77.6	ug/kg dry	50	1550	ND	120	70-124%	---	---	
Tetrachloroethene (PCE)	1410	19.4	38.8	ug/kg dry	50	1550	ND	91	73-128%	---	---	
1,2,3-Trichlorobenzene	1410	194	388	ug/kg dry	50	1550	ND	91	66-130%	---	---	
1,2,4-Trichlorobenzene	1340	194	388	ug/kg dry	50	1550	ND	87	67-129%	---	---	
1,1,1-Trichloroethane	1710	19.4	38.8	ug/kg dry	50	1550	ND	110	73-130%	---	---	
1,1,2-Trichloroethane	1610	19.4	38.8	ug/kg dry	50	1550	ND	104	78-121%	---	---	
Trichloroethene (TCE)	1390	19.4	38.8	ug/kg dry	50	1550	ND	90	77-123%	---	---	
Trichlorofluoromethane	1980	155	155	ug/kg dry	50	1550	ND	127	62-140%	---	---	Q-54c
1,2,3-Trichloropropane	1620	38.8	77.6	ug/kg dry	50	1550	ND	104	73-125%	---	---	
Vinyl chloride	1160	19.4	38.8	ug/kg dry	50	1550	ND	74	56-135%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 91 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*101 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*79-120 %*			*"*				

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100846 - EPA 5030B							**Water**					
Blank (0100846-BLK1)			Prepared: 10/24/20 07:00		Analyzed: 10/24/20 09:51							
EPA 8260D												
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	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	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	---	---	---	---	---	---	
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	1.00	2.00	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	---	---	---	---	---	

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100846 - EPA 5030B							**Water**					
Blank (0100846-BLK1)			Prepared: 10/24/20 07:00		Analyzed: 10/24/20 09:51							
1,1,1,2-Tetrachloroethane	ND	0.500	1.00	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	---	---	---	---	---	---	
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	---	---	---	---	---	---	
Vinyl chloride	ND	0.200	0.400	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		*Recovery:*	*100 %*	*Limits:*	*80-120 %*		*Dilution:*	*1x*				
Toluene-d8 (Surr)			*102 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*			*"*				
LCS (0100846-BS1)			Prepared: 10/24/20 07:00		Analyzed: 10/24/20 08:54							
EPA 8260D												
Bromobenzene	19.2	0.250	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Bromochloromethane	20.9	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
Bromodichloromethane	18.9	0.500	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Bromoform	17.9	1.00	2.00	ug/L	1	20.0	---	90	80-120%	---	---	
Bromomethane	15.2	5.00	5.00	ug/L	1	20.0	---	**76**	**80-120%**	---	---	Q-55
Carbon tetrachloride	22.0	0.500	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
Chlorobenzene	19.8	0.250	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Chloroethane	18.7	5.00	5.00	ug/L	1	20.0	---	94	80-120%	---	---	
Chloroform	20.5	0.500	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Chloromethane	22.5	2.50	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
2-Chlorotoluene	20.9	0.500	1.00	ug/L	1	20.0	---	105	80-120%	---	---	
4-Chlorotoluene	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Dibromochloromethane	18.5	0.500	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,2-Dibromo-3-chloropropane	18.0	2.50	5.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,2-Dibromoethane (EDB)	19.6	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Dibromomethane	20.2	0.500	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,2-Dichlorobenzene	20.6	0.250	0.500	ug/L	1	20.0	---	103	80-120%	---	---	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100846 - EPA 5030B							**Water**					
LCS (0100846-BS1)			Prepared: 10/24/20 07:00		Analyzed: 10/24/20 08:54							
1,3-Dichlorobenzene	20.8	0.250	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
1,4-Dichlorobenzene	19.0	0.250	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
Dichlorodifluoromethane	18.3	0.500	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,1-Dichloroethane	20.0	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,2-Dichloroethane (EDC)	20.1	0.200	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1-Dichloroethene	20.4	0.200	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
cis-1,2-Dichloroethene	21.3	0.200	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
trans-1,2-Dichloroethene	21.0	0.200	0.400	ug/L	1	20.0	---	105	80-120%	---	---	
1,2-Dichloropropane	19.7	0.250	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
1,3-Dichloropropane	20.8	0.500	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
2,2-Dichloropropane	27.0	0.500	1.00	ug/L	1	20.0	---	**135**	**80-120%**	---	---	Q-56
1,1-Dichloropropene	21.6	0.500	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
cis-1,3-Dichloropropene	19.9	0.500	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
trans-1,3-Dichloropropene	19.8	1.00	2.00	ug/L	1	20.0	---	99	80-120%	---	---	
Hexachlorobutadiene	22.4	2.50	5.00	ug/L	1	20.0	---	112	80-120%	---	---	
Methylene chloride	18.7	5.00	10.0	ug/L	1	20.0	---	93	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.2	0.500	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,1,2,2-Tetrachloroethane	19.6	0.250	0.500	ug/L	1	20.0	---	98	80-120%	---	---	
Tetrachloroethene (PCE)	20.5	0.200	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,3-Trichlorobenzene	22.1	1.00	2.00	ug/L	1	20.0	---	110	80-120%	---	---	
1,2,4-Trichlorobenzene	21.3	1.00	2.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,1,1-Trichloroethane	21.6	0.200	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,2-Trichloroethane	20.6	0.250	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
Trichloroethene (TCE)	19.5	0.200	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
Trichlorofluoromethane	19.4	1.00	2.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2,3-Trichloropropane	19.8	0.500	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Vinyl chloride	19.2	0.200	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*100 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*97 %*		*80-120 %*			*"*				
Duplicate (0100846-DUP1)			Prepared: 10/24/20 09:52		Analyzed: 10/24/20 10:46							**V-01**
QC Source Sample: Non-SDG (A0J0578-01)												
Bromobenzene	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100846 - EPA 5030B							**Water**					
Duplicate (0100846-DUP1)			Prepared: 10/24/20 09:52		Analyzed: 10/24/20 10:46							**V-01**
QC Source Sample: Non-SDG (A0J0578-01)												
Bromochloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromodichloromethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	
Bromoform	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
Bromomethane	ND	5.00	5.00	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%	
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	**0.820**	0.200	0.400	ug/L	1	---	0.850	---	---	4	30%	
cis-1,2-Dichloroethene	**81.8**	0.200	0.400	ug/L	1	---	81.1	---	---	0.9	30%	
trans-1,2-Dichloroethene	ND	0.200	0.400	ug/L	1	---	0.200	---	---	***	**30%**	Q-05
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	1.00	2.00	ug/L	1	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	2.50	5.00	ug/L	1	---	ND	---	---	---	30%	
Methylene chloride	ND	5.00	10.0	ug/L	1	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100846 - EPA 5030B							**Water**					
Duplicate (0100846-DUP1)			Prepared: 10/24/20 09:52		Analyzed: 10/24/20 10:46							**V-01**
QC Source Sample: Non-SDG (A0J0578-01)												
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	ug/L	1	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	**0.320**	0.200	0.400	ug/L	1	---	0.300	---	---	6	30%	J
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)	**18.0**	0.200	0.400	ug/L	1	---	18.1	---	---	0.6	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%	
Vinyl chloride	**0.590**	0.200	0.400	ug/L	1	---	0.570	---	---	3	30%	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 102 %*		*Limits: 80-120 %*							*Dilution: 1x*
Toluene-d8 (Surr)			*101 %*		*80-120 %*							*"*
4-Bromofluorobenzene (Surr)			*103 %*		*80-120 %*							*"*
Matrix Spike (0100846-MS1)			Prepared: 10/24/20 09:52		Analyzed: 10/24/20 11:41							
QC Source Sample: Non-SDG (A0J0578-03)												
EPA 8260D												
Bromobenzene	19.7	0.250	0.500	ug/L	1	20.0	ND	98	80-120%	---	---	
Bromochloromethane	22.0	0.500	1.00	ug/L	1	20.0	ND	110	78-123%	---	---	
Bromodichloromethane	19.8	0.500	1.00	ug/L	1	20.0	ND	99	79-125%	---	---	
Bromoform	17.7	1.00	2.00	ug/L	1	20.0	ND	89	66-130%	---	---	
Bromomethane	16.5	5.00	5.00	ug/L	1	20.0	ND	83	53-141%	---	---	Q-54d
Carbon tetrachloride	23.7	0.500	1.00	ug/L	1	20.0	ND	119	72-136%	---	---	
Chlorobenzene	20.8	0.250	0.500	ug/L	1	20.0	ND	104	80-120%	---	---	
Chloroethane	21.1	5.00	5.00	ug/L	1	20.0	ND	106	60-138%	---	---	
Chloroform	21.8	0.500	1.00	ug/L	1	20.0	ND	109	79-124%	---	---	
Chloromethane	24.8	2.50	5.00	ug/L	1	20.0	ND	124	50-139%	---	---	
2-Chlorotoluene	21.7	0.500	1.00	ug/L	1	20.0	ND	109	79-122%	---	---	
4-Chlorotoluene	21.4	0.500	1.00	ug/L	1	20.0	ND	107	78-122%	---	---	
Dibromochloromethane	19.1	0.500	1.00	ug/L	1	20.0	ND	95	74-126%	---	---	
1,2-Dibromo-3-chloropropane	18.0	2.50	5.00	ug/L	1	20.0	ND	90	62-128%	---	---	
1,2-Dibromoethane (EDB)	20.1	0.250	0.500	ug/L	1	20.0	ND	101	77-121%	---	---	
Dibromomethane	20.8	0.500	1.00	ug/L	1	20.0	ND	104	79-123%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Halogenated 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 0100846 - EPA 5030B							**Water**					
Matrix Spike (0100846-MS1)			Prepared: 10/24/20 09:52		Analyzed: 10/24/20 11:41							
QC Source Sample: Non-SDG (A0J0578-03)												
1,2-Dichlorobenzene	21.1	0.250	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
1,3-Dichlorobenzene	21.1	0.250	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
1,4-Dichlorobenzene	19.3	0.250	0.500	ug/L	1	20.0	ND	97	79-120%	---	---	
Dichlorodifluoromethane	20.1	0.500	1.00	ug/L	1	20.0	ND	100	32-152%	---	---	
1,1-Dichloroethane	21.4	0.200	0.400	ug/L	1	20.0	ND	107	77-125%	---	---	
1,2-Dichloroethane (EDC)	21.4	0.200	0.400	ug/L	1	20.0	ND	107	73-128%	---	---	
1,1-Dichloroethene	21.7	0.200	0.400	ug/L	1	20.0	ND	109	71-131%	---	---	
cis-1,2-Dichloroethene	28.3	0.200	0.400	ug/L	1	20.0	5.06	116	78-123%	---	---	
trans-1,2-Dichloroethene	22.5	0.200	0.400	ug/L	1	20.0	ND	113	75-124%	---	---	
1,2-Dichloropropane	20.6	0.250	0.500	ug/L	1	20.0	ND	103	78-122%	---	---	
1,3-Dichloropropane	21.5	0.500	1.00	ug/L	1	20.0	ND	108	80-120%	---	---	
2,2-Dichloropropane	27.8	0.500	1.00	ug/L	1	20.0	ND	139	60-139%	---	---	Q-54
1,1-Dichloropropene	23.2	0.500	1.00	ug/L	1	20.0	ND	116	79-125%	---	---	
cis-1,3-Dichloropropene	18.7	0.500	1.00	ug/L	1	20.0	ND	93	75-124%	---	---	
trans-1,3-Dichloropropene	19.7	1.00	2.00	ug/L	1	20.0	ND	98	73-127%	---	---	
Hexachlorobutadiene	22.4	2.50	5.00	ug/L	1	20.0	ND	112	66-134%	---	---	
Methylene chloride	19.4	5.00	10.0	ug/L	1	20.0	ND	97	74-124%	---	---	
1,1,1,2-Tetrachloroethane	20.1	0.500	1.00	ug/L	1	20.0	ND	101	78-124%	---	---	
1,1,2,2-Tetrachloroethane	20.1	0.250	0.500	ug/L	1	20.0	ND	100	71-121%	---	---	
Tetrachloroethene (PCE)	22.9	0.200	0.400	ug/L	1	20.0	1.22	108	74-129%	---	---	
1,2,3-Trichlorobenzene	22.8	1.00	2.00	ug/L	1	20.0	ND	114	69-129%	---	---	
1,2,4-Trichlorobenzene	21.6	1.00	2.00	ug/L	1	20.0	ND	108	69-130%	---	---	
1,1,1-Trichloroethane	22.7	0.200	0.400	ug/L	1	20.0	ND	113	74-131%	---	---	
1,1,2-Trichloroethane	21.4	0.250	0.500	ug/L	1	20.0	ND	107	80-120%	---	---	
Trichloroethene (TCE)	47.7	0.200	0.400	ug/L	1	20.0	26.0	108	79-123%	---	---	
Trichlorofluoromethane	21.3	1.00	2.00	ug/L	1	20.0	ND	106	65-141%	---	---	
1,2,3-Trichloropropane	20.6	0.500	1.00	ug/L	1	20.0	ND	103	73-122%	---	---	
Vinyl chloride	20.9	0.200	0.400	ug/L	1	20.0	ND	105	58-137%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*		*Limits: 80-120 %*			*Dilution: 1x*				
Toluene-d8 (Surr)			*99 %*		*80-120 %*			*"*				
4-Bromofluorobenzene (Surr)			*95 %*		*80-120 %*			*"*				

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100700 - EPA 3546							**Soil**					
Blank (0100700-BLK1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 07:53							**C-07**
EPA 8082A												
Aroclor 1016	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	**4.22**	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B
Aroclor 1242	**2.13**	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	B-02, J
Aroclor 1248	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1262	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1268	ND	1.82	3.64	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 111 %*		*Limits: 60-125 %*			*Dilution: 1x*				
LCS (0100700-BS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 08:10							**C-07**
EPA 8082A												
Aroclor 1016	196	2.00	4.00	ug/kg wet	1	250	---	79	47-134%	---	---	
Aroclor 1260	254	2.00	4.00	ug/kg wet	1	250	---	101	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 113 %*		*Limits: 60-125 %*			*Dilution: 1x*				
Duplicate (0100700-DUP2)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 12:52							**C-07**
QC Source Sample: Non-SDG (A0J0358-02RE1)												
Aroclor 1016	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1221	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1232	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1242	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1248	**1350**	25.9	51.8	ug/kg dry	5	---	1130	---	---	18	30%	X
Aroclor 1254	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1260	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1262	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Aroclor 1268	ND	25.9	51.8	ug/kg dry	5	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 88 %*		*Limits: 60-125 %*			*Dilution: 5x*				
Matrix Spike (0100700-MS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 11:41							**C-07, Q-43**
QC Source Sample: Non-SDG (A0J0358-02RE1)												

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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100700 - EPA 3546							**Soil**					
Matrix Spike (0100700-MS1)			Prepared: 10/21/20 10:03		Analyzed: 10/22/20 11:41							**C-07, Q-43**
QC Source Sample: Non-SDG (A0J0358-02RE1)												
EPA 8082A												
Aroclor 1016	959	25.5	51.0	ug/kg dry	5	255	ND	**376**	**47-134%**	---	---	
Aroclor 1260	299	25.5	51.0	ug/kg dry	5	255	ND	117	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*		*Limits: 60-125 %*				*Dilution: 5x*			

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0110021 - EPA 3510C (Neutral pH)							**Water**					
Blank (0110021-BLK1)			Prepared: 11/02/20 10:22		Analyzed: 11/03/20 08:03							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1262	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1268	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 93 %*		*Limits: 40-135 %*				*Dilution: 1x*			
LCS (0110021-BS1)			Prepared: 11/02/20 10:22		Analyzed: 11/03/20 08:20							**C-07**
EPA 8082A												
Aroclor 1016	0.936	0.0100	0.0200	ug/L	1	1.25	---	75	46-129%	---	---	
Aroclor 1260	1.18	0.0100	0.0200	ug/L	1	1.25	---	95	45-134%	---	---	Q-41
Surr: Decachlorobiphenyl (Surr)			*Recovery: 94 %*		*Limits: 40-135 %*				*Dilution: 1x*			
LCS Dup (0110021-BSD1)			Prepared: 11/02/20 10:22		Analyzed: 11/03/20 08:38							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.783	0.0100	0.0200	ug/L	1	1.25	---	63	46-129%	18	30%	
Aroclor 1260	1.15	0.0100	0.0200	ug/L	1	1.25	---	92	45-134%	3	30%	Q-41
Surr: Decachlorobiphenyl (Surr)			*Recovery: 95 %*		*Limits: 40-135 %*				*Dilution: 1x*			

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100638 - EPA 3510C (Neutral pH)							**Water**					
Blank (0100638-BLK1)			Prepared: 10/19/20 15:24 Analyzed: 10/21/20 13:45									
EPA 8081B												
Aldrin	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
alpha-BHC	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
beta-BHC	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
delta-BHC	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Dieldrin	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Endosulfan I	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Endosulfan II	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Endrin	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Endrin ketone	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Heptachlor	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Methoxychlor	ND	0.0136	0.0273	ug/L	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	0.171	0.341	ug/L	1	---	---	---	---	---	---	
Toxaphene (Total)	ND	0.171	0.341	ug/L	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0136	0.0273	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Mirex	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Oxychlordane	ND	0.00455	0.00909	ug/L	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 43 %*			*Limits: 25-140 %*			*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*70 %*			*30-135 %*			*"*			

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100638 - EPA 3510C (Neutral pH)							**Water**					
LCS (0100638-BS1)			Prepared: 10/19/20 15:24 Analyzed: 10/21/20 14:01									
EPA 8081B												
Aldrin	0.276	0.00500	0.0100	ug/L	1	0.500	---	55	45-134%	---	---	
alpha-BHC	0.437	0.00500	0.0100	ug/L	1	0.500	---	87	54-138%	---	---	
beta-BHC	0.440	0.00500	0.0100	ug/L	1	0.500	---	88	56-136%	---	---	
delta-BHC	0.437	0.00500	0.0100	ug/L	1	0.500	---	87	52-142%	---	---	
gamma-BHC (Lindane)	0.446	0.00500	0.0100	ug/L	1	0.500	---	89	59-134%	---	---	
cis-Chlordane	0.400	0.00500	0.0100	ug/L	1	0.500	---	80	60-129%	---	---	
trans-Chlordane	0.392	0.00500	0.0100	ug/L	1	0.500	---	78	56-136%	---	---	
4,4'-DDD	0.419	0.00500	0.0100	ug/L	1	0.500	---	84	56-143%	---	---	
4,4'-DDE	0.393	0.00500	0.0100	ug/L	1	0.500	---	79	57-135%	---	---	
4,4'-DDT	0.402	0.00500	0.0100	ug/L	1	0.500	---	80	51-143%	---	---	
Dieldrin	0.424	0.00500	0.0100	ug/L	1	0.500	---	85	60-136%	---	---	
Endosulfan I	0.431	0.00500	0.0100	ug/L	1	0.500	---	86	62-126%	---	---	
Endosulfan II	0.429	0.00500	0.0100	ug/L	1	0.500	---	86	52-135%	---	---	
Endosulfan sulfate	0.422	0.00500	0.0100	ug/L	1	0.500	---	84	62-133%	---	---	
Endrin	0.448	0.00500	0.0100	ug/L	1	0.500	---	90	60-138%	---	---	
Endrin Aldehyde	0.365	0.00500	0.0100	ug/L	1	0.500	---	73	51-132%	---	---	
Endrin ketone	0.437	0.00500	0.0100	ug/L	1	0.500	---	87	58-134%	---	---	
Heptachlor	0.334	0.00500	0.0100	ug/L	1	0.500	---	67	54-130%	---	---	
Heptachlor epoxide	0.421	0.00500	0.0100	ug/L	1	0.500	---	84	61-133%	---	---	
Methoxychlor	0.423	0.0150	0.0300	ug/L	1	0.500	---	85	54-145%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 50 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*63 %*		*30-135 %*				*"*			
LCS (0100638-BS2)			Prepared: 10/19/20 15:24 Analyzed: 10/21/20 14:34									
EPA 8081B												
cis-Nonachlor	0.434	0.00500	0.0100	ug/L	1	0.500	---	87	75-125%	---	---	
trans-Nonachlor	0.421	0.00500	0.0100	ug/L	1	0.500	---	84	67-127%	---	---	
2,4'-DDD	0.449	0.00500	0.0100	ug/L	1	0.500	---	90	67-142%	---	---	
2,4'-DDE	0.441	0.00500	0.0100	ug/L	1	0.500	---	88	63-135%	---	---	
2,4'-DDT	0.469	0.00500	0.0100	ug/L	1	0.500	---	94	76-156%	---	---	
Hexachlorobenzene	0.393	0.0150	0.0300	ug/L	1	0.500	---	79	28-136%	---	---	
Hexachlorobutadiene	0.348	0.00500	0.0100	ug/L	1	0.500	---	70	16-125%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100638 - EPA 3510C (Neutral pH)							**Water**					
LCS (0100638-BS2)			Prepared: 10/19/20 15:24		Analyzed: 10/21/20 14:34							
Mirex	0.421	0.00500	0.0100	ug/L	1	0.500	---	84	51-127%	---	---	
Oxychlordane	0.400	0.00500	0.0100	ug/L	1	0.500	---	80	62-125%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 64 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*72 %*		*30-135 %*				*"*			
LCS Dup (0100638-BSD1)			Prepared: 10/19/20 15:24		Analyzed: 10/21/20 14:18							**Q-19**
EPA 8081B												
Aldrin	0.281	0.00500	0.0100	ug/L	1	0.500	---	56	45-134%	2	30%	
alpha-BHC	0.454	0.00500	0.0100	ug/L	1	0.500	---	91	54-138%	4	30%	
beta-BHC	0.469	0.00500	0.0100	ug/L	1	0.500	---	94	56-136%	6	30%	
delta-BHC	0.444	0.00500	0.0100	ug/L	1	0.500	---	89	52-142%	2	30%	
gamma-BHC (Lindane)	0.453	0.00500	0.0100	ug/L	1	0.500	---	91	59-134%	2	30%	
cis-Chlordane	0.404	0.00500	0.0100	ug/L	1	0.500	---	81	60-129%	1	30%	
trans-Chlordane	0.397	0.00500	0.0100	ug/L	1	0.500	---	79	56-136%	1	30%	
4,4'-DDD	0.428	0.00500	0.0100	ug/L	1	0.500	---	86	56-143%	2	30%	
4,4'-DDE	0.398	0.00500	0.0100	ug/L	1	0.500	---	80	57-135%	1	30%	
4,4'-DDT	0.423	0.00500	0.0100	ug/L	1	0.500	---	85	51-143%	5	30%	
Dieldrin	0.426	0.00500	0.0100	ug/L	1	0.500	---	85	60-136%	0.5	30%	
Endosulfan I	0.440	0.00500	0.0100	ug/L	1	0.500	---	88	62-126%	2	30%	
Endosulfan II	0.451	0.00500	0.0100	ug/L	1	0.500	---	90	52-135%	5	30%	
Endosulfan sulfate	0.424	0.00500	0.0100	ug/L	1	0.500	---	85	62-133%	0.3	30%	
Endrin	0.465	0.00500	0.0100	ug/L	1	0.500	---	93	60-138%	4	30%	
Endrin Aldehyde	0.381	0.00500	0.0100	ug/L	1	0.500	---	76	51-132%	4	30%	
Endrin ketone	0.447	0.00500	0.0100	ug/L	1	0.500	---	89	58-134%	2	30%	
Heptachlor	0.329	0.00500	0.0100	ug/L	1	0.500	---	66	54-130%	1	30%	
Heptachlor epoxide	0.429	0.00500	0.0100	ug/L	1	0.500	---	86	61-133%	2	30%	
Methoxychlor	0.440	0.0150	0.0300	ug/L	1	0.500	---	88	54-145%	4	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 49 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*66 %*		*30-135 %*				*"*			
LCS Dup (0100638-BSD2)			Prepared: 10/19/20 15:24		Analyzed: 10/21/20 14:51							**Q-19**
EPA 8081B												
cis-Nonachlor	0.435	0.00500	0.0100	ug/L	1	0.500	---	87	75-125%	0.2	30%	
trans-Nonachlor	0.407	0.00500	0.0100	ug/L	1	0.500	---	81	67-127%	3	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100638 - EPA 3510C (Neutral pH)							**Water**					
LCS Dup (0100638-BSD2)			Prepared: 10/19/20 15:24		Analyzed: 10/21/20 14:51							**Q-19**
2,4'-DDD	0.449	0.00500	0.0100	ug/L	1	0.500	---	90	67-142%	0.04	30%	
2,4'-DDE	0.437	0.00500	0.0100	ug/L	1	0.500	---	87	63-135%	1	30%	
2,4'-DDT	0.467	0.00500	0.0100	ug/L	1	0.500	---	93	76-156%	0.3	30%	
Hexachlorobenzene	0.360	0.0150	0.0300	ug/L	1	0.500	---	72	28-136%	9	30%	
Hexachlorobutadiene	0.237	0.00500	0.0100	ug/L	1	0.500	---	47	16-125%	**38**	**30%**	Q-24
Mirex	0.408	0.00500	0.0100	ug/L	1	0.500	---	82	51-127%	3	30%	
Oxychlordane	0.389	0.00500	0.0100	ug/L	1	0.500	---	78	62-125%	3	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 46 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*66 %*		*30-135 %*				*"*			

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
Blank (0100905-BLK2)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 19:39							**C-05**
EPA 8081B												
Aldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	27.3	54.5	ug/kg wet	1	---	---	---	---	---	---	
cis-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDD	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDE	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
2,4'-DDT	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Oxychlordane	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
trans-Nonachlor	ND	0.909	1.82	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 57 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*109 %*		*55-130 %*			*"*				Q-41
LCS (0100905-BS3)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 19:57							**C-05**
EPA 8081B												
Aldrin	32.5	1.00	2.00	ug/kg wet	1	50.0	---	65	45-136%	---	---	
gamma-BHC (Lindane)	35.1	1.00	2.00	ug/kg wet	1	50.0	---	70	49-135%	---	---	
cis-Chlordane	36.6	1.00	2.00	ug/kg wet	1	50.0	---	73	54-133%	---	---	
trans-Chlordane	36.3	1.00	2.00	ug/kg wet	1	50.0	---	73	53-135%	---	---	
4,4'-DDD	44.5	1.00	2.00	ug/kg wet	1	50.0	---	89	56-139%	---	---	
4,4'-DDE	39.2	1.00	2.00	ug/kg wet	1	50.0	---	78	56-134%	---	---	
4,4'-DDT	45.2	1.00	2.00	ug/kg wet	1	50.0	---	90	50-141%	---	---	
Dieldrin	42.4	1.00	2.00	ug/kg wet	1	50.0	---	85	56-136%	---	---	
Endosulfan I	38.8	1.00	2.00	ug/kg wet	1	50.0	---	78	53-132%	---	---	
Endosulfan II	44.3	1.00	2.00	ug/kg wet	1	50.0	---	89	53-134%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
LCS (0100905-BS3)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 19:57							**C-05**
Endosulfan sulfate	45.1	1.00	2.00	ug/kg wet	1	50.0	---	90	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 63 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*100 %*	*55-130 %*			*"*					
LCS (0100905-BS4)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 20:14							**C-05**
EPA 8081B												
cis-Nonachlor	42.8	1.00	2.00	ug/kg wet	1	50.0	---	86	68-121%	---	---	
2,4'-DDD	43.1	1.00	2.00	ug/kg wet	1	50.0	---	86	58-128%	---	---	
2,4'-DDE	36.5	1.00	2.00	ug/kg wet	1	50.0	---	73	49-125%	---	---	
2,4'-DDT	44.5	1.00	2.00	ug/kg wet	1	50.0	---	89	66-145%	---	---	
Oxychlordane	35.7	1.00	2.00	ug/kg wet	1	50.0	---	71	56-120%	---	---	
trans-Nonachlor	37.2	1.00	2.00	ug/kg wet	1	50.0	---	74	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 62 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*98 %*	*55-130 %*			*"*					
Duplicate (0100905-DUP2)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 20:48							**C-05**
QC Source Sample: Non-SDG (A0J0503-02RE2)												
Aldrin	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	2.59	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDE	ND	2.59	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
4,4'-DDT	**8.73**	1.30	2.59	ug/kg dry	1	---	22.5	---	---	**88**	**30%**	Q-05
Dieldrin	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan I	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan II	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	38.9	77.7	ug/kg dry	1	---	ND	---	---	---	30%	
cis-Nonachlor	ND	2.59	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDD	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDE	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
2,4'-DDT	**1.33**	1.30	2.59	ug/kg dry	1	---	3.29	---	---	**85**	**30%**	J, P-11

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (0100905-DUP2)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 20:48							**C-05**
QC Source Sample: Non-SDG (A0J0503-02RE2)												
Oxychlordane	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
trans-Nonachlor	ND	1.30	2.59	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 55 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*90 %*		*55-130 %*				*"*			
Matrix Spike (0100905-MS3)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 21:23							**C-05**
QC Source Sample: Non-SDG (A0J0503-13RE2)												
EPA 8081B												
Aldrin	35.6	1.12	2.25	ug/kg dry	1	56.2	ND	63	45-136%	---	---	
gamma-BHC (Lindane)	33.9	1.12	2.25	ug/kg dry	1	56.2	ND	60	49-135%	---	---	
cis-Chlordane	43.0	1.12	2.25	ug/kg dry	1	56.2	ND	77	54-133%	---	---	
trans-Chlordane	43.0	1.12	2.25	ug/kg dry	1	56.2	ND	76	53-135%	---	---	
4,4'-DDD	50.3	1.12	2.25	ug/kg dry	1	56.2	ND	89	56-139%	---	---	
4,4'-DDE	45.7	1.12	2.25	ug/kg dry	1	56.2	ND	81	56-134%	---	---	
4,4'-DDT	51.3	1.12	2.25	ug/kg dry	1	56.2	ND	91	50-141%	---	---	
Dieldrin	49.2	1.12	2.25	ug/kg dry	1	56.2	ND	88	56-136%	---	---	
Endosulfan I	45.3	1.12	2.25	ug/kg dry	1	56.2	ND	81	53-132%	---	---	
Endosulfan II	50.0	1.12	2.25	ug/kg dry	1	56.2	ND	89	53-134%	---	---	
Endosulfan sulfate	52.8	1.12	2.25	ug/kg dry	1	56.2	ND	94	55-136%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 51 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*96 %*		*55-130 %*				*"*			
Matrix Spike (0100905-MS4)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 21:40							**C-05**
QC Source Sample: Non-SDG (A0J0503-13RE2)												
EPA 8081B												
cis-Nonachlor	50.1	1.12	2.25	ug/kg dry	1	56.2	ND	89	68-121%	---	---	
2,4'-DDD	50.1	1.12	2.25	ug/kg dry	1	56.2	ND	89	58-128%	---	---	
2,4'-DDE	42.0	1.12	2.25	ug/kg dry	1	56.2	ND	75	49-125%	---	---	
2,4'-DDT	50.1	1.12	2.25	ug/kg dry	1	56.2	ND	89	66-145%	---	---	
Oxychlordane	38.1	1.12	2.25	ug/kg dry	1	56.2	ND	68	56-120%	---	---	
trans-Nonachlor	42.5	1.12	2.25	ug/kg dry	1	56.2	ND	76	60-120%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 47 %*		*Limits: 42-129 %*				*Dilution: 1x*			

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Darrell Auvil, Project Manager

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6700 S.W. Sandburg Street
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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100905 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (0100905-MS4)			Prepared: 10/23/20 07:03		Analyzed: 10/28/20 21:40							**C-05**
QC Source Sample: Non-SDG (A0J0503-13RE2)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 99 %*		*Limits: 55-130 %*		*Dilution: 1x*					

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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 0100642 - EPA 3510C (Acid Extraction)							**Water**					
Blank (0100642-BLK2)			Prepared: 10/20/20 07:05		Analyzed: 10/20/20 13:34							
EPA 8270E												
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	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	0.0909	0.182	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	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 82 %*		*Limits: 44-120 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*62 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*26 %*		*10-133 %*			*"*				
p-Terphenyl-d14 (Surr)			*77 %*		*50-134 %*			*"*				
2-Fluorophenol (Surr)			*41 %*		*19-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*84 %*		*43-140 %*			*"*				

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100642 - EPA 3510C (Acid Extraction)							**Water**					
LCS (0100642-BS2)			Prepared: 10/20/20 07:05 Analyzed: 10/20/20 14:10									
EPA 8270E												
Acenaphthene	3.46	0.0200	0.0400	ug/L	2	4.00	---	86	47-122%	---	---	
Acenaphthylene	3.70	0.0200	0.0400	ug/L	2	4.00	---	92	41-130%	---	---	
Anthracene	3.58	0.0200	0.0400	ug/L	2	4.00	---	90	57-123%	---	---	
Benz(a)anthracene	3.88	0.0200	0.0400	ug/L	2	4.00	---	97	58-125%	---	---	
Benzo(a)pyrene	3.83	0.0300	0.0600	ug/L	2	4.00	---	96	54-128%	---	---	
Benzo(b)fluoranthene	3.82	0.0300	0.0600	ug/L	2	4.00	---	96	53-131%	---	---	
Benzo(k)fluoranthene	3.69	0.0300	0.0600	ug/L	2	4.00	---	92	57-129%	---	---	
Benzo(g,h,i)perylene	3.74	0.0200	0.0400	ug/L	2	4.00	---	93	50-134%	---	---	
Chrysene	3.88	0.0200	0.0400	ug/L	2	4.00	---	97	59-123%	---	---	
Dibenz(a,h)anthracene	3.59	0.0200	0.0400	ug/L	2	4.00	---	90	51-134%	---	---	
Fluoranthene	3.94	0.0200	0.0400	ug/L	2	4.00	---	98	57-128%	---	---	
Fluorene	3.48	0.0200	0.0400	ug/L	2	4.00	---	87	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.48	0.0200	0.0400	ug/L	2	4.00	---	87	52-134%	---	---	
1-Methylnaphthalene	3.44	0.0400	0.0800	ug/L	2	4.00	---	86	41-120%	---	---	
2-Methylnaphthalene	3.43	0.0400	0.0800	ug/L	2	4.00	---	86	40-121%	---	---	
Naphthalene	3.18	0.0400	0.0800	ug/L	2	4.00	---	79	40-121%	---	---	
Phenanthrene	3.31	0.0200	0.0400	ug/L	2	4.00	---	83	59-120%	---	---	
Pyrene	3.89	0.0200	0.0400	ug/L	2	4.00	---	97	57-126%	---	---	
Carbazole	5.25	0.0300	0.0600	ug/L	2	4.00	---	**131**	**60-122%**	---	---	Q-29
Dibenzofuran	3.44	0.0200	0.0400	ug/L	2	4.00	---	86	53-120%	---	---	
Pentachlorophenol (PCP)	3.83	0.200	0.400	ug/L	2	4.00	---	96	35-138%	---	---	
Bis(2-ethylhexyl)phthalate	4.53	0.400	0.800	ug/L	2	4.00	---	113	55-135%	---	---	
Butyl benzyl phthalate	4.55	0.400	0.800	ug/L	2	4.00	---	114	53-134%	---	---	
Diethylphthalate	3.74	0.400	0.800	ug/L	2	4.00	---	93	56-125%	---	---	
Dimethylphthalate	3.81	0.400	0.800	ug/L	2	4.00	---	95	45-127%	---	---	
Di-n-butylphthalate	4.14	0.400	0.800	ug/L	2	4.00	---	103	59-127%	---	---	
Di-n-octyl phthalate	4.37	0.400	0.800	ug/L	2	4.00	---	109	51-140%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 90 %*		*Limits: 44-120 %*			*Dilution: 2x*				
2-Fluorobiphenyl (Surr)			*77 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*32 %*		*10-133 %*			*"*				
p-Terphenyl-d14 (Surr)			*95 %*		*50-134 %*			*"*				
2-Fluorophenol (Surr)			*47 %*		*19-120 %*			*"*				

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100642 - EPA 3510C (Acid Extraction)							**Water**					
LCS (0100642-BS2)			Prepared: 10/20/20 07:05		Analyzed: 10/20/20 14:10							
Surr: 2,4,6-Tribromophenol (Surr)			*Recovery: 96 %*	*Limits: 43-140 %*			*Dilution: 2x*					
LCS Dup (0100642-BSD2)			Prepared: 10/20/20 07:05		Analyzed: 10/20/20 14:46							**Q-19**
EPA 8270E												
Acenaphthene	3.39	0.0200	0.0400	ug/L	2	4.00	---	85	47-122%	2	30%	
Acenaphthylene	3.56	0.0200	0.0400	ug/L	2	4.00	---	89	41-130%	4	30%	
Anthracene	3.64	0.0200	0.0400	ug/L	2	4.00	---	91	57-123%	2	30%	
Benz(a)anthracene	3.80	0.0200	0.0400	ug/L	2	4.00	---	95	58-125%	2	30%	
Benzo(a)pyrene	3.85	0.0300	0.0600	ug/L	2	4.00	---	96	54-128%	0.5	30%	
Benzo(b)fluoranthene	3.84	0.0300	0.0600	ug/L	2	4.00	---	96	53-131%	0.3	30%	
Benzo(k)fluoranthene	3.61	0.0300	0.0600	ug/L	2	4.00	---	90	57-129%	2	30%	
Benzo(g,h,i)perylene	3.77	0.0200	0.0400	ug/L	2	4.00	---	94	50-134%	1	30%	
Chrysene	3.81	0.0200	0.0400	ug/L	2	4.00	---	95	59-123%	2	30%	
Dibenz(a,h)anthracene	3.54	0.0200	0.0400	ug/L	2	4.00	---	89	51-134%	1	30%	
Fluoranthene	3.76	0.0200	0.0400	ug/L	2	4.00	---	94	57-128%	5	30%	
Fluorene	3.43	0.0200	0.0400	ug/L	2	4.00	---	86	52-124%	1	30%	
Indeno(1,2,3-cd)pyrene	3.45	0.0200	0.0400	ug/L	2	4.00	---	86	52-134%	0.8	30%	
1-Methylnaphthalene	3.28	0.0400	0.0800	ug/L	2	4.00	---	82	41-120%	5	30%	
2-Methylnaphthalene	3.29	0.0400	0.0800	ug/L	2	4.00	---	82	40-121%	4	30%	
Naphthalene	3.02	0.0400	0.0800	ug/L	2	4.00	---	75	40-121%	5	30%	
Phenanthrene	3.42	0.0200	0.0400	ug/L	2	4.00	---	86	59-120%	3	30%	
Pyrene	3.79	0.0200	0.0400	ug/L	2	4.00	---	95	57-126%	3	30%	
Carbazole	4.83	0.0300	0.0600	ug/L	2	4.00	---	121	60-122%	8	30%	
Dibenzofuran	3.33	0.0200	0.0400	ug/L	2	4.00	---	83	53-120%	3	30%	
Pentachlorophenol (PCP)	3.92	0.200	0.400	ug/L	2	4.00	---	98	35-138%	2	30%	
Bis(2-ethylhexyl)phthalate	4.34	0.400	0.800	ug/L	2	4.00	---	108	55-135%	4	30%	
Butyl benzyl phthalate	4.45	0.400	0.800	ug/L	2	4.00	---	111	53-134%	2	30%	
Diethylphthalate	3.70	0.400	0.800	ug/L	2	4.00	---	92	56-125%	1	30%	
Dimethylphthalate	3.76	0.400	0.800	ug/L	2	4.00	---	94	45-127%	1	30%	
Di-n-butylphthalate	4.03	0.400	0.800	ug/L	2	4.00	---	101	59-127%	3	30%	
Di-n-octyl phthalate	4.41	0.400	0.800	ug/L	2	4.00	---	110	51-140%	0.8	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 87 %*	*Limits: 44-120 %*			*Dilution: 2x*					
2-Fluorobiphenyl (Surr)			*71 %*	*44-120 %*			*"*					
Phenol-d6 (Surr)			*30 %*	*10-133 %*			*"*					

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100642 - EPA 3510C (Acid Extraction)												**Water**
LCS Dup (0100642-BSD2)				Prepared: 10/20/20 07:05		Analyzed: 10/20/20 14:46						**Q-19**
Surr: p-Terphenyl-d14 (Surr)			*Recovery: 89 %*	*Limits: 50-134 %*		*Dilution: 2x*						
2-Fluorophenol (Surr)			*45 %*	*19-120 %*		*"*						
2,4,6-Tribromophenol (Surr)			*100 %*	*43-140 %*		*"*						

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100765 - EPA 3546							**Soil**					
Blank (0100765-BLK2)			Prepared: 10/22/20 10:45 Analyzed: 10/22/20 17:09									
EPA 8270E												
Acenaphthene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	1.76	3.53	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	2.36	4.70	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	1.17	2.36	ug/kg wet	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	17.6	35.3	ug/kg wet	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 75 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*69 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*64 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*84 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*68 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*69 %*		*39-132 %*			*"*				
LCS (0100765-BS2)			Prepared: 10/22/20 10:45 Analyzed: 10/22/20 17:45									**Q-18**
EPA 8270E												
Acenaphthene	441	2.66	5.34	ug/kg wet	2	533	---	83	40-123%	---	---	
Acenaphthylene	474	2.66	5.34	ug/kg wet	2	533	---	89	32-132%	---	---	
Anthracene	449	2.66	5.34	ug/kg wet	2	533	---	84	47-123%	---	---	
Benz(a)anthracene	487	2.66	5.34	ug/kg wet	2	533	---	91	49-126%	---	---	
Benzo(a)pyrene	499	4.00	8.00	ug/kg wet	2	533	---	94	45-129%	---	---	
Benzo(b)fluoranthene	490	4.00	8.00	ug/kg wet	2	533	---	92	45-132%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100765 - EPA 3546							**Soil**					
LCS (0100765-BS2)			Prepared: 10/22/20 10:45		Analyzed: 10/22/20 17:45							**Q-18**
Benzo(k)fluoranthene	466	4.00	8.00	ug/kg wet	2	533	---	87	47-132%	---	---	
Benzo(g,h,i)perylene	440	2.66	5.34	ug/kg wet	2	533	---	83	43-134%	---	---	
Chrysene	477	2.66	5.34	ug/kg wet	2	533	---	89	50-124%	---	---	
Dibenz(a,h)anthracene	453	2.66	5.34	ug/kg wet	2	533	---	85	45-134%	---	---	
Fluoranthene	488	2.66	5.34	ug/kg wet	2	533	---	92	50-127%	---	---	
Fluorene	433	2.66	5.34	ug/kg wet	2	533	---	81	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	437	2.66	5.34	ug/kg wet	2	533	---	82	45-133%	---	---	
2-Methylnaphthalene	467	5.34	10.7	ug/kg wet	2	533	---	88	38-122%	---	---	
Naphthalene	434	5.34	10.7	ug/kg wet	2	533	---	81	35-123%	---	---	
Phenanthrene	432	2.66	5.34	ug/kg wet	2	533	---	81	50-121%	---	---	
Pyrene	488	2.66	5.34	ug/kg wet	2	533	---	92	47-127%	---	---	
Bis(2-ethylhexyl)phthalate	573	40.0	80.0	ug/kg wet	2	533	---	107	51-133%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 89 %*		*Limits: 37-122 %*				*Dilution: 2x*			
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*86 %*		*33-122 %*				*"*			
p-Terphenyl-d14 (Surr)			*94 %*		*54-127 %*				*"*			
2-Fluorophenol (Surr)			*84 %*		*35-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*89 %*		*39-132 %*				*"*			
Duplicate (0100765-DUP2)			Prepared: 10/22/20 10:45		Analyzed: 10/22/20 18:58							
QC Source Sample: Non-SDG (A0J0503-06)												
Acenaphthene	**301**	56.1	113	ug/kg dry	40	---	764	---	---	**87**	**30%**	Q-04
Acenaphthylene	**92.8**	56.1	113	ug/kg dry	40	---	151	---	---	**47**	**30%**	Q-04, J
Anthracene	**405**	56.1	113	ug/kg dry	40	---	838	---	---	**70**	**30%**	Q-04
Benz(a)anthracene	**2700**	56.1	113	ug/kg dry	40	---	6460	---	---	**82**	**30%**	Q-04
Benzo(a)pyrene	**4060**	84.4	169	ug/kg dry	40	---	10000	---	---	**84**	**30%**	Q-04
Benzo(b)fluoranthene	**5420**	84.4	169	ug/kg dry	40	---	13000	---	---	**82**	**30%**	Q-04
Benzo(k)fluoranthene	**1990**	84.4	169	ug/kg dry	40	---	4060	---	---	**68**	**30%**	M-05, Q-04
Benzo(g,h,i)perylene	**3060**	56.1	113	ug/kg dry	40	---	7210	---	---	**81**	**30%**	Q-04
Chrysene	**3360**	56.1	113	ug/kg dry	40	---	8130	---	---	**83**	**30%**	Q-04
Dibenz(a,h)anthracene	**689**	56.1	113	ug/kg dry	40	---	1480	---	---	**73**	**30%**	Q-04
Fluoranthene	**4580**	56.1	113	ug/kg dry	40	---	10500	---	---	**78**	**30%**	Q-04
Fluorene	**130**	56.1	113	ug/kg dry	40	---	334	---	---	**88**	**30%**	Q-04
Indeno(1,2,3-cd)pyrene	**3030**	56.1	113	ug/kg dry	40	---	7020	---	---	**79**	**30%**	Q-04

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100765 - EPA 3546							**Soil**					
Duplicate (0100765-DUP2)			Prepared: 10/22/20 10:45		Analyzed: 10/22/20 18:58							
QC Source Sample: Non-SDG (A0J0503-06)												
2-Methylnaphthalene	**116**	113	225	ug/kg dry	40	---	187	---	---	**47**	**30%**	Q-04, J
Naphthalene	**277**	113	225	ug/kg dry	40	---	423	---	---	**42**	**30%**	Q-04
Phenanthrene	**2050**	56.1	113	ug/kg dry	40	---	4840	---	---	**81**	**30%**	Q-04
Pyrene	**4220**	56.1	113	ug/kg dry	40	---	9470	---	---	**77**	**30%**	Q-04
Bis(2-ethylhexyl)phthalate	ND	844	1690	ug/kg dry	40	---	ND	---	---	---	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 49 %*		*Limits: 37-122 %*		*Dilution: 40x*					S-05
2-Fluorobiphenyl (Surr)			*64 %*		*44-120 %*		*"*					S-05
Phenol-d6 (Surr)			*22 %*		*33-122 %*		*"*					S-05
p-Terphenyl-d14 (Surr)			*93 %*		*54-127 %*		*"*					S-05
2-Fluorophenol (Surr)			*38 %*		*35-120 %*		*"*					S-05
2,4,6-Tribromophenol (Surr)			*87 %*		*39-132 %*		*"*					S-05

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100878 - EPA 3051A							**Soil**					
Blank (0100878-BLK1)			Prepared: 10/26/20 11:03		Analyzed: 10/27/20 16:39							
EPA 6020A												
Arsenic	ND	0.481	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	0.962	1.92	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	0.0962	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	0.0385	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	1.92	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (0100878-BS1)			Prepared: 10/26/20 11:03		Analyzed: 10/27/20 16:43							
EPA 6020A												
Arsenic	51.4	0.500	1.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Cadmium	50.4	0.100	0.200	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Copper	50.6	1.00	2.00	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Lead	53.1	0.100	0.200	mg/kg wet	10	50.0	---	106	80-120%	---	---	
Mercury	1.00	0.0400	0.0800	mg/kg wet	10	1.00	---	100	80-120%	---	---	
Zinc	51.9	2.00	4.00	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Duplicate (0100878-DUP1)			Prepared: 10/26/20 11:03		Analyzed: 10/27/20 17:10							
QC Source Sample: Non-SDG (A0J0723-02)												
Arsenic	**5.56**	0.625	1.25	mg/kg dry	10	---	6.01	---	---	8	20%	
Cadmium	**0.484**	0.125	0.250	mg/kg dry	10	---	0.326	---	---	**39**	**20%**	Q-05
Copper	**23.2**	1.25	2.50	mg/kg dry	10	---	18.5	---	---	**23**	**20%**	Q-04
Lead	**63.8**	0.125	0.250	mg/kg dry	10	---	32.4	---	---	**65**	**20%**	Q-04
Mercury	**0.109**	0.0500	0.100	mg/kg dry	10	---	0.0663	---	---	**49**	**20%**	Q-05
Zinc	**151**	2.50	5.00	mg/kg dry	10	---	99.1	---	---	**41**	**20%**	Q-04
Matrix Spike (0100878-MS1)			Prepared: 10/26/20 11:03		Analyzed: 10/27/20 17:14							
QC Source Sample: Non-SDG (A0J0723-02)												
EPA 6020A												
Arsenic	67.0	0.613	1.23	mg/kg dry	10	61.3	6.01	100	75-125%	---	---	
Cadmium	61.1	0.123	0.245	mg/kg dry	10	61.3	0.326	99	75-125%	---	---	
Copper	79.8	1.23	2.45	mg/kg dry	10	61.3	18.5	100	75-125%	---	---	
Lead	102	0.123	0.245	mg/kg dry	10	61.3	32.4	113	75-125%	---	---	

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100878 - EPA 3051A							**Soil**					
Matrix Spike (0100878-MS1)			Prepared: 10/26/20 11:03		Analyzed: 10/27/20 17:14							
QC Source Sample: Non-SDG (A0J0723-02)												
Mercury	1.29	0.0490	0.0981	mg/kg dry	10	1.23	0.0663	100	75-125%	---	---	
Zinc	185	2.45	4.90	mg/kg dry	10	61.3	99.1	**140**	**75-125%**	---	---	Q-04

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100942 - EPA 3015A							**Water**					
Blank (0100942-BLK1)			Prepared: 10/27/20 15:58		Analyzed: 10/27/20 18:31							
EPA 6020A												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	0.100	0.200	ug/L	1	---	---	---	---	---	---	
Copper	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	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	ug/L	1	---	---	---	---	---	---	
LCS (0100942-BS1)			Prepared: 10/27/20 15:58		Analyzed: 10/27/20 18:45							
EPA 6020A												
Arsenic	56.8	0.500	1.00	ug/L	1	55.6	---	102	80-120%	---	---	
Cadmium	55.8	0.100	0.200	ug/L	1	55.6	---	100	80-120%	---	---	
Copper	55.8	1.00	2.00	ug/L	1	55.6	---	100	80-120%	---	---	
Lead	58.5	0.100	0.200	ug/L	1	55.6	---	105	80-120%	---	---	Q-41
Mercury	1.11	0.0400	0.0800	ug/L	1	1.11	---	99	80-120%	---	---	
Zinc	56.3	2.00	4.00	ug/L	1	55.6	---	101	80-120%	---	---	
Duplicate (0100942-DUP1)			Prepared: 10/27/20 15:58		Analyzed: 10/27/20 19:11							
QC Source Sample: Equipment Blank Soil (A0J0545-08RE1)												
EPA 6020A												
Arsenic	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Cadmium	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	
Copper	ND	1.00	2.00	ug/L	1	---	ND	---	---	---	20%	
Lead	ND	0.100	0.200	ug/L	1	---	ND	---	---	---	20%	Q-41
Mercury	ND	0.0400	0.0800	ug/L	1	---	ND	---	---	---	20%	
Zinc	ND	2.00	4.00	ug/L	1	---	ND	---	---	---	20%	
Matrix Spike (0100942-MS1)			Prepared: 10/27/20 15:58		Analyzed: 10/27/20 19:15							
QC Source Sample: Equipment Blank Soil (A0J0545-08RE1)												
EPA 6020A												
Arsenic	56.2	0.500	1.00	ug/L	1	55.6	ND	101	75-125%	---	---	
Cadmium	56.0	0.100	0.200	ug/L	1	55.6	ND	101	75-125%	---	---	
Copper	56.1	1.00	2.00	ug/L	1	55.6	ND	101	75-125%	---	---	

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3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020A (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100942 - EPA 3015A							**Water**					
Matrix Spike (0100942-MS1)			Prepared: 10/27/20 15:58		Analyzed: 10/27/20 19:15							
QC Source Sample: Equipment Blank Soil (A0J0545-08RE1)												
Lead	61.1	0.100	0.200	ug/L	1	55.6	ND	110	75-125%	---	---	Q-41
Mercury	1.18	0.0400	0.0800	ug/L	1	1.11	ND	106	75-125%	---	---	
Zinc	58.0	2.00	4.00	ug/L	1	55.6	ND	104	75-125%	---	---	

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

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 0100602 - Total Solids (Dry Weight)							**Soil**					
Duplicate (0100602-DUP1)			Prepared: 10/19/20 08:33		Analyzed: 10/20/20 08:57							
QC Source Sample: Non-SDG (A0J0270-02)												
% Solids	**96.7**	1.00	1.00	%	1	---	96.7	---	---	0.03	10%	
Duplicate (0100602-DUP2)			Prepared: 10/19/20 08:33		Analyzed: 10/20/20 08:57							
QC Source Sample: T4RB-48U (A0J0545-02)												
EPA 8000D												
% Solids	**92.9**	1.00	1.00	%	1	---	93.2	---	---	0.3	10%	
Duplicate (0100602-DUP3)			Prepared: 10/19/20 08:33		Analyzed: 10/20/20 08:57							
QC Source Sample: Non-SDG (A0J0591-01)												
% Solids	**75.6**	1.00	1.00	%	1	---	76.8	---	---	2	10%	
Duplicate (0100602-DUP4)			Prepared: 10/19/20 08:33		Analyzed: 10/20/20 08:57							
QC Source Sample: Non-SDG (A0J0620-02)												
% Solids	**81.3**	1.00	1.00	%	1	---	87.6	---	---	7	10%	
Duplicate (0100602-DUP5)			Prepared: 10/19/20 19:11		Analyzed: 10/20/20 08:57							
QC Source Sample: Non-SDG (A0J0648-04)												
% Solids	**87.0**	1.00	1.00	%	1	---	87.3	---	---	0.4	10%	
Duplicate (0100602-DUP6)			Prepared: 10/19/20 19:11		Analyzed: 10/20/20 08:57							
QC Source Sample: Non-SDG (A0J0647-11)												
% Solids	**94.5**	1.00	1.00	%	1	---	94.8	---	---	0.3	10%	
Duplicate (0100602-DUP7)			Prepared: 10/19/20 19:11		Analyzed: 10/20/20 08:57							
QC Source Sample: Non-SDG (A0J0647-01)												
% Solids	**81.8**	1.00	1.00	%	1	---	81.9	---	---	0.08	10%	

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

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0640 - EPA 3510C SepF							**Water**					
Blank (BIJ0640-BLK1)			Prepared: 10/21/20 14:55 Analyzed: 10/25/20 11:34									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.043	0.193	ug/L	1	---	---	---	---	---	---	U
Surr: Tripentyltin			*Recovery: 102 %*		*Limits: 30-160 %*			*Dilution: 1x*				
Tripropyltin			*97.3 %*		*30-160 %*			*"*				
LCS (BIJ0640-BS1)			Prepared: 10/21/20 14:55 Analyzed: 10/25/20 11:51									
EPA 8270E-SIM												
Tributyltin Ion	1.87	0.043	0.193	ug/L	1	2.2277	---	83.7	30-160%	---	---	
Surr: Tripentyltin			*Recovery: 87.5 %*		*Limits: 30-160 %*			*Dilution: 1x*				
Tripropyltin			*80.0 %*		*30-160 %*			*"*				

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Analytical Resources, Inc.

QUALITY CONTROL (QC) SAMPLE RESULTS

Butyl Tins

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch BIJ0720 - EPA 3546 (Microwave)							**Solid**					
Blank (BIJ0720-BLK1)			Prepared: 10/23/20 15:05 Analyzed: 11/09/20 10:51									
EPA 8270E-SIM												
Tributyltin Ion	ND	0.450	3.86	ug/kg wet	1	---	---	---	---	---	---	U
Surr: Tripentyltin			*Recovery: 75.9 %*	*Limits: 30-160 %*			*Dilution: 1x*					
Tripropyltin			*69.8 %*	*30-160 %*			*"*					
LCS (BIJ0720-BS1)			Prepared: 10/23/20 15:05 Analyzed: 11/09/20 11:08									
EPA 8270E-SIM												
Tributyltin Ion	37.3	0.450	3.86	ug/kg wet	1	44.554	---	83.7	30-160%	---	---	
Surr: Tripentyltin			*Recovery: 82.0 %*	*Limits: 30-160 %*			*Dilution: 1x*					
Tripropyltin			*77.0 %*	*30-160 %*			*"*					

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SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

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

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100657							
A0J0545-08	Water	NWTPH-Dx	10/14/20 16:10	10/20/20 10:39	1050mL/5mL	1000mL/5mL	0.95

Prep: EPA 3546 (Fuels)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100726							
A0J0545-01	Soil	NWTPH-Dx	10/14/20 10:25	10/21/20 13:05	10.63g/5mL	10g/5mL	0.94
A0J0545-02	Soil	NWTPH-Dx	10/14/20 10:55	10/21/20 13:05	10.79g/5mL	10g/5mL	0.93
A0J0545-03	Soil	NWTPH-Dx	10/14/20 11:25	10/21/20 13:05	10.29g/5mL	10g/5mL	0.97
A0J0545-04	Soil	NWTPH-Dx	10/14/20 12:10	10/21/20 13:05	10.32g/5mL	10g/5mL	0.97
A0J0545-05	Soil	NWTPH-Dx	10/14/20 13:45	10/21/20 13:05	10.71g/5mL	10g/5mL	0.93
A0J0545-06	Soil	NWTPH-Dx	10/14/20 14:25	10/21/20 13:05	10.83g/5mL	10g/5mL	0.92
A0J0545-07	Soil	NWTPH-Dx	10/14/20 14:50	10/21/20 13:05	10.81g/5mL	10g/5mL	0.93

Halogenated Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100846							
A0J0545-08	Water	EPA 8260D	10/14/20 16:10	10/24/20 09:52	5mL/5mL	5mL/5mL	1.00

Prep: EPA 5035A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100802							
A0J0545-07	Soil	5035A/8260D	10/14/20 14:50	10/14/20 14:50	5.25g/5mL	5g/5mL	0.95

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0110021							
A0J0545-08	Water	EPA 8082A	10/14/20 16:10	11/02/20 10:22	1050mL/2mL	1000mL/2mL	0.95

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100700							

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SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0J0545-07	Soil	EPA 8082A	10/14/20 14:50	10/21/20 10:03	10.31g/2mL	10g/2mL	0.97

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100638							
A0J0545-08	Water	EPA 8081B	10/14/20 16:10	10/19/20 15:24	1050mL/5mL	1000mL/5mL	0.95

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100905							
A0J0545-07RE1	Soil	EPA 8081B	10/14/20 14:50	10/23/20 11:21	10.33g/10mL	10g/5mL	1.94

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100642							
A0J0545-08	Water	EPA 8270E	10/14/20 16:10	10/20/20 07:05	980mL/1mL	1000mL/1mL	1.02

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100765							
A0J0545-01RE2	Soil	EPA 8270E	10/14/20 10:25	10/22/20 12:45	15.17g/2mL	15g/2mL	0.99
A0J0545-02	Soil	EPA 8270E	10/14/20 10:55	10/22/20 12:45	15.08g/2mL	15g/2mL	1.00
A0J0545-03RE1	Soil	EPA 8270E	10/14/20 11:25	10/22/20 12:45	15.74g/2mL	15g/2mL	0.95
A0J0545-04	Soil	EPA 8270E	10/14/20 12:10	10/22/20 12:45	15.74g/2mL	15g/2mL	0.95
A0J0545-05RE1	Soil	EPA 8270E	10/14/20 13:45	10/22/20 12:45	15.48g/2mL	15g/2mL	0.97
A0J0545-06RE1	Soil	EPA 8270E	10/14/20 14:25	10/22/20 12:45	10.43g/2mL	15g/2mL	1.44
A0J0545-07RE2	Soil	EPA 8270E	10/14/20 14:50	10/22/20 12:45	15.22g/2mL	15g/2mL	0.99

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100942							

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SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020A (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A0J0545-08RE1	Water	EPA 6020A	10/14/20 16:10	10/27/20 15:58	45mL/50mL	45mL/50mL	1.00

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100878							
A0J0545-07	Soil	EPA 6020A	10/14/20 14:50	10/26/20 11:03	0.469g/50mL	0.5g/50mL	1.07

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100602							
A0J0545-01	Soil	EPA 8000D	10/14/20 10:25	10/19/20 08:33			NA
A0J0545-02	Soil	EPA 8000D	10/14/20 10:55	10/19/20 08:33			NA
A0J0545-03	Soil	EPA 8000D	10/14/20 11:25	10/19/20 08:33			NA
A0J0545-04	Soil	EPA 8000D	10/14/20 12:10	10/19/20 08:33			NA
A0J0545-05	Soil	EPA 8000D	10/14/20 13:45	10/19/20 08:33			NA
A0J0545-06	Soil	EPA 8000D	10/14/20 14:25	10/19/20 08:33			NA
A0J0545-07	Soil	EPA 8000D	10/14/20 14:50	10/19/20 08:33			NA

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Analytical Resources, Inc.

SAMPLE PREPARATION INFORMATION

Butyl Tins

Prep: EPA 3510C SepF

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0640							
A0J0545-08	Water	EPA 8270E-SIM	10/14/20 16:10	10/21/20 14:55	100mL/0.5mL	100mL/0.5mL	1.00

Prep: EPA 3546 (Microwave)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: BIJ0720							
A0J0545-07	Soil	EPA 8270E-SIM	10/14/20 14:50	10/26/20 09:30	5.67g/0.5mL	5g/0.5mL	0.88

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QUALIFIER DEFINITIONS

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

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B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
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-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
J	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-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
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-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	The RPD for this spike and spike duplicate is above established control limits. Recoveries for both the spike and spike duplicate are within control limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-43	Matrix Spike recovery is not applicable due to interfering Aroclor(s) in source sample.
Q-54	Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +15%. 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 +3%. 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 -18%. 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 -28%. 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 -4%. The results are reported as Estimated Values.

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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.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
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-01	Sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
X	See Case Narrative.

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U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).

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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.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

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

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

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

Soil and Sediment Samples:

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

Sampling and Preservation Notes:

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

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

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

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

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



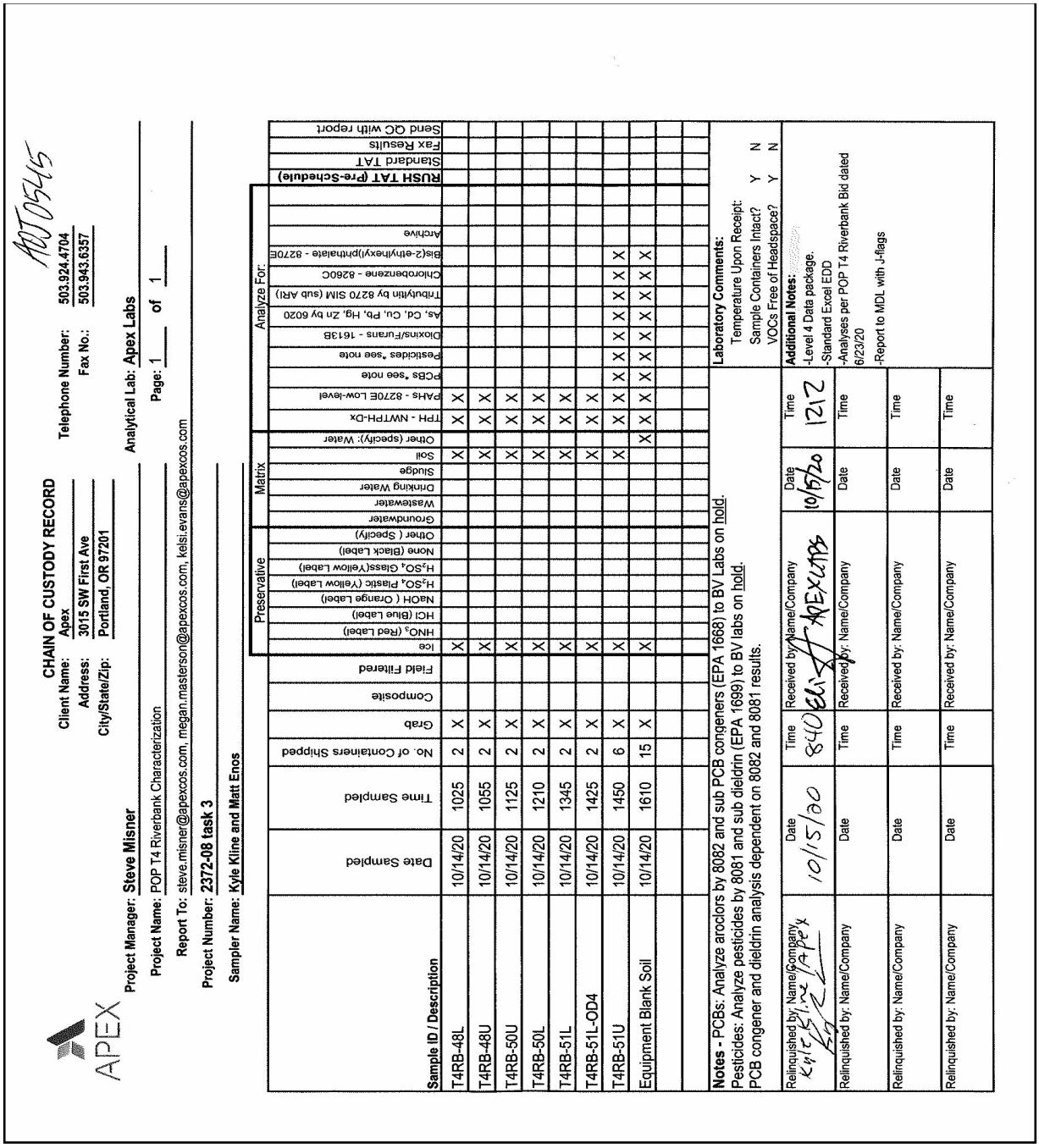
Darrell Auvil, Project Manager

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

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**



CHAIN OF CUSTODY RECORD

Client Name: Apex — Telephone Number: 503.924.4704
Address: 3015 SW First Ave — Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 — Analytical Lab: Apex Labs

Project Manager: Steve Misner — Page: 1 of 1
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Matt Enos

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify): Water	Analyze For: TPH - NWTPH-Dx	PAHs - 8270E Low-level	PCBs *see note	Pesticides *see note	Dioxins/Furans - 1613B	As, Cd, Cu, Pb, Hg, Zn by 6020	Tributyltin by 8270 SIM (sub ARI)	Chlorobenzene - 8260C	Bis(2-ethylhexyl)phthalate - 8270E	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
T4RB-48L	10/14/20	1025	2	X			X												X		X	X												
T4RB-48U	10/14/20	1055	2	X															X		X	X												
T4RB-50U	10/14/20	1125	2	X			X												X		X	X												
T4RB-50L	10/14/20	1210	2	X			X												X		X	X												
T4RB-51L	10/14/20	1345	2	X			X												X		X	X												
T4RB-51L-OD4	10/14/20	1425	2	X			X												X		X	X												
T4RB-51U	10/14/20	1450	6	X			X												X		X	X												
Equipment Blank Soil	10/14/20	1610	15	X			X													X	X	X												

Notes - PCBs: Analyze aroclors by 8082 and sub PCB congeners (EPA 1668) to BV Labs on hold.
Pesticides: Analyze pesticides by 8081 and sub dieldrin (EPA 1699) to BV labs on hold.
PCB congener and dieldrin analysis dependent on 8082 and 8081 results.

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline/APEX	10/15/20	840	Elsi/APEX	10/16/20	1212
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 Task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0545 - 12 21 20 1000**

APEX LABS COOLER RECEIPT FORM

Client: APEX Companies Element WO#: A0 J0545

Project/Project #: POP T4 Riverbank Characterization

Delivery Info:

Date/time received: 10/15/20 @ 1212 By: EJ

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

Cooler Inspection Date/time inspected: 10/15/20 @ 1245 By: EJ

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.9	1.4					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	Y	Y					
Ice type: (Gel/Real/Other)	Real	Real					
Condition:	Good	Good					

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

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

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

Samples Inspection: Date/time inspected: 10/15/20 @ 14:35 By: [illegible]

All samples intact? Yes X No ___ Comments: ___

Bottle labels/COCs agree? Yes ___ No X Comments: All Lables read EB Soil, Lab marks Equipment Blank Soil

COC/container discrepancies form initiated? Yes ___ No X

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

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

Comments ___

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

Comments: ___

Additional information: ___

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

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Darrell Auvil, Project Manager

Analytical Resources, Incorporated
Analytical Chemists and Consultants

24 November 2020

Darrell Auvil
Apex Laboratories LLC
12232 SW Garden Place
Tigard, OR 97223

RE: A0J0545

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
20J0292	N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.



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ACCREDITED IN ACCORDANCE WITH nelac
Cert# 100006-012

4611 S. 134th Place, Suite 100 • Tukwila, WA 98168 • Ph: (206) 695-6200 • Fax: (206) 695-6202

SUBCONTRACT ORDER

Apex Laboratories

20J0292 OB 10/15/20 **A0J0545** JS

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

Sample Name: A0J0545-07 **Soil** **Sampled: 10/14/20 14:50** (T4RB-51U)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	OB 10/15/20 ~~10/28/20 17:00~~ 11/3/20	10/28/20 14:50	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (D)4 oz Glass Jar			

All Conts Reads EB Soil

Sample Name: A0J0545-08 **Water** **Sampled: 10/14/20 16:10** (Equipment Blank Soil)

Analysis	Due	Expires	Comments
TBT, Tributyl Tin Only (Sub)	OB 10/15/20 ~~10/28/20 17:00~~ 11/3/20	10/28/20 16:10	Low Level SIM method, TBT only, Level 4 Data Pack
Containers Supplied: (N)1 L Amber Glass - Non Preserved (O)1 L Amber Glass - Non Preserved			

Tracking #: 1ZX472OR0194817959 EJ

Standard TAT

Released By	Date	Received By	Date
	10/19/20	UPS (Shipper)	
UPS (Shipper)		Jacob Walter	10/20/2020 1104
Released By	Date	Received By	Date

Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A0J0545-07	20J0292-01	Solid	14-Oct-2020 14:50	20-Oct-2020 11:04
A0J0545-08	20J0292-02	Water	14-Oct-2020 16:10	20-Oct-2020 11:04

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Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

Work Order Case Narrative

Sample receipt

Samples as listed on the preceding page were received 20-Oct-2020 11:04 under ARI work order 20J0292. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Butyl Tin(s) - EPA Method SW8270E-SIM

The samples were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank was clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

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Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex

Project Name: AOJ0545

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 20J0292

Tracking No: 1ZX4720R0194817959 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	(YES)	NO
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1104 1.2

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 5206

Cooler Accepted by: JS Date: 10/20/2020 Time: 1104

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used?	(Bubble Wrap) Wet Ice Gel Packs Baggies (Foam Block) Paper Other: Trash bag		
Was sufficient ice used (if appropriate)?	~~NA~~ JS	(YES)	NO
How were bottles sealed in plastic bags?	Individually	Grouped	(Not)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JS Date: 10/20/2020 Time: 1220 Labels checked by: JS

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

A0J0545-07

20J0292-01 (Solid)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/14/2020 14:50

Instrument: NT8 Analyst: JZ — Analyzed: 11/09/2020 11:57

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)		Extract ID: 20J0292-01 A 01
	Preparation Batch: BIJ0720	Sample Size: 5.67 g (wet)	Dry Weight:5.01 g
	Prepared: 10/26/2020	Final Volume: 0.5 mL	% Solids: 88.36
Sample Cleanup:	Cleanup Method: Silica Gel		Extract ID: 20J0292-01 A 01
	Cleanup Batch: CIK0062	Initial Volume: 0.5 mL	
	Cleaned: 06-Nov-2020	Final Volume: 0.5 mL	

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.449	3.85	ND	ug/kg	U
Surrogate: Tripentyltin				*30-160 %*	*64.4*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*49.6*	*%*	

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Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

A0J0545-08

20J0292-02 (Water)

Butyl Tins

Method: EPA 8270E-SIM — Sampled: 10/14/2020 16:10

Instrument: NT8 Analyst: JZ — Analyzed: 10/25/2020 12:40

Sample Preparation: Preparation Method: EPA 3510C SepF; Preparation Batch: BIJ0640; Prepared: 10/21/2020; Sample Size: 100 mL; Final Volume: 0.5 mL — Extract ID: 20J0292-02 A 01

Sample Cleanup: Cleanup Method: Silica Gel; Cleanup Batch: CIJ0238; Cleaned: 23-Oct-2020; Initial Volume: 0.5 mL; Final Volume: 0.5 mL — Extract ID: 20J0292-02 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Tributyltin Ion	36643-28-4	1	0.043	0.193	ND	ug/L	U
Surrogate: Tripentyltin				*30-160 %*	*59.1*	*%*	
Surrogate: Tripropyltin				*30-160 %*	*52.3*	*%*	

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Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

Butyl Tins - Quality Control

Batch BIJ0640 - EPA 3510C SepF

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0640-BLK1)				Prepared: 21-Oct-2020 Analyzed: 25-Oct-2020 11:34							
Tributyltin Ion	ND	0.043	0.193	ug/L							U
Surrogate: Tripentyltin	2.30			ug/L	*2.26*		*102*	*30-160*			
Surrogate: Tripropyltin	2.13			ug/L	*2.19*		*97.3*	*30-160*			
LCS (BIJ0640-BS1)				Prepared: 21-Oct-2020 Analyzed: 25-Oct-2020 11:51							
Tributyltin Ion	1.87	0.043	0.193	ug/L	2.23		83.7	30-160			
Surrogate: Tripentyltin	1.98			ug/L	*2.26*		*87.5*	*30-160*			
Surrogate: Tripropyltin	1.75			ug/L	*2.19*		*80.0*	*30-160*			

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Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

Butyl Tins - Quality Control

Batch BIJ0720 - EPA 3546 (Microwave)

Instrument: NT8 Analyst: JZ

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BIJ0720-BLK1)				Prepared: 23-Oct-2020 Analyzed: 09-Nov-2020 10:51							
Tributyltin Ion	ND	0.450	3.86	ug/kg							U
Surrogate: Tripentyltin	34.3			ug/kg	*45.2*		*75.9*	*30-160*			
Surrogate: Tripropyltin	30.5			ug/kg	*43.7*		*69.8*	*30-160*			
LCS (BIJ0720-BS1)				Prepared: 23-Oct-2020 Analyzed: 09-Nov-2020 11:08							
Tributyltin Ion	37.3	0.450	3.86	ug/kg	44.6		83.7	30-160			
Surrogate: Tripentyltin	37.0			ug/kg	*45.2*		*82.0*	*30-160*			
Surrogate: Tripropyltin	33.7			ug/kg	*43.7*		*77.0*	*30-160*			

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Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

Certified Analyses included in this Report

Analyte	Certifications
EPA 8270E-SIM in Solid	
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Tributyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Dibutyltin Ion	DoD-ELAP
Dibutyltin Ion	WADOE,DoD-ELAP
Butyltin Ion	WADOE
Butyltin Ion	
Butyltin Ion	WADOE
Butyltin Ion	WADOE
EPA 8270E-SIM in Water	
Tributyltin Ion	NELAP
Tributyltin Ion	
Tributyltin Ion	NELAP
Tributyltin Ion	NELAP
Dibutyltin Ion	NELAP
Dibutyltin Ion	
Dibutyltin Ion	NELAP
Dibutyltin Ion	NELAP
Butyltin Ion	NELAP
Butyltin Ion	
Butyltin Ion	NELAP
Butyltin Ion	NELAP
Tetrabutyltin	NELAP
Tetrabutyltin	
Tetrabutyltin	NELAP
Tetrabutyltin	NELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	01/31/2021
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program	66169	01/01/2021

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Apex Laboratories LLC	Project: A0J0545	
12232 SW Garden Place	Project Number: A0J0545	**Reported:**
Tigard OR, 97223	Project Manager: Darrell Auvil	24-Nov-2020 09:42

Notes and Definitions

U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.

Your Project #: A0J0545
Your C.O.C. #: na

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2021/01/08
Report #: R6474433
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C0R6843
Received: 2020/10/21, 13:03

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	1	2020/11/05	2020/11/14	BRL SOP-00410	EPA 1613B m
Moisture	1	N/A	2020/10/22	CAM SOP-00445	Carter 2nd ed 51.2 m
OC Pesticides in Soil by GCTQ	1	2020/12/23	2021/01/04	BRL SOP-00014	EPA Method 1699m

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Water (1613B) (2)	1	2020/10/27	2020/11/05	BRL SOP-00410	EPA 1613B m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(2) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bvlabs.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RESULTS OF ANALYSES OF SOIL

BV Labs ID		NYH241			
Sampling Date		2020/10/14 14:50			
COC Number		na			
	UNITS	**T4RB-51U**	**RDL**	**MDL**	**QC Batch**
Moisture	%	15	1.0	0.50	7015700
Dieldrin	ng/g	0.221	0.056	0.027	7124581

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH241							
Sampling Date		2020/10/14 14:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-51U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.143 U	0.143	0.998	0.400	1.00	0.143	N/A	7051692
1,2,3,7,8-Penta CDD *	pg/g	0.141 U	0.141	4.99	0.400	1.00	0.141	N/A	7051692
1,2,3,4,7,8-Hexa CDD *	pg/g	0.218 J	0.128	4.99	0.400	0.100	0.0218	N/A	7051692
1,2,3,6,7,8-Hexa CDD *	pg/g	1.05 J	0.128	4.99	0.400	0.100	0.105	N/A	7051692
1,2,3,7,8,9-Hexa CDD *	pg/g	0.763 J	0.136	4.99	0.400	0.100	0.0763	N/A	7051692
1,2,3,4,6,7,8-Hepta CDD *	pg/g	60.8	0.144	4.99	0.400	0.0100	0.608	N/A	7051692
Octa CDD *	pg/g	670	0.142	9.98	0.800	0.000300	0.201	N/A	7051692
Total Tetra CDD *	pg/g	0.143 U	0.143	0.998	0.400	N/A	N/A	0	7051692
Total Penta CDD *	pg/g	0.404 U (1)	0.404	4.99	0.400	N/A	N/A	0	7051692
Total Hexa CDD *	pg/g	10.5	0.133	4.99	0.400	N/A	N/A	6	7051692
Total Hepta CDD *	pg/g	131	0.144	4.99	0.400	N/A	N/A	2	7051692
2,3,7,8-Tetra CDF **	pg/g	0.140 U	0.140	0.998	0.400	0.100	0.0140	N/A	7051692
1,2,3,7,8-Penta CDF **	pg/g	0.155 U	0.155	4.99	0.400	0.0300	0.00465	N/A	7051692
2,3,4,7,8-Penta CDF **	pg/g	0.142 U	0.142	4.99	0.400	0.300	0.0426	N/A	7051692
1,2,3,4,7,8-Hexa CDF **	pg/g	0.628 J	0.117	4.99	0.400	0.100	0.0628	N/A	7051692
1,2,3,6,7,8-Hexa CDF **	pg/g	0.240 J	0.120	4.99	0.400	0.100	0.0240	N/A	7051692
2,3,4,6,7,8-Hexa CDF **	pg/g	0.161 J	0.113	4.99	0.400	0.100	0.0161	N/A	7051692
1,2,3,7,8,9-Hexa CDF **	pg/g	0.121 U	0.121	4.99	0.400	0.100	0.0121	N/A	7051692
1,2,3,4,6,7,8-Hepta CDF **	pg/g	4.11 J	0.131	4.99	0.400	0.0100	0.0411	N/A	7051692
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.437 J	0.126	4.99	0.400	0.0100	0.00437	N/A	7051692
Octa CDF **	pg/g	12.5	0.140	9.98	0.800	0.000300	0.00375	N/A	7051692
Total Tetra CDF **	pg/g	0.220 J	0.140	0.998	0.400	N/A	N/A	1	7051692
Total Penta CDF **	pg/g	2.18 J	0.148	4.99	0.400	N/A	N/A	3	7051692
Total Hexa CDF **	pg/g	7.31	0.118	4.99	0.400	N/A	N/A	7	7051692
Total Hepta CDF **	pg/g	14.3	0.128	4.99	0.400	N/A	N/A	3	7051692
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.52	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7051692

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		NYH241							
Sampling Date		2020/10/14 14:50							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-51U	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-1234678 HeptaCDF **	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-123478 HexaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-123478 HexaCDF **	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-1234789 HeptaCDF **	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-123678 HexaCDD *	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-123678 HexaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-12378 PentaCDD *	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-12378 PentaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-123789 HexaCDF **	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-234678 HexaCDF **	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-23478 PentaCDF **	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-2378 TetraCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-2378 TetraCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7051692
C13-OCDD *	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7051692

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (WATER)

BV Labs ID		NYH242							
Sampling Date		2020/10/14 16:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	EQUIPMENT BLANK SOIL	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	0.979 U	0.979	9.57	4.00	1.00	0.979	N/A	7030307
1,2,3,7,8-Penta CDD *	pg/L	1.12 U	1.12	47.8	4.00	1.00	1.12	N/A	7030307
1,2,3,4,7,8-Hexa CDD *	pg/L	0.965 U	0.965	47.8	4.00	0.100	0.0965	N/A	7030307
1,2,3,6,7,8-Hexa CDD *	pg/L	0.971 U	0.971	47.8	4.00	0.100	0.0971	N/A	7030307
1,2,3,7,8,9-Hexa CDD *	pg/L	1.03 U	1.03	47.8	4.00	0.100	0.103	N/A	7030307
1,2,3,4,6,7,8-Hepta CDD *	pg/L	1.40 U	1.40	47.8	4.00	0.0100	0.0140	N/A	7030307
Octa CDD *	pg/L	1.43 U	1.43	95.7	8.00	0.000300	0.000429	N/A	7030307
Total Tetra CDD *	pg/L	0.979 U	0.979	9.57	4.00	N/A	N/A	0	7030307
Total Penta CDD *	pg/L	1.12 U	1.12	47.8	4.00	N/A	N/A	0	7030307
Total Hexa CDD *	pg/L	1.00 U	1.00	47.8	4.00	N/A	N/A	0	7030307
Total Hepta CDD *	pg/L	1.40 U	1.40	47.8	4.00	N/A	N/A	0	7030307
2,3,7,8-Tetra CDF **	pg/L	0.490 U	0.490	9.57	4.00	0.100	0.0490	N/A	7030307
1,2,3,7,8-Penta CDF **	pg/L	1.10 U	1.10	47.8	4.00	0.0300	0.0330	N/A	7030307
2,3,4,7,8-Penta CDF **	pg/L	1.01 U	1.01	47.8	4.00	0.300	0.303	N/A	7030307
1,2,3,4,7,8-Hexa CDF **	pg/L	0.708 U	0.708	47.8	4.00	0.100	0.0708	N/A	7030307
1,2,3,6,7,8-Hexa CDF **	pg/L	0.727 U	0.727	47.8	4.00	0.100	0.0727	N/A	7030307
2,3,4,6,7,8-Hexa CDF **	pg/L	0.686 U	0.686	47.8	4.00	0.100	0.0686	N/A	7030307
1,2,3,7,8,9-Hexa CDF **	pg/L	0.733 U	0.733	47.8	4.00	0.100	0.0733	N/A	7030307
1,2,3,4,6,7,8-Hepta CDF **	pg/L	1.28 U	1.28	47.8	4.00	0.0100	0.0128	N/A	7030307
1,2,3,4,7,8,9-Hepta CDF **	pg/L	1.23 U	1.23	47.8	4.00	0.0100	0.0123	N/A	7030307
Octa CDF **	pg/L	1.02 U	1.02	95.7	8.00	0.000300	0.000306	N/A	7030307
Total Tetra CDF **	pg/L	0.490 U	0.490	9.57	4.00	N/A	N/A	0	7030307
Total Penta CDF **	pg/L	1.06 U	1.06	47.8	4.00	N/A	N/A	0	7030307
Total Hexa CDF **	pg/L	0.713 U	0.713	47.8	4.00	N/A	N/A	0	7030307
Total Hepta CDF **	pg/L	1.25 U	1.25	47.8	4.00	N/A	N/A	0	7030307
TOTAL TOXIC EQUIVALENCY	pg/L	N/A	N/A	N/A	N/A	N/A	3.11	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7030307

EDL = Estimated Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (WATER)

BV Labs ID		NYH242							
Sampling Date		2020/10/14 16:10							
COC Number		na				TOXIC EQUIVALENCY		# of	
	UNITS	EQUIPMENT BLANK SOIL	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-1234678 HeptaCDF **	%	148 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123478 HexaCDD *	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123478 HexaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-1234789 HeptaCDF **	%	143 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123678 HexaCDD *	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123678 HexaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-12378 PentaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123789 HexaCDF **	%	134	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-234678 HexaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-23478 PentaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-2378 TetraCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-2378 TetraCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-OCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7030307

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compound
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan
(1) Internal standard recovery outside method criteria. No positive hits are detected corresponding to this internal

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

TEST SUMMARY

BV Labs ID: NYH241
Sample ID: T4RB-51U
Matrix: Soil

Collected: 2020/10/14
Shipped:
Received: 2020/10/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7051692	2020/11/05	2020/11/14	Angel Guerrero
Moisture	BAL	7015700	N/A	2020/10/22	Chun Yan
OC Pesticides in Soil by GCTQ	GCTQ/MS	7124581	2020/12/23	2021/01/04	Wenhui (Susie) Shi

BV Labs ID: NYH242
Sample ID: EQUIPMENT BLANK SOIL
Matrix: Water

Collected: 2020/10/14
Shipped:
Received: 2020/10/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (1613B)	HRMS/MS	7030307	2020/10/27	2020/11/05	Angel Guerrero

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.8°C

Revised Report (2021/01/08): Additoinal analysis added, OC Pesticides.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7015700	KJP	RPD - Sample/Sample Dup	Moisture	2020/10/22	1.5		%	20
7030307	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/11/05		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/05		124	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/05		149 (1)	%	28 - 143
			C13-123478 HexaCDD	2020/11/05		103	%	32 - 141
			C13-123478 HexaCDF	2020/11/05		116	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/05		138	%	28 - 138
			C13-123678 HexaCDD	2020/11/05		119	%	28 - 130
			C13-123678 HexaCDF	2020/11/05		120	%	26 - 123
			C13-12378 PentaCDD	2020/11/05		100	%	25 - 181
			C13-12378 PentaCDF	2020/11/05		111	%	24 - 185
			C13-123789 HexaCDF	2020/11/05		131	%	29 - 147
			C13-234678 HexaCDF	2020/11/05		123	%	28 - 136
			C13-23478 PentaCDF	2020/11/05		120	%	21 - 178
			C13-2378 TetraCDD	2020/11/05		89	%	25 - 164
			C13-2378 TetraCDF	2020/11/05		107	%	24 - 169
			C13-OCDD	2020/11/05		125	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/05		108	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/05		114	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/05		114	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/05		108	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/05		117	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05		115	%	70 - 140
			Octa CDD	2020/11/05		111	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/05		109	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/05		110	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/05		107	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/05		114	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/05		110	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/05		114	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/05		112	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05		103	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05		118	%	78 - 138
			Octa CDF	2020/11/05		122	%	63 - 170
7030307	AGU	Spiked Blank DUP	37CL4 2378 Tetra CDD	2020/11/05		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/05		123	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/05		148 (1)	%	28 - 143
			C13-123478 HexaCDD	2020/11/05		103	%	32 - 141
			C13-123478 HexaCDF	2020/11/05		118	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/05		148 (1)	%	28 - 138
			C13-123678 HexaCDD	2020/11/05		120	%	28 - 130
			C13-123678 HexaCDF	2020/11/05		123	%	26 - 123
			C13-12378 PentaCDD	2020/11/05		101	%	25 - 181
			C13-12378 PentaCDF	2020/11/05		107	%	24 - 185
			C13-123789 HexaCDF	2020/11/05		136	%	29 - 147
			C13-234678 HexaCDF	2020/11/05		123	%	28 - 136
			C13-23478 PentaCDF	2020/11/05		122	%	21 - 178
			C13-2378 TetraCDD	2020/11/05		87	%	25 - 164
			C13-2378 TetraCDF	2020/11/05		102	%	24 - 169
			C13-OCDD	2020/11/05		127	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/05		109	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/05		115	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/05		120	%	70 - 164

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/11/05		107	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/05		118	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05		114	%	70 - 140
			Octa CDD	2020/11/05		110	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/05		113	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/05		114	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/05		105	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/05		114	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/05		108	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/05		122	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/05		107	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05		108	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05		110	%	78 - 138
			Octa CDF	2020/11/05		122	%	63 - 170
7030307	AGU	RPD	2,3,7,8-Tetra CDD	2020/11/05	0.92		%	25
			1,2,3,7,8-Penta CDD	2020/11/05	0.87		%	25
			1,2,3,4,7,8-Hexa CDD	2020/11/05	5.1		%	25
			1,2,3,6,7,8-Hexa CDD	2020/11/05	0.93		%	25
			1,2,3,7,8,9-Hexa CDD	2020/11/05	0.85		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05	0.87		%	25
			Octa CDD	2020/11/05	0.90		%	25
			2,3,7,8-Tetra CDF	2020/11/05	3.6		%	25
			1,2,3,7,8-Penta CDF	2020/11/05	3.6		%	25
			2,3,4,7,8-Penta CDF	2020/11/05	1.9		%	25
			1,2,3,4,7,8-Hexa CDF	2020/11/05	0		%	25
			1,2,3,6,7,8-Hexa CDF	2020/11/05	1.8		%	25
			2,3,4,6,7,8-Hexa CDF	2020/11/05	6.8		%	25
			1,2,3,7,8,9-Hexa CDF	2020/11/05	4.6		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05	4.7		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05	7.0		%	25
			Octa CDF	2020/11/05	0		%	25
7030307	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/11/05		87	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/05		117	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/05		146 (2)	%	28 - 143
			C13-123478 HexaCDD	2020/11/05		95	%	32 - 141
			C13-123478 HexaCDF	2020/11/05		105	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/05		134	%	28 - 138
			C13-123678 HexaCDD	2020/11/05		108	%	28 - 130
			C13-123678 HexaCDF	2020/11/05		110	%	26 - 123
			C13-12378 PentaCDD	2020/11/05		84	%	25 - 181
			C13-12378 PentaCDF	2020/11/05		89	%	24 - 185
			C13-123789 HexaCDF	2020/11/05		117	%	29 - 147
			C13-234678 HexaCDF	2020/11/05		113	%	28 - 136
			C13-23478 PentaCDF	2020/11/05		96	%	21 - 178
			C13-2378 TetraCDD	2020/11/05		69	%	25 - 164
			C13-2378 TetraCDF	2020/11/05		88	%	24 - 169
			C13-OCDD	2020/11/05		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/05	1.47 U, EDL=1.47		pg/L	
			1,2,3,7,8-Penta CDD	2020/11/05	1.45 U, EDL=1.45		pg/L	
			1,2,3,4,7,8-Hexa CDD	2020/11/05	1.07 U, EDL=1.07		pg/L	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/11/05	1.08 U, EDL=1.08		pg/L	
			1,2,3,7,8,9-Hexa CDD	2020/11/05	1.14 U, EDL=1.14		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05	1.26 U, EDL=1.26		pg/L	
			Octa CDD	2020/11/05	1.84 U, EDL=1.84		pg/L	
			Total Tetra CDD	2020/11/05	1.47 U, EDL=1.47		pg/L	
			Total Penta CDD	2020/11/05	1.45 U, EDL=1.45		pg/L	
			Total Hexa CDD	2020/11/05	1.11 U, EDL=1.11		pg/L	
			Total Hepta CDD	2020/11/05	1.26 U, EDL=1.26		pg/L	
			2,3,7,8-Tetra CDF	2020/11/05	1.40 U, EDL=1.40		pg/L	
			1,2,3,7,8-Penta CDF	2020/11/05	1.80 U, EDL=1.80		pg/L	
			2,3,4,7,8-Penta CDF	2020/11/05	1.65 U, EDL=1.65		pg/L	
			1,2,3,4,7,8-Hexa CDF	2020/11/05	1.52 U, EDL=1.52		pg/L	
			1,2,3,6,7,8-Hexa CDF	2020/11/05	1.56 U, EDL=1.56		pg/L	
			2,3,4,6,7,8-Hexa CDF	2020/11/05	1.47 U, EDL=1.47		pg/L	
			1,2,3,7,8,9-Hexa CDF	2020/11/05	1.58 U, EDL=1.58		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05	1.26 U, EDL=1.26		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05	1.22 U, EDL=1.22		pg/L	
			Octa CDF	2020/11/05	1.58 U, EDL=1.58		pg/L	
			Total Tetra CDF	2020/11/05	1.40 U, EDL=1.40		pg/L	
			Total Penta CDF	2020/11/05	1.72 U, EDL=1.72		pg/L	
			Total Hexa CDF	2020/11/05	1.53 U, EDL=1.53		pg/L	
			Total Hepta CDF	2020/11/05	1.24 U, EDL=1.24		pg/L	
7051692	AGU	Matrix Spike	37CL4 2378 Tetra CDD	2020/11/13		105	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/13		100	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/13		106	%	28 - 143
			C13-123478 HexaCDD	2020/11/13		96	%	32 - 141
			C13-123478 HexaCDF	2020/11/13		103	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/13		110	%	26 - 138
			C13-123678 HexaCDD	2020/11/13		106	%	28 - 130
			C13-123678 HexaCDF	2020/11/13		97	%	26 - 123
			C13-12378 PentaCDD	2020/11/13		102	%	25 - 181
			C13-12378 PentaCDF	2020/11/13		95	%	24 - 185

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-123789 HexaCDF	2020/11/13		113	%	29 - 147
			C13-234678 HexaCDF	2020/11/13		101	%	28 - 136
			C13-23478 PentaCDF	2020/11/13		109	%	21 - 178
			C13-2378 TetraCDD	2020/11/13		89	%	25 - 164
			C13-2378 TetraCDF	2020/11/13		95	%	24 - 169
			C13-OCDD	2020/11/13		90	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/13		53 (3)	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/13		104	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/13		102	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/13		99	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/13		108	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/13		112	%	70 - 140
			Octa CDD	2020/11/13		150 (3)	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/13		NC (3)	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/13		107	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/13		100	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/13		121	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/13		107	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/13		105	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/13		102	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/13		100	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/13		103	%	78 - 138
			Octa CDF	2020/11/13		117	%	63 - 170
7051692	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/11/13		108	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/13		103	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/13		114	%	28 - 143
			C13-123478 HexaCDD	2020/11/13		108	%	32 - 141
			C13-123478 HexaCDF	2020/11/13		114	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/13		117	%	26 - 138
			C13-123678 HexaCDD	2020/11/13		116	%	28 - 130
			C13-123678 HexaCDF	2020/11/13		110	%	26 - 123
			C13-12378 PentaCDD	2020/11/13		111	%	25 - 181
			C13-12378 PentaCDF	2020/11/13		100	%	24 - 185
			C13-123789 HexaCDF	2020/11/13		123	%	29 - 147
			C13-234678 HexaCDF	2020/11/13		115	%	28 - 136
			C13-23478 PentaCDF	2020/11/13		118	%	21 - 178
			C13-2378 TetraCDD	2020/11/13		89	%	25 - 164
			C13-2378 TetraCDF	2020/11/13		95	%	24 - 169
			C13-OCDD	2020/11/13		83	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/13		98	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/13		104	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/13		104	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/13		101	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/13		110	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/13		108	%	70 - 140
			Octa CDD	2020/11/13		104	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/13		101	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/13		104	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/13		99	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/13		102	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/13		101	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/13		104	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/13		102	%	78 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,4,6,7,8-Hepta CDF	2020/11/13		98	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/13		103	%	78 - 138
			Octa CDF	2020/11/13		115	%	63 - 170
7051692	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/11/16		83	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/16		72	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/16		95	%	28 - 143
			C13-123478 HexaCDD	2020/11/16		81	%	32 - 141
			C13-123478 HexaCDF	2020/11/16		98	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/16		79	%	26 - 138
			C13-123678 HexaCDD	2020/11/16		101	%	28 - 130
			C13-123678 HexaCDF	2020/11/16		94	%	26 - 123
			C13-12378 PentaCDD	2020/11/16		81	%	25 - 181
			C13-12378 PentaCDF	2020/11/16		79	%	24 - 185
			C13-123789 HexaCDF	2020/11/16		100	%	29 - 147
			C13-234678 HexaCDF	2020/11/16		97	%	28 - 136
			C13-23478 PentaCDF	2020/11/16		90	%	21 - 178
			C13-2378 TetraCDD	2020/11/16		73	%	25 - 164
			C13-2378 TetraCDF	2020/11/16		79	%	24 - 169
			C13-OCDD	2020/11/16		49	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/16	0.153 U, EDL=0.153		pg/g	
			1,2,3,7,8-Penta CDD	2020/11/16	0.157 U, EDL=0.157		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/11/16	0.152 U, EDL=0.152		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/11/16	0.153 U, EDL=0.153		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/11/16	0.161 U, EDL=0.161		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/11/16	0.164 U, EDL=0.164		pg/g	
			Octa CDD	2020/11/16	0.170 U, EDL=0.170		pg/g	
			Total Tetra CDD	2020/11/16	0.153 U, EDL=0.153		pg/g	
			Total Penta CDD	2020/11/16	0.157 U, EDL=0.157		pg/g	
			Total Hexa CDD	2020/11/16	0.157 U, EDL=0.157		pg/g	
			Total Hepta CDD	2020/11/16	0.164 U, EDL=0.164		pg/g	
			2,3,7,8-Tetra CDF	2020/11/16	0.175 U, EDL=0.175		pg/g	
			1,2,3,7,8-Penta CDF	2020/11/16	0.125 U, EDL=0.125		pg/g	
			2,3,4,7,8-Penta CDF	2020/11/16	0.115 U, EDL=0.115		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/11/16	0.152 U, EDL=0.152		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/11/16	0.156 U, EDL=0.156		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/11/16	0.147 U, EDL=0.147		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDF	2020/11/16	0.157 U, EDL=0.157		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/11/16	0.251 U, EDL=0.251 (4)		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/11/16	0.162 U, EDL=0.162		pg/g	
			Octa CDF	2020/11/16	0.278 U, EDL=0.278		pg/g	
			Total Tetra CDF	2020/11/16	0.175 U, EDL=0.175		pg/g	
			Total Penta CDF	2020/11/16	0.120 U, EDL=0.120		pg/g	
			Total Hexa CDF	2020/11/16	0.153 U, EDL=0.153		pg/g	
			Total Hepta CDF	2020/11/16	0.251 U, EDL=0.251 (4)		pg/g	
7051692	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/11/14	1.5		%	25
			1,2,3,7,8-Penta CDD	2020/11/14	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/11/14	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/11/14	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/11/14	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/11/14	5.9		%	25
			Octa CDD	2020/11/14	16		%	25
			Total Tetra CDD	2020/11/14	2.2		%	25
			Total Penta CDD	2020/11/14	NC		%	25
			Total Hexa CDD	2020/11/14	4.3		%	25
			Total Hepta CDD	2020/11/14	3.4		%	25
			2,3,7,8-Tetra CDF	2020/11/14	0.75		%	25
			1,2,3,7,8-Penta CDF	2020/11/14	NC		%	25
			2,3,4,7,8-Penta CDF	2020/11/14	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/11/14	16		%	25
			1,2,3,6,7,8-Hexa CDF	2020/11/14	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/11/14	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/11/14	NC (4)		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/11/14	5.7		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/11/14	NC		%	25
			Octa CDF	2020/11/14	3.7		%	25
			Total Tetra CDF	2020/11/14	0.72		%	25
			Total Penta CDF	2020/11/14	5.5		%	25
			Total Hexa CDF	2020/11/14	15		%	25
			Total Hepta CDF	2020/11/14	4.4		%	25
7124581	WSS	Matrix Spike	Dieldrin	2020/12/23		119	%	50 - 200
7124581	WSS	Spiked Blank	Dieldrin	2020/12/23		112	%	50 - 200
7124581	WSS	Method Blank	Dieldrin	2020/12/23	0.024 U, MDL=0.024		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7124581	WSS	RPD - Sample/Sample Dup	Dieldrin	2020/12/23	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Internal standard recovery outside method criteria. No positive hits are detected corresponding to this internal

(3) Native recovery is outside method criteria, possibly due to matrix effects

(4) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Melissa DiGrazia, Operations Manager, HRMS Department

Owen Cosby, BSc.C.Chem, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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SUBCONTRACT ORDER

Apex Laboratories

A0J0545

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C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

Sample Name: T4RB-51U **Soil** **Sampled: 10/14/20 14:50** (A0J0545-07)

Analysis	Due	Expires	Comments
[redacted]	[redacted]	04/12/21 14:50	[redacted] Level 4 Data package Done
1699 Insecticides/Pesticides (SUB)	01/05/21 17:00	10/28/20 14:50	Dieldrin ONLY---RDL is 0.05ng/g and MDL is 0.0076ng/g Level 4 DP

Containers Supplied:
(C)8 oz Glass Jar

All Conts Reads EB Soil

Sample Name: Equipment Blank Soil **Water** **Sampled: 10/14/20 16:10** (A0J0545-08)

Analysis	Due	Expires	Comments
[redacted]	[redacted]	04/12/21 16:10	[redacted] Level 4 Data package Done

Containers Supplied:
(H)1 L Amber Glass - Non Preserved
(I)1 L Amber Glass - Non Preserved
(J)1 L Amber Glass - Non Preserved
(L)1 L Amber Glass - Non Preserved
(M)1 L Amber Glass - Non Preserved

Fed Ex (Shipper)

Released By	Date	Received By	Date
Fed Ex (Shipper)			
Released By	Date	Received By	Date

SUBCONTRACT ORDER

Apex Laboratories

OB 10/15/20 **A0J0545** 15

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

Sample Name: T4RB-51U | **Soil** | **Sampled: 10/14/20 14:50** | (A0J0545-07)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	~~10/28/20 17:00~~ OB 10/15/20 11/3/20	04/12/21 14:50	BV/ Maxxam -- Level 4 Data package
Containers Supplied: (C)8 oz Glass Jar			

All Conts Reads EB Soil

Sample Name: Equipment Blank Soil | **Water** | **Sampled: 10/14/20 16:10** | (A0J0545-08)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	~~10/28/20 17:00~~ OB 10/15/20 11/3/20	04/12/21 16:10	BV/ Maxxam -- Level 4 Data package
Containers Supplied: (H)1 L Amber Glass - Non Preserved			
(I)1 L Amber Glass - Non Preserved			
(J)1 L Amber Glass - Non Preserved			
(K)1 L Amber Glass - Non Preserved			
(L)1 L Amber Glass - Non Preserved			
(M)1 L Amber Glass - Non Preserved			

21-Oct-20 13:03
Lori Dufour
C0R6843

GK1 ENV-976

International Solid Sample
Heat Treat Required
High Risk material
Controlled Storage and Disposal

Standard TAT

Tracking #: 771840695964 EJ

Released By	Date	Received By	Date
	10/19/20	Fed Ex (Shipper)	
Fed Ex (Shipper)		DIPIKA SINGH	22/10/21 13:03
Released By	Date	Received By	Date

Page 1 of 1

3.0/5.0/3.4

Apex Laboratories, LLC

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

Wednesday, December 2, 2020

Steve Misner
Apex Companies, LLC
3015 SW First Avenue
Portland, OR 97201

RE: A0J0663 - POP --- T4 Riverbank - 2372-08 task 3

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 A0J0663, which was received by the laboratory on 10/19/2020 at 12:36:00PM.

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

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

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler #1	3.9 degC	Cooler #2	4.5 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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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SG04	**A0J0663-04**	**Sediment**	**10/15/20 14:00**	**10/19/20 12:36**
SG05	**A0J0663-08**	**Sediment**	**10/15/20 16:55**	**10/19/20 12:36**
SG06	**A0J0663-12**	**Sediment**	**10/16/20 12:20**	**10/19/20 12:36**
SG07	**A0J0663-16**	**Sediment**	**10/16/20 14:45**	**10/19/20 12:36**
EB Sediment	**A0J0663-17**	**Water**	**10/16/20 17:10**	**10/19/20 12:36**
Dup-6	**A0J0663-18**	**Sediment**	**10/16/20 00:00**	**10/19/20 12:36**
T4RB-18L-OM	**A0J0663-19**	**Sediment**	**10/16/20 15:50**	**10/19/20 12:36**

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG04 (A0J0663-04)				**Matrix: Sediment**		**Batch: 0100949**		
Acenaphthene	ND	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Acenaphthylene	ND	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Anthracene	ND	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Benz(a)anthracene	**311**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Benzo(a)pyrene	**411**	109	217	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Benzo(b)fluoranthene	**370**	109	217	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Benzo(k)fluoranthene	**184**	109	217	ug/kg dry	40	10/28/20 16:20	EPA 8270E	**J**
Benzo(g,h,i)perylene	**246**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Chrysene	**316**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Dibenz(a,h)anthracene	ND	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Fluoranthene	**634**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Fluorene	ND	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**239**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
2-Methylnaphthalene	ND	145	289	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Naphthalene	ND	145	289	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Phenanthrene	**229**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Pyrene	**858**	72.2	145	ug/kg dry	40	10/28/20 16:20	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*53 %*	*Limits: 37-122 %*	*40*	*10/28/20 16:20*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*71 %*	*44-120 %*	*40*	*10/28/20 16:20*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*34 %*	*33-122 %*	*40*	*10/28/20 16:20*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*84 %*	*54-127 %*	*40*	*10/28/20 16:20*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*35 %*	*35-120 %*	*40*	*10/28/20 16:20*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*55 %*	*39-132 %*	*40*	*10/28/20 16:20*	*EPA 8270E*	*S-05*
SG05 (A0J0663-08)				**Matrix: Sediment**		**Batch: 0100949**		
Acenaphthene	ND	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Acenaphthylene	ND	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Anthracene	**113**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
Benz(a)anthracene	**158**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Benzo(a)pyrene	**239**	114	228	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Benzo(b)fluoranthene	**215**	114	228	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
Benzo(k)fluoranthene	**124**	114	228	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
Benzo(g,h,i)perylene	**134**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
Chrysene	**167**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG05 (A0J0663-08)				**Matrix: Sediment**		**Batch: 0100949**		
Dibenz(a,h)anthracene	ND	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Fluoranthene	**440**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Fluorene	**91.8**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
Indeno(1,2,3-cd)pyrene	**110**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
2-Methylnaphthalene	ND	152	304	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Naphthalene	**163**	152	304	ug/kg dry	40	10/28/20 19:55	EPA 8270E	**J**
Phenanthrene	**515**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Pyrene	**541**	75.9	152	ug/kg dry	40	10/28/20 19:55	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*76 %*	*Limits: 37-122 %*	*40*	*10/28/20 19:55*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*73 %*	*44-120 %*	*40*	*10/28/20 19:55*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*57 %*	*33-122 %*	*40*	*10/28/20 19:55*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*86 %*	*54-127 %*	*40*	*10/28/20 19:55*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*54 %*	*35-120 %*	*40*	*10/28/20 19:55*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*91 %*	*39-132 %*	*40*	*10/28/20 19:55*	*EPA 8270E*	*S-05*
SG06 (A0J0663-12)				**Matrix: Sediment**		**Batch: 0100949**		
Acenaphthene	**93.3**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	**J**
Acenaphthylene	**127**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	**J**
Anthracene	**275**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Benz(a)anthracene	**577**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Benzo(a)pyrene	**877**	112	224	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Benzo(b)fluoranthene	**753**	112	224	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Benzo(k)fluoranthene	**321**	112	224	ug/kg dry	40	10/28/20 20:31	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**586**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Chrysene	**632**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Dibenz(a,h)anthracene	ND	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Fluoranthene	**1770**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Fluorene	**162**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**504**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
2-Methylnaphthalene	ND	150	299	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Naphthalene	**265**	150	299	ug/kg dry	40	10/28/20 20:31	EPA 8270E	**J**
Phenanthrene	**497**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Pyrene	**2080**	74.6	150	ug/kg dry	40	10/28/20 20:31	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*73 %*	*Limits: 37-122 %*	*40*	*10/28/20 20:31*	*EPA 8270E*	*S-05*

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG06 (A0J0663-12)				**Matrix: Sediment**		**Batch: 0100949**		
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*71 %*	*Limits: 44-120 %*	*40*	*10/28/20 20:31*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*34 %*	*33-122 %*	*40*	*10/28/20 20:31*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*83 %*	*54-127 %*	*40*	*10/28/20 20:31*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*75 %*	*35-120 %*	*40*	*10/28/20 20:31*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*77 %*	*39-132 %*	*40*	*10/28/20 20:31*	*EPA 8270E*	*S-05*
SG07 (A0J0663-16)				**Matrix: Sediment**		**Batch: 0100949**		
Acenaphthene	ND	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Acenaphthylene	ND	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Anthracene	**107**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	**J**
Benz(a)anthracene	**467**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Benzo(a)pyrene	**681**	113	226	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Benzo(b)fluoranthene	**675**	113	226	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Benzo(k)fluoranthene	**283**	113	226	ug/kg dry	40	10/28/20 21:06	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**423**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Chrysene	**516**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Dibenz(a,h)anthracene	ND	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Fluoranthene	**904**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Fluorene	**91.9**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	**J**
Indeno(1,2,3-cd)pyrene	**399**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
2-Methylnaphthalene	ND	151	301	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Naphthalene	ND	151	301	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Phenanthrene	**329**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Pyrene	**1130**	75.0	151	ug/kg dry	40	10/28/20 21:06	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*45 %*	*Limits: 37-122 %*	*40*	*10/28/20 21:06*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*47 %*	*44-120 %*	*40*	*10/28/20 21:06*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*25 %*	*33-122 %*	*40*	*10/28/20 21:06*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*84 %*	*54-127 %*	*40*	*10/28/20 21:06*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*23 %*	*35-120 %*	*40*	*10/28/20 21:06*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*87 %*	*39-132 %*	*40*	*10/28/20 21:06*	*EPA 8270E*	*S-05*
EB Sediment (A0J0663-17)				**Matrix: Water**		**Batch: 0100689**		
Acenaphthene	ND	0.0990	0.0990	ug/L	1	10/21/20 13:32	EPA 8270E	R-02
Acenaphthylene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Anthracene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	

Apex Laboratories

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Darrell Auvil, Project Manager

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
EB Sediment (A0J0663-17)				**Matrix: Water**		**Batch: 0100689**		
Benz(a)anthracene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Benzo(a)pyrene	ND	0.0149	0.0297	ug/L	1	10/21/20 13:32	EPA 8270E	
Benzo(b)fluoranthene	ND	0.0149	0.0297	ug/L	1	10/21/20 13:32	EPA 8270E	
Benzo(k)fluoranthene	ND	0.0149	0.0297	ug/L	1	10/21/20 13:32	EPA 8270E	
Benzo(g,h,i)perylene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Chrysene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Dibenz(a,h)anthracene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Fluoranthene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Fluorene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
2-Methylnaphthalene	ND	0.0198	0.0396	ug/L	1	10/21/20 13:32	EPA 8270E	
Naphthalene	ND	0.0198	0.0396	ug/L	1	10/21/20 13:32	EPA 8270E	
Phenanthrene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Pyrene	ND	0.00990	0.0198	ug/L	1	10/21/20 13:32	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*63 %*	*Limits: 44-120 %*	*1*	*10/21/20 13:32*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*52 %*	*44-120 %*	*1*	*10/21/20 13:32*	*EPA 8270E*	
Phenol-d6 (Surr)			*19 %*	*10-133 %*	*1*	*10/21/20 13:32*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*68 %*	*50-134 %*	*1*	*10/21/20 13:32*	*EPA 8270E*	
2-Fluorophenol (Surr)			*32 %*	*19-120 %*	*1*	*10/21/20 13:32*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*79 %*	*43-140 %*	*1*	*10/21/20 13:32*	*EPA 8270E*	
Dup-6 (A0J0663-18)				**Matrix: Sediment**		**Batch: 0100949**		
Acenaphthene	ND	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Acenaphthylene	ND	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Anthracene	**105**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	**J**
Benz(a)anthracene	**462**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Benzo(a)pyrene	**693**	114	227	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Benzo(b)fluoranthene	**664**	114	227	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Benzo(k)fluoranthene	**300**	114	227	ug/kg dry	40	10/28/20 21:40	EPA 8270E	**M-05**
Benzo(g,h,i)perylene	**449**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Chrysene	**466**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Dibenz(a,h)anthracene	ND	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Fluoranthene	**907**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Fluorene	**118**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	**J**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Dup-6 (A0J0663-18)				**Matrix: Sediment**		**Batch: 0100949**		
Indeno(1,2,3-cd)pyrene	**411**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
2-Methylnaphthalene	ND	152	303	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Naphthalene	ND	152	303	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Phenanthrene	**347**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Pyrene	**1060**	75.6	152	ug/kg dry	40	10/28/20 21:40	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*29 %*	*Limits: 37-122 %*	*40*	*10/28/20 21:40*	*EPA 8270E*	*S-05*
2-Fluorobiphenyl (Surr)			*40 %*	*44-120 %*	*40*	*10/28/20 21:40*	*EPA 8270E*	*S-05*
Phenol-d6 (Surr)			*18 %*	*33-122 %*	*40*	*10/28/20 21:40*	*EPA 8270E*	*S-05*
p-Terphenyl-d14 (Surr)			*86 %*	*54-127 %*	*40*	*10/28/20 21:40*	*EPA 8270E*	*S-05*
2-Fluorophenol (Surr)			*5 %*	*35-120 %*	*40*	*10/28/20 21:40*	*EPA 8270E*	*S-05*
2,4,6-Tribromophenol (Surr)			*66 %*	*39-132 %*	*40*	*10/28/20 21:40*	*EPA 8270E*	*S-05*
T4RB-18L-OM (A0J0663-19RE1)				**Matrix: Sediment**		**Batch: 0100949**		
Acenaphthene	**86.2**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Acenaphthylene	ND	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Anthracene	**13.9**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	**J**
Benz(a)anthracene	**46.9**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Benzo(a)pyrene	**41.0**	11.7	23.3	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Benzo(b)fluoranthene	**50.4**	11.7	23.3	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Benzo(k)fluoranthene	**21.8**	11.7	23.3	ug/kg dry	4	10/29/20 11:42	EPA 8270E	**J**
Benzo(g,h,i)perylene	**13.1**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	**J**
Chrysene	**47.5**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Dibenz(a,h)anthracene	ND	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Fluoranthene	**80.8**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Fluorene	ND	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Indeno(1,2,3-cd)pyrene	**14.6**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	**J**
2-Methylnaphthalene	ND	15.6	31.1	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Naphthalene	ND	15.6	31.1	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Phenanthrene	**42.1**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Pyrene	**79.1**	7.75	15.6	ug/kg dry	4	10/29/20 11:42	EPA 8270E	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery:*	*81 %*	*Limits: 37-122 %*	*4*	*10/29/20 11:42*	*EPA 8270E*	
2-Fluorobiphenyl (Surr)			*75 %*	*44-120 %*	*4*	*10/29/20 11:42*	*EPA 8270E*	
Phenol-d6 (Surr)			*63 %*	*33-122 %*	*4*	*10/29/20 11:42*	*EPA 8270E*	
p-Terphenyl-d14 (Surr)			*82 %*	*54-127 %*	*4*	*10/29/20 11:42*	*EPA 8270E*	

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
T4RB-18L-OM (A0J0663-19RE1)				**Matrix: Sediment**		**Batch: 0100949**		
Surrogate: 2-Fluorophenol (Surr)		*Recovery:*	*68 %*	*Limits: 35-120 %*	*4*	*10/29/20 11:42*	*EPA 8270E*	
2,4,6-Tribromophenol (Surr)			*74 %*	*39-132 %*	*4*	*10/29/20 11:42*	*EPA 8270E*	

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ANALYTICAL SAMPLE RESULTS

Demand Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG04 (A0J0663-04)				**Matrix: Sediment**				
Batch: 0100708								
Total Organic Carbon	**720**	---	200	mg/kg	1	10/26/20 17:36	EPA 9060Amod	
SG05 (A0J0663-08)				**Matrix: Sediment**				
Batch: 0100708								
Total Organic Carbon	**9000**	---	200	mg/kg	1	10/26/20 18:08	EPA 9060Amod	
SG06 (A0J0663-12)				**Matrix: Sediment**				
Batch: 0100708								
Total Organic Carbon	**3600**	---	200	mg/kg	1	10/26/20 18:19	EPA 9060Amod	
SG07 (A0J0663-16)				**Matrix: Sediment**				
Batch: 0100708								
Total Organic Carbon	**4700**	---	200	mg/kg	1	10/26/20 18:30	EPA 9060Amod	
Dup-6 (A0J0663-18)				**Matrix: Sediment**				
Batch: 0100708								
Total Organic Carbon	**4600**	---	200	mg/kg	1	10/26/20 19:02	EPA 9060Amod	
T4RB-18L-OM (A0J0663-19)				**Matrix: Sediment**				
Batch: 0100708								
Total Organic Carbon	**4000**	---	200	mg/kg	1	10/26/20 19:13	EPA 9060Amod	

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ANALYTICAL SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG04 (A0J0663-04)				**Matrix: Sediment**				
Batch: 0100696								
Total Solids	**73.2**	---	1.00	%	1	10/22/20 16:34	SM 2540 G	
SG05 (A0J0663-08)				**Matrix: Sediment**				
Batch: 0100696								
Total Solids	**68.4**	---	1.00	%	1	10/22/20 16:34	SM 2540 G	
SG06 (A0J0663-12)				**Matrix: Sediment**				
Batch: 0100696								
Total Solids	**69.1**	---	1.00	%	1	10/22/20 16:34	SM 2540 G	
SG07 (A0J0663-16)				**Matrix: Sediment**				
Batch: 0100696								
Total Solids	**69.1**	---	1.00	%	1	10/22/20 16:34	SM 2540 G	
Dup-6 (A0J0663-18)				**Matrix: Sediment**				
Batch: 0100696								
Total Solids	**68.4**	---	1.00	%	1	10/22/20 16:34	SM 2540 G	
T4RB-18L-OM (A0J0663-19)				**Matrix: Sediment**				
Batch: 0100696								
Total Solids	**68.3**	---	1.00	%	1	10/22/20 16:34	SM 2540 G	

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ANALYTICAL SAMPLE RESULTS

Grain Size by ASTM D 422m/RSET Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG04 (A0J0663-04)				**Matrix: Sediment**		**Batch: 0100826**		
Gravel (>2.00mm)	**0.23**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Sand (0.063mm - 2.00mm)	**97.9**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Silt (0.005mm < 0.063mm)	**0.50**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Clay (< 0.005 mm)	**1.40**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 4.75 mm sieve (#4)	ND	---	0.01	% of Total	1	10/29/20 12:54	D422mod	GS-01
% Retained 2.00 mm sieve (#10)	**0.23**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.85 mm sieve (#20)	**2.21**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.425 mm sieve (#40)	**28.7**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.250 mm sieve (#60)	**55.6**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.150 mm sieve (#100)	**10.1**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.106 mm sieve (#140)	**0.83**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.075 mm sieve (#200)	**0.31**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.063 mm sieve (#230)	**0.10**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
SG05 (A0J0663-08)				**Matrix: Sediment**		**Batch: 0100826**		
Gravel (>2.00mm)	**0.94**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Sand (0.063mm - 2.00mm)	**85.1**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Silt (0.005mm < 0.063mm)	**9.00**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Clay (< 0.005 mm)	**4.90**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 4.75 mm sieve (#4)	**0.61**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 2.00 mm sieve (#10)	**0.32**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.85 mm sieve (#20)	**0.59**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.425 mm sieve (#40)	**16.4**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.250 mm sieve (#60)	**47.4**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.150 mm sieve (#100)	**17.2**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.106 mm sieve (#140)	**1.94**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.075 mm sieve (#200)	**0.99**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.063 mm sieve (#230)	**0.57**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
SG06 (A0J0663-12)				**Matrix: Sediment**		**Batch: 0100826**		
Gravel (>2.00mm)	**3.37**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Sand (0.063mm - 2.00mm)	**58.9**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Silt (0.005mm < 0.063mm)	**29.1**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**

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Darrell Auvil, Project Manager

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Grain Size by ASTM D 422m/RSET Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SG06 (A0J0663-12)				**Matrix: Sediment**		**Batch: 0100826**		
Clay (< 0.005 mm)	**8.60**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 4.75 mm sieve (#4)	**2.80**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 2.00 mm sieve (#10)	**0.57**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.85 mm sieve (#20)	**1.79**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.425 mm sieve (#40)	**7.38**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.250 mm sieve (#60)	**8.55**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.150 mm sieve (#100)	**11.4**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.106 mm sieve (#140)	**12.2**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.075 mm sieve (#200)	**12.1**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.063 mm sieve (#230)	**5.55**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
SG07 (A0J0663-16)				**Matrix: Sediment**		**Batch: 0100826**		
Gravel (>2.00mm)	**2.46**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Sand (0.063mm - 2.00mm)	**72.6**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Silt (0.005mm < 0.063mm)	**20.2**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Clay (< 0.005 mm)	**4.80**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 4.75 mm sieve (#4)	**1.97**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 2.00 mm sieve (#10)	**0.48**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.85 mm sieve (#20)	**1.24**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.425 mm sieve (#40)	**15.8**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.250 mm sieve (#60)	**36.3**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.150 mm sieve (#100)	**12.3**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.106 mm sieve (#140)	**3.50**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.075 mm sieve (#200)	**2.36**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.063 mm sieve (#230)	**1.15**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Dup-6 (A0J0663-18)				**Matrix: Sediment**		**Batch: 0100826**		
Gravel (>2.00mm)	**6.03**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Sand (0.063mm - 2.00mm)	**69.0**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Silt (0.005mm < 0.063mm)	**20.1**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Clay (< 0.005 mm)	**4.90**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 4.75 mm sieve (#4)	**5.50**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 2.00 mm sieve (#10)	**0.54**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**

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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

ANALYTICAL SAMPLE RESULTS

Grain Size by ASTM D 422m/RSET Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
Dup-6 (A0J0663-18)				**Matrix: Sediment**		**Batch: 0100826**		
% Retained 0.85 mm sieve (#20)	**1.11**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.425 mm sieve (#40)	**15.0**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.250 mm sieve (#60)	**34.7**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.150 mm sieve (#100)	**11.3**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.106 mm sieve (#140)	**3.38**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.075 mm sieve (#200)	**2.29**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.063 mm sieve (#230)	**1.17**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
T4RB-18L-OM (A0J0663-19)				**Matrix: Sediment**		**Batch: 0100826**		
Gravel (>2.00mm)	**3.35**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Sand (0.063mm - 2.00mm)	**56.5**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Silt (0.005mm < 0.063mm)	**24.8**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
Clay (< 0.005 mm)	**15.3**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 4.75 mm sieve (#4)	**3.09**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 2.00 mm sieve (#10)	**0.26**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.85 mm sieve (#20)	**0.78**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.425 mm sieve (#40)	**5.54**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.250 mm sieve (#60)	**16.8**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.150 mm sieve (#100)	**13.0**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.106 mm sieve (#140)	**9.17**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.075 mm sieve (#200)	**7.82**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**
% Retained 0.063 mm sieve (#230)	**3.31**	---	0.01	% of Total	1	10/29/20 12:54	D422mod	**GS-01**

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100689 - EPA 3510C (Acid Extraction)							**Water**					
Blank (0100689-BLK2)			Prepared: 10/21/20 07:24		Analyzed: 10/21/20 11:43							
EPA 8270E												
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	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.182	0.364	ug/L	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 84 %*		*Limits: 44-120 %*				*Dilution: 1x*			
2-Fluorobiphenyl (Surr)			*69 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*24 %*		*10-133 %*				*"*			
p-Terphenyl-d14 (Surr)			*78 %*		*50-134 %*				*"*			
2-Fluorophenol (Surr)			*42 %*		*19-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*88 %*		*43-140 %*				*"*			
LCS (0100689-BS2)			Prepared: 10/21/20 07:24		Analyzed: 10/21/20 12:19							
EPA 8270E												
Acenaphthene	3.57	0.0200	0.0400	ug/L	2	4.00	---	89	47-122%	---	---	
Acenaphthylene	3.67	0.0200	0.0400	ug/L	2	4.00	---	92	41-130%	---	---	
Anthracene	3.54	0.0200	0.0400	ug/L	2	4.00	---	89	57-123%	---	---	
Benz(a)anthracene	3.78	0.0200	0.0400	ug/L	2	4.00	---	95	58-125%	---	---	
Benzo(a)pyrene	3.95	0.0300	0.0600	ug/L	2	4.00	---	99	54-128%	---	---	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100689 - EPA 3510C (Acid Extraction)							**Water**					
LCS (0100689-BS2)			Prepared: 10/21/20 07:24		Analyzed: 10/21/20 12:19							
Benzo(b)fluoranthene	3.89	0.0300	0.0600	ug/L	2	4.00	---	97	53-131%	---	---	
Benzo(k)fluoranthene	3.65	0.0300	0.0600	ug/L	2	4.00	---	91	57-129%	---	---	
Benzo(g,h,i)perylene	3.74	0.0200	0.0400	ug/L	2	4.00	---	94	50-134%	---	---	
Chrysene	3.86	0.0200	0.0400	ug/L	2	4.00	---	96	59-123%	---	---	
Dibenz(a,h)anthracene	3.52	0.0200	0.0400	ug/L	2	4.00	---	88	51-134%	---	---	
Fluoranthene	3.66	0.0200	0.0400	ug/L	2	4.00	---	92	57-128%	---	---	
Fluorene	3.46	0.0200	0.0400	ug/L	2	4.00	---	87	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.40	0.0200	0.0400	ug/L	2	4.00	---	85	52-134%	---	---	
1-Methylnaphthalene	3.42	0.0400	0.0800	ug/L	2	4.00	---	85	41-120%	---	---	
2-Methylnaphthalene	3.46	0.0400	0.0800	ug/L	2	4.00	---	87	40-121%	---	---	
Naphthalene	3.24	0.0400	0.0800	ug/L	2	4.00	---	81	40-121%	---	---	
Phenanthrene	3.40	0.0200	0.0400	ug/L	2	4.00	---	85	59-120%	---	---	
Pyrene	3.70	0.0200	0.0400	ug/L	2	4.00	---	92	57-126%	---	---	
Bis(2-ethylhexyl)phthalate	4.59	0.400	0.800	ug/L	2	4.00	---	115	55-135%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 86 %*		*Limits: 44-120 %*				*Dilution: 2x*			
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*31 %*		*10-133 %*				*"*			
p-Terphenyl-d14 (Surr)			*93 %*		*50-134 %*				*"*			
2-Fluorophenol (Surr)			*52 %*		*19-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*96 %*		*43-140 %*				*"*			
LCS Dup (0100689-BSD2)			Prepared: 10/21/20 07:24		Analyzed: 10/21/20 12:55							**Q-19**
EPA 8270E												
Acenaphthene	3.49	0.0200	0.0400	ug/L	2	4.00	---	87	47-122%	2	30%	
Acenaphthylene	3.67	0.0200	0.0400	ug/L	2	4.00	---	92	41-130%	0.001	30%	
Anthracene	3.56	0.0200	0.0400	ug/L	2	4.00	---	89	57-123%	0.4	30%	
Benz(a)anthracene	3.64	0.0200	0.0400	ug/L	2	4.00	---	91	58-125%	4	30%	
Benzo(a)pyrene	3.78	0.0300	0.0600	ug/L	2	4.00	---	94	54-128%	5	30%	
Benzo(b)fluoranthene	3.58	0.0300	0.0600	ug/L	2	4.00	---	90	53-131%	8	30%	
Benzo(k)fluoranthene	3.54	0.0300	0.0600	ug/L	2	4.00	---	89	57-129%	3	30%	
Benzo(g,h,i)perylene	3.64	0.0200	0.0400	ug/L	2	4.00	---	91	50-134%	3	30%	
Chrysene	3.89	0.0200	0.0400	ug/L	2	4.00	---	97	59-123%	0.8	30%	
Dibenz(a,h)anthracene	3.43	0.0200	0.0400	ug/L	2	4.00	---	86	51-134%	3	30%	
Fluoranthene	3.67	0.0200	0.0400	ug/L	2	4.00	---	92	57-128%	0.3	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100689 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (0100689-BSD2)			Prepared: 10/21/20 07:24		Analyzed: 10/21/20 12:55							**Q-19**
Fluorene	3.45	0.0200	0.0400	ug/L	2	4.00	---	86	52-124%	0.3	30%	
Indeno(1,2,3-cd)pyrene	3.42	0.0200	0.0400	ug/L	2	4.00	---	86	52-134%	0.7	30%	
1-Methylnaphthalene	3.46	0.0400	0.0800	ug/L	2	4.00	---	87	41-120%	1	30%	
2-Methylnaphthalene	3.39	0.0400	0.0800	ug/L	2	4.00	---	85	40-121%	2	30%	
Naphthalene	3.12	0.0400	0.0800	ug/L	2	4.00	---	78	40-121%	4	30%	
Phenanthrene	3.36	0.0200	0.0400	ug/L	2	4.00	---	84	59-120%	1	30%	
Pyrene	3.84	0.0200	0.0400	ug/L	2	4.00	---	96	57-126%	4	30%	
Bis(2-ethylhexyl)phthalate	4.36	0.400	0.800	ug/L	2	4.00	---	109	55-135%	5	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 86 %*		*Limits: 44-120 %*			*Dilution: 2x*				
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*29 %*		*10-133 %*			*"*				
p-Terphenyl-d14 (Surr)			*89 %*		*50-134 %*			*"*				
2-Fluorophenol (Surr)			*50 %*		*19-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*95 %*		*43-140 %*			*"*				

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100949 - EPA 3546							**Sediment**					
Blank (0100949-BLK1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 15:07							
EPA 8270E												
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	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 90 %*		*Limits: 37-122 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*80 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*78 %*		*33-122 %*			*"*				
p-Terphenyl-d14 (Surr)			*92 %*		*54-127 %*			*"*				
2-Fluorophenol (Surr)			*81 %*		*35-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*83 %*		*39-132 %*			*"*				
LCS (0100949-BS1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 15:44							
EPA 8270E												
Acenaphthene	451	2.66	5.34	ug/kg wet	2	533	---	84	40-123%	---	---	
Acenaphthylene	473	2.66	5.34	ug/kg wet	2	533	---	89	32-132%	---	---	
Anthracene	454	2.66	5.34	ug/kg wet	2	533	---	85	47-123%	---	---	
Benz(a)anthracene	457	2.66	5.34	ug/kg wet	2	533	---	86	49-126%	---	---	
Benzo(a)pyrene	457	4.00	8.00	ug/kg wet	2	533	---	86	45-129%	---	---	
Benzo(b)fluoranthene	460	4.00	8.00	ug/kg wet	2	533	---	86	45-132%	---	---	

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Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100949 - EPA 3546							**Sediment**					
LCS (0100949-BS1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 15:44							
Benzo(k)fluoranthene	420	4.00	8.00	ug/kg wet	2	533	---	79	47-132%	---	---	
Benzo(g,h,i)perylene	425	2.66	5.34	ug/kg wet	2	533	---	80	43-134%	---	---	
Chrysene	456	2.66	5.34	ug/kg wet	2	533	---	85	50-124%	---	---	
Dibenz(a,h)anthracene	420	2.66	5.34	ug/kg wet	2	533	---	79	45-134%	---	---	
Fluoranthene	471	2.66	5.34	ug/kg wet	2	533	---	88	50-127%	---	---	
Fluorene	446	2.66	5.34	ug/kg wet	2	533	---	84	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	403	2.66	5.34	ug/kg wet	2	533	---	76	45-133%	---	---	
1-Methylnaphthalene	460	5.34	10.7	ug/kg wet	2	533	---	86	40-120%	---	---	
2-Methylnaphthalene	464	5.34	10.7	ug/kg wet	2	533	---	87	38-122%	---	---	
Naphthalene	432	5.34	10.7	ug/kg wet	2	533	---	81	35-123%	---	---	
Phenanthrene	429	2.66	5.34	ug/kg wet	2	533	---	81	50-121%	---	---	
Pyrene	481	2.66	5.34	ug/kg wet	2	533	---	90	47-127%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 96 %*		*Limits: 37-122 %*				*Dilution: 2x*			
2-Fluorobiphenyl (Surr)			*88 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*93 %*		*33-122 %*				*"*			
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*				*"*			
2-Fluorophenol (Surr)			*87 %*		*35-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*95 %*		*39-132 %*				*"*			
Duplicate (0100949-DUP1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 16:56							
QC Source Sample: SG04 (A0J0663-04)												
EPA 8270E												
Acenaphthene	ND	71.7	144	ug/kg dry	40	---	ND	---	---	---	30%	
Acenaphthylene	ND	71.7	144	ug/kg dry	40	---	ND	---	---	---	30%	
Anthracene	ND	71.7	144	ug/kg dry	40	---	ND	---	---	---	30%	
Benz(a)anthracene	**297**	71.7	144	ug/kg dry	40	---	311	---	---	5	30%	
Benzo(a)pyrene	**428**	108	216	ug/kg dry	40	---	411	---	---	4	30%	
Benzo(b)fluoranthene	**361**	108	216	ug/kg dry	40	---	370	---	---	2	30%	
Benzo(k)fluoranthene	**197**	108	216	ug/kg dry	40	---	184	---	---	7	30%	J
Benzo(g,h,i)perylene	**277**	71.7	144	ug/kg dry	40	---	246	---	---	12	30%	
Chrysene	**323**	71.7	144	ug/kg dry	40	---	316	---	---	2	30%	
Dibenz(a,h)anthracene	ND	71.7	144	ug/kg dry	40	---	ND	---	---	---	30%	
Fluoranthene	**674**	71.7	144	ug/kg dry	40	---	634	---	---	6	30%	
Fluorene	ND	71.7	144	ug/kg dry	40	---	ND	---	---	---	30%	

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100949 - EPA 3546							**Sediment**					
Duplicate (0100949-DUP1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 16:56							
QC Source Sample: SG04 (A0J0663-04)												
Indeno(1,2,3-cd)pyrene	**260**	71.7	144	ug/kg dry	40	---	239	---	---	9	30%	
1-Methylnaphthalene	ND	144	287	ug/kg dry	40	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	144	287	ug/kg dry	40	---	ND	---	---	---	30%	
Naphthalene	ND	144	287	ug/kg dry	40	---	ND	---	---	---	30%	
Phenanthrene	**209**	71.7	144	ug/kg dry	40	---	229	---	---	9	30%	
Pyrene	**857**	71.7	144	ug/kg dry	40	---	858	---	---	0.2	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 52 %*		*Limits: 37-122 %*		*Dilution: 40x*					S-05
2-Fluorobiphenyl (Surr)			*70 %*		*44-120 %*		*"*					S-05
Phenol-d6 (Surr)			*38 %*		*33-122 %*		*"*					S-05
p-Terphenyl-d14 (Surr)			*86 %*		*54-127 %*		*"*					S-05
2-Fluorophenol (Surr)			*34 %*		*35-120 %*		*"*					S-05
2,4,6-Tribromophenol (Surr)			*57 %*		*39-132 %*		*"*					S-05
Matrix Spike (0100949-MS1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 18:44							
QC Source Sample: Non-SDG (A0J0768-12RE1)												
EPA 8270E												
Acenaphthene	374	5.23	10.5	ug/kg wet	4	524	25.3	67	40-123%	---	---	
Acenaphthylene	373	5.23	10.5	ug/kg wet	4	524	15.6	68	32-132%	---	---	
Anthracene	428	5.23	10.5	ug/kg wet	4	524	25.6	77	47-123%	---	---	
Benz(a)anthracene	457	5.23	10.5	ug/kg wet	4	524	55.5	77	49-126%	---	---	
Benzo(a)pyrene	513	7.86	15.7	ug/kg wet	4	524	67.1	85	45-129%	---	---	
Benzo(b)fluoranthene	487	7.86	15.7	ug/kg wet	4	524	55.9	82	45-132%	---	---	
Benzo(k)fluoranthene	409	7.86	15.7	ug/kg wet	4	524	27.9	73	47-132%	---	---	
Benzo(g,h,i)perylene	452	5.23	10.5	ug/kg wet	4	524	35.0	80	43-134%	---	---	
Chrysene	462	5.23	10.5	ug/kg wet	4	524	54.0	78	50-124%	---	---	
Dibenz(a,h)anthracene	360	5.23	10.5	ug/kg wet	4	524	ND	69	45-134%	---	---	
Fluoranthene	571	5.23	10.5	ug/kg wet	4	524	126	85	50-127%	---	---	
Fluorene	365	5.23	10.5	ug/kg wet	4	524	14.5	67	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	402	5.23	10.5	ug/kg wet	4	524	29.6	71	45-133%	---	---	
1-Methylnaphthalene	330	10.5	21.0	ug/kg wet	4	524	ND	63	40-120%	---	---	
2-Methylnaphthalene	326	10.5	21.0	ug/kg wet	4	524	ND	62	38-122%	---	---	
Naphthalene	324	10.5	21.0	ug/kg wet	4	524	25.0	57	35-123%	---	---	
Phenanthrene	523	5.23	10.5	ug/kg wet	4	524	88.2	83	50-121%	---	---	

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100949 - EPA 3546							**Sediment**					
Matrix Spike (0100949-MS1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 18:44							
QC Source Sample: Non-SDG (A0J0768-12RE1)												
Pyrene	624	5.23	10.5	ug/kg wet	4	524	143	92	47-127%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 61 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*52 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*63 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*71 %*		*54-127 %*		*"*					
2-Fluorophenol (Surr)			*51 %*		*35-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*84 %*		*39-132 %*		*"*					
Matrix Spike Dup (0100949-MSD1)			Prepared: 10/28/20 06:51		Analyzed: 10/28/20 19:20							
QC Source Sample: Non-SDG (A0J0768-12RE1)												
Acenaphthene	388	5.23	10.5	ug/kg wet	4	524	25.3	69	40-123%	4	30%	
Acenaphthylene	401	5.23	10.5	ug/kg wet	4	524	15.6	74	32-132%	7	30%	
Anthracene	442	5.23	10.5	ug/kg wet	4	524	25.6	79	47-123%	3	30%	
Benz(a)anthracene	453	5.23	10.5	ug/kg wet	4	524	55.5	76	49-126%	0.9	30%	
Benzo(a)pyrene	487	7.86	15.7	ug/kg wet	4	524	67.1	80	45-129%	5	30%	
Benzo(b)fluoranthene	481	7.86	15.7	ug/kg wet	4	524	55.9	81	45-132%	1	30%	
Benzo(k)fluoranthene	433	7.86	15.7	ug/kg wet	4	524	27.9	77	47-132%	6	30%	
Benzo(g,h,i)perylene	423	5.23	10.5	ug/kg wet	4	524	35.0	74	43-134%	7	30%	
Chrysene	457	5.23	10.5	ug/kg wet	4	524	54.0	77	50-124%	1	30%	
Dibenz(a,h)anthracene	384	5.23	10.5	ug/kg wet	4	524	ND	73	45-134%	6	30%	
Fluoranthene	519	5.23	10.5	ug/kg wet	4	524	126	75	50-127%	10	30%	
Fluorene	401	5.23	10.5	ug/kg wet	4	524	14.5	74	43-125%	9	30%	
Indeno(1,2,3-cd)pyrene	389	5.23	10.5	ug/kg wet	4	524	29.6	69	45-133%	3	30%	
1-Methylnaphthalene	363	10.5	21.0	ug/kg wet	4	524	ND	69	40-120%	9	30%	
2-Methylnaphthalene	358	10.5	21.0	ug/kg wet	4	524	ND	68	38-122%	9	30%	
Naphthalene	346	10.5	21.0	ug/kg wet	4	524	25.0	61	35-123%	7	30%	
Phenanthrene	474	5.23	10.5	ug/kg wet	4	524	88.2	74	50-121%	10	30%	
Pyrene	540	5.23	10.5	ug/kg wet	4	524	143	76	47-127%	14	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 66 %*		*Limits: 37-122 %*		*Dilution: 4x*					
2-Fluorobiphenyl (Surr)			*61 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*68 %*		*33-122 %*		*"*					
p-Terphenyl-d14 (Surr)			*78 %*		*54-127 %*		*"*					

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Darrell Auvil, Project Manager

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3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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 0100949 - EPA 3546												**Sediment**
Matrix Spike Dup (0100949-MSD1)				Prepared: 10/28/20 06:51 Analyzed: 10/28/20 19:20								
QC Source Sample: Non-SDG (A0J0768-12RE1)												
Surr: 2-Fluorophenol (Surr)				*Recovery: 54 %*	*Limits: 35-120 %*							*Dilution: 4x*
2,4,6-Tribromophenol (Surr)				*91 %*	*39-132 %*							*"*

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QUALITY CONTROL (QC) SAMPLE RESULTS

Demand Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100708 - PSEP-5310B TOC							**Soil**					
Blank (0100708-BLK1)			Prepared: 10/21/20 10:33		Analyzed: 10/26/20 16:53							
EPA 9060Amod												
Total Organic Carbon	ND	---	200	mg/kg	1	---	---	---	---	---	---	
LCS (0100708-BS1)			Prepared: 10/21/20 10:33		Analyzed: 10/26/20 17:04							
EPA 9060Amod												
Total Organic Carbon	9300	---		mg/kg	1	10000	---	93	88-111%	---	---	
Duplicate (0100708-DUP1)			Prepared: 10/21/20 10:33		Analyzed: 10/26/20 17:47							
QC Source Sample: SG04 (A0J0663-04)												
EPA 9060Amod												
Total Organic Carbon	**700**	---	200	mg/kg	1	---	720	---	---	2	27%	
Duplicate (0100708-DUP2)			Prepared: 10/21/20 10:33		Analyzed: 10/26/20 17:57							
QC Source Sample: SG04 (A0J0663-04)												
EPA 9060Amod												
Total Organic Carbon	**810**	---	200	mg/kg	1	---	720	---	---	13	27%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 0100696 - Total Solids (SM2540G/PSEP)								Sediment				
Duplicate (0100696-DUP1)			Prepared: 10/21/20 09:07			Analyzed: 10/22/20 16:34						
QC Source Sample: Non-SDG (A0J0671-01)												
Total Solids	**71.1**	---	1.00	%	1	---	67.7	---	---	5	10%	
Duplicate (0100696-DUP2)			Prepared: 10/21/20 09:07			Analyzed: 10/22/20 16:34						
QC Source Sample: SG04 (A0J0663-04)												
SM 2540 G												
Total Solids	**75.2**	---	1.00	%	1	---	73.2	---	---	3	10%	

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3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
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SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100689							
A0J0663-17	Water	EPA 8270E	10/16/20 17:10	10/21/20 07:24	1010mL/1mL	1000mL/1mL	0.99

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100949							
A0J0663-04	Sediment	EPA 8270E	10/15/20 14:00	10/28/20 06:51	15.11g/2mL	15g/2mL	0.99
A0J0663-08	Sediment	EPA 8270E	10/15/20 16:55	10/28/20 06:51	15.36g/2mL	15g/2mL	0.98
A0J0663-12	Sediment	EPA 8270E	10/16/20 12:20	10/28/20 06:51	15.48g/2mL	15g/2mL	0.97
A0J0663-16	Sediment	EPA 8270E	10/16/20 14:45	10/28/20 06:51	15.39g/2mL	15g/2mL	0.98
A0J0663-18	Sediment	EPA 8270E	10/16/20 00:00	10/28/20 06:51	15.44g/2mL	15g/2mL	0.97
A0J0663-19RE1	Sediment	EPA 8270E	10/16/20 15:50	10/28/20 06:51	15.08g/2mL	15g/2mL	1.00

Demand Parameters

Prep: PSEP-5310B TOC

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100708							
A0J0663-04	Sediment	EPA 9060Amod	10/15/20 14:00	10/21/20 10:33			NA
A0J0663-08	Sediment	EPA 9060Amod	10/15/20 16:55	10/21/20 10:33			NA
A0J0663-12	Sediment	EPA 9060Amod	10/16/20 12:20	10/21/20 10:33			NA
A0J0663-16	Sediment	EPA 9060Amod	10/16/20 14:45	10/21/20 10:33			NA
A0J0663-18	Sediment	EPA 9060Amod	10/16/20 00:00	10/21/20 10:33			NA
A0J0663-19	Sediment	EPA 9060Amod	10/16/20 15:50	10/21/20 10:33			NA

Solid and Moisture Determinations

Prep: Total Solids (SM2540G/PSEP)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100696							
A0J0663-04	Sediment	SM 2540 G	10/15/20 14:00	10/21/20 09:27			NA
A0J0663-08	Sediment	SM 2540 G	10/15/20 16:55	10/21/20 09:27			NA
A0J0663-12	Sediment	SM 2540 G	10/16/20 12:20	10/21/20 09:27			NA
A0J0663-16	Sediment	SM 2540 G	10/16/20 14:45	10/21/20 09:27			NA
A0J0663-18	Sediment	SM 2540 G	10/16/20 00:00	10/21/20 09:27			NA
A0J0663-19	Sediment	SM 2540 G	10/16/20 15:50	10/21/20 09:27			NA

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SAMPLE PREPARATION INFORMATION

Grain Size by ASTM D 422m/RSET Parameters

Prep: ASTM D 421

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 0100826							
A0J0663-04	Sediment	D422mod	10/15/20 14:00	10/26/20 10:27			NA
A0J0663-08	Sediment	D422mod	10/15/20 16:55	10/26/20 10:48			NA
A0J0663-12	Sediment	D422mod	10/16/20 12:20	10/26/20 11:09			NA
A0J0663-16	Sediment	D422mod	10/16/20 14:45	10/26/20 11:31			NA
A0J0663-18	Sediment	D422mod	10/16/20 00:00	10/26/20 11:53			NA
A0J0663-19	Sediment	D422mod	10/16/20 15:50	10/26/20 12:16			NA

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QUALIFIER DEFINITIONS

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

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GS-01	See detailed Particle Size Analysis results, accumulation curves, and Case Narratives at the end of this report.
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.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

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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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3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

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.

Apex Laboratories



Darrell Auvil, Project Manager

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Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

LABORATORY ACCREDITATION INFORMATION

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

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

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

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

Secondary Accreditations

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

Subcontract Laboratory Accreditations

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

Field Testing Parameters

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

Apex Laboratories



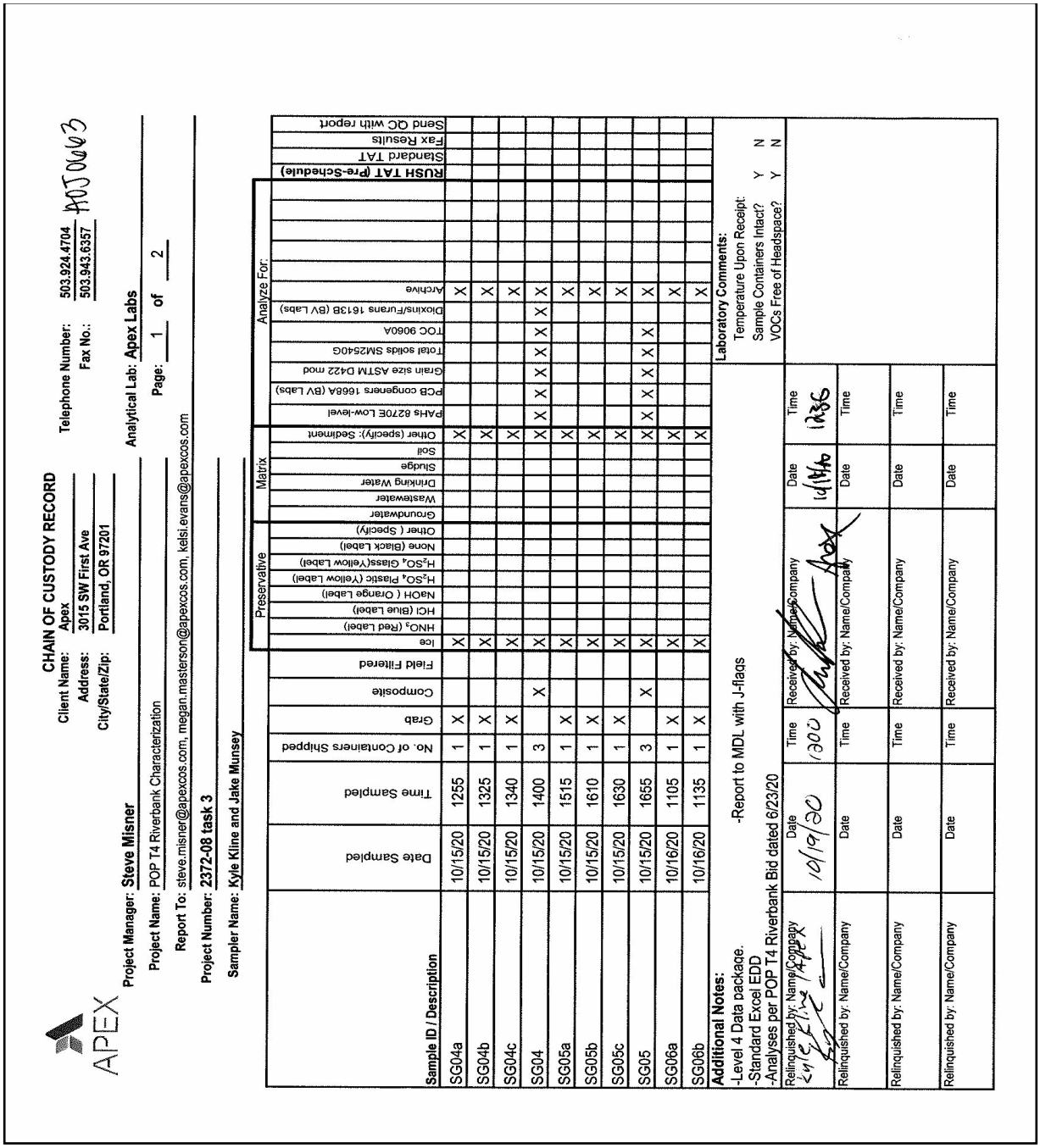
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Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**



CHAIN OF CUSTODY RECORD

Client Name: Apex | Telephone Number: 503.924.4704 | A0J0663
Address: 3015 SW First Ave | Fax No.: 503.943.6357
City/State/Zip: Portland, OR 97201 | Analytical Lab: Apex Labs
Project Manager: Steve Misner | Page: 1 of 2
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Jake Munsey

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify): Sediment	Analyze For: PAHs 8270E Low-level	PCB congeners 1668A (BV Labs)	Grain size ASTM D422 mod	Total solids SM2540G	TOC 9060A	Dioxins/Furans 1613B (BV Labs)	Archive	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
SG04a	10/15/20	1255	1	X			X													X							X				
SG04b	10/15/20	1325	1	X				X												X							X				
SG04c	10/15/20	1340	1	X			X													X							X				
SG04	10/15/20	1400	3		X			X												X	X	X	X	X	X	X	X				
SG05a	10/15/20	1515	1	X			X													X							X				
SG05b	10/15/20	1610	1	X			X													X							X				
SG05c	10/15/20	1630	1	X			X													X							X				
SG05	10/15/20	1655	3		X		X													X	X	X	X	X	X		X				
SG06a	10/16/20	1105	1	X			X													X							X				
SG06b	10/16/20	1135	1	X			X													X							X				

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
[illegible]	10/19/20	1300	[illegible]	10/19/20	1835
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

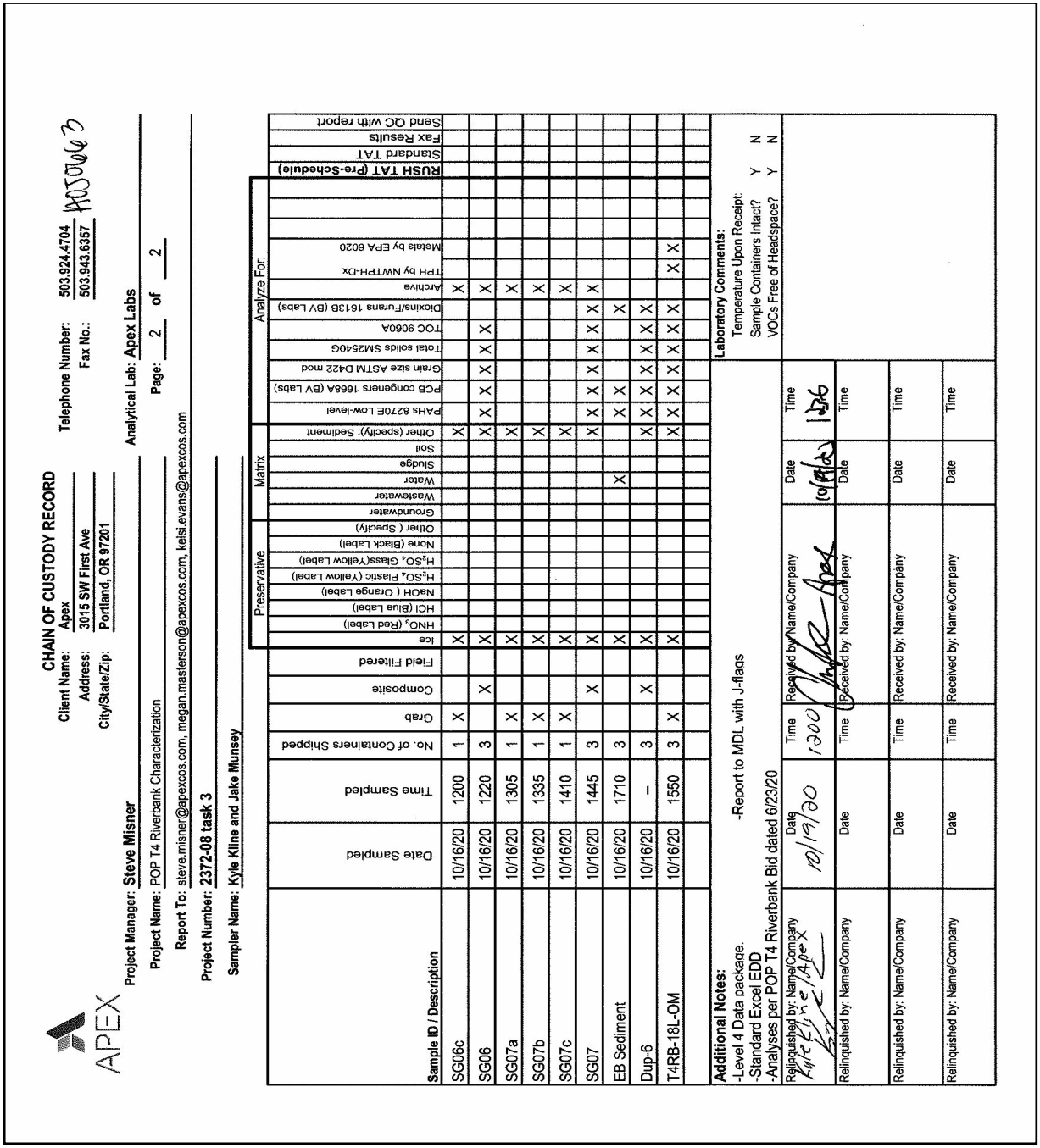
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Darrell Auvil, Project Manager

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ORELAP ID: **OR100062**

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**



CHAIN OF CUSTODY RECORD

Client Name: Apex
Address: 3015 SW First Ave
City/State/Zip: Portland, OR 97201
Telephone Number: 503.924.4704
Fax No.: 503.943.6357
Analytical Lab: Apex Labs
Page: 2 of 2

Project Manager: Steve Misner
Project Name: POP T4 Riverbank Characterization
Report To: steve.misner@apexcos.com, megan.masterson@apexcos.com, kelsi.evans@apexcos.com
Project Number: 2372-08 task 3
Sampler Name: Kyle Kline and Jake Munsey

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Ice	HNO3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H2SO4 Plastic (Yellow Label)	H2SO4 Glass(Yellow Label)	None (Black Label)	Other (Specify)	Matrix: Groundwater	Wastewater	Water	Sludge	Soil	Other (specify): Sediment	Analyze For: PAHs 8270E Low-level	PCB congeners 1668A (BV Labs)	Grain size ASTM D422 mod	Total solids SM2540G	TOC 9060A	Dioxins/Furans 1613B (BV Labs)	Archive	TPH by NWTPH-Dx	Metals by EPA 6020	RUSH TAT (Pre-Schedule)	Standard TAT	Fax Results	Send QC with report
SG06c	10/16/20	1200	1	X			X													X							X					
SG06	10/16/20	1220	3		X		X													X	X	X	X	X	X	X	X					
SG07a	10/16/20	1305	1	X			X													X							X					
SG07b	10/16/20	1335	1	X			X													X							X					
SG07c	10/16/20	1410	1	X			X													X							X					
SG07	10/16/20	1445	3		X		X													X	X	X	X	X	X	X	X					
EB Sediment	10/16/20	1710	3				X									X					X	X										
Dup-6	10/16/20	--	3		X		X													X	X	X	X	X	X							
T4RB-18L-OM	10/16/20	1550	3	X			X													X	X	X	X	X	X		X	X				

Additional Notes:
-Level 4 Data package.
-Standard Excel EDD
-Analyses per POP T4 Riverbank Bid dated 6/23/20
-Report to MDL with J-flags

Laboratory Comments:
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Kyle Kline/Apex	10/19/20	1300			
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time
Relinquished by: Name/Company	Date	Time	Received by: Name/Company	Date	Time

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC

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

Apex Companies, LLC	Project: **POP --- T4 Riverbank**	
3015 SW First Avenue	Project Number: **2372-08 task 3**	**Report ID:**
Portland, OR 97201	Project Manager: **Steve Misner**	**A0J0663 - 12 02 20 1646**

APEX LABS COOLER RECEIPT FORM

Client: Apex Companies Element WO#: A0 J0663

Project/Project #: POP T4 Riverbank Characterization 2372-08 task 3

Delivery Info:

Date/time received: 10/Apr @ 1236 By: CFH

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

Cooler Inspection Date/time inspected: 10/Apr @ 1314 By: CFH

Chain of Custody included? Yes Y No Custody seals? Yes No X

Signed/dated by client? Yes Y No

Signed/dated by Apex? Yes Y No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	3.9	4.5					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	N	N					
Ice type: (Gel/Real/Other)	Real	Real					
Condition:	Good	Good					

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

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

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

Samples Inspection: Date/time inspected: 10/19/20 @ 1741 By: AKK

All samples intact? Yes X No Comments:

Bottle labels/COCs agree? Yes X No Comments:

COC/container discrepancies form initiated? Yes No X

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

Do VOA vials have visible headspace? Yes No NA X

Comments

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

Comments:

Additional information:

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

Apex Laboratories

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Darrell Auvil, Project Manager

Apex Laboratories, LLC m

Particle Size Analysis of Soil by ASTM D 422m

Sample ID:8	J0663-048	Client Sample ID:8	SG048	Batch Number:8	1008268
ata Entered by8		ate:8	10/30/208	Data Reviewed by8	JW8	ate:8	10/30/208
Sample Description:8	SAND with trace Silt and Clay8	Max Particle Size:8	Gravel8		
Particle Shape:8	N/A8	Hardness8	N/A8		

Whole Sample 6	e 6	Air Dry + Tare6	Air Dry6	Moisture6	Dry Wt.6
	12.0946	408.5546	396.46	1.696	389.96

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative Wt. 8 Retained 8	% Retained8	% Passing8
48	489:	8	8	8	8	8	˜ 8
˜	!8	1.2968	!8!˜!	8;!	8;!	8!	;;8
Pan8		12.0948	407.5428	395.458	396.368	;;89	

Hygroscop c Moisture Comecm nm

	0$2°+*ˇ+pic Correction Factor8	1' en Sample8	Pan No. 8	Tare8	Air Dry + Tare8	1' en Dry + Tare8	Moisture 8
	.98348		J663-048	˜8!;9	20.0538	19.7428	1.698

Hydrometer Analysism

Start Date/Time8	10/26/! !	10:278	ispersing Agent8	$NaPO_{38}$
Air Dry Sample Wt. for Hydrometer Test (g)8	˜ 8!˜:		G, Correction Factor (α)8	˜8
Percent Passing No.10 Sieve 8	;;8		Specific Gravit$ (G,4	2.65
°$ Weight of Soil Tested (g)8	; 8::		Corrected Dry Weight of Soil Tested (g) (W4	; 89;

Elapsed Time 8 (min4	Hydrometer 8 Reading8	Temperature 8 3C)8	Corrected 8 Hydrometer 8 Reading [R]8	% Finer of 8 Hydrometer 8 Sample8	=	>	Particle 8 Diameter (mm)8	Percent Passing8
˜	˜	˜;8˜	3.78	3.8	14.58	.013828	.0538	3.828
!	;	˜;8˜	!89	!8	14.78	.013828	.0378	!8 ˜
48	8:	˜;8˜	!8!	2.38	14.78	.013828	.0268	2.308
	8:	˜;8˜	!8!	2.38	14.78	.01382	8 ˜;	2.308
˜:		˜;8!	˜8 ˜	˜ 8	14.8	.013828	.0148	1.838
308		19.38	˜8 48	˜ 8;	14.8	.01382	8 ˜	1.868
608		19.38	˜8 48	˜ 8;	14.8	.01382	8 9	1.868
;	98:	19.38	1.348	1.48	14.8	.013828	.0068	1.358
˜!	98:	19.38	1.348	1.48	14.8	.01382	8 :	1.358
2408	9	˜;89	8;:	˜8	˜:	.013658	.0038	.968
3608	6.58	20.48	.66	89	˜:	.013658	.0038	.668
14408	6.58	˜ 8;	8!!	8!	˜:	.01382	8 ˜	8!!

Sieve Analysis of Portion Finer Than No. 10 Sievem

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative 8 Retained 8	% Retained8	% Passing8
!	8 :	˜8! 48	3.4708	!8˜;	9.548	!8!	97.68
408	.4258	˜8! :	29.6678	! 8 38	121.548	! 89	68.8
60	8!:	˜8!9:	56.238	54.968	338.428	55.68	13.28
˜	8˜:	1.2868	11.2838	˜ 8	377.878	˜ 8˜	3.18
140	8˜ :	˜8!	!8 ;;	8 !	38˜8˜	8	!8!
!	8 9:	˜8! ;	˜8:;!	.308	382.308	.38	˜8;
2308	.0638	˜8! :	1.380	8 ;	382.67	8˜	˜8
			Sum8	96.758	230 Minus8	˜8 ˜	

Apex Laboratories, LLCm
Particle Size Analysis of Soil by ASTM D 422 Modifiedm

Sample ID:mSG04 (A0J0663-04) 8

Grain Size Analysis Summary from Sieving and Hydrometer Testing8	Particle Size 8 (mm)8	Percent 8 Finer8	Total Percent 8 of Sample8
Gravel8			*0.23*
Retained on No. 4 sieve8	4.758	˜	
Gravel, passing No. 4 sieve and retained on No. 10 sieve8	! 8	;;8 99	.238
Sand8			*97.93*
Coarse sand, passing No. 10 sieve and retained on No. 20 sieve8	8 :	;98::	!8!˜
Medium sand, passing No. 20 sieve and retained on No. 40 sieve8	.42508	688 !	! .738
Medium sand, passing No. 40 sieve and retained on No. 60 sieve8	8!:	13.18	55.648
Medium sand, passing No. 60 sieve and retained on No. 100 sieve	8˜:	3.068	˜ 8˜!
Fine sand, passing No. 100 sieve and retained on No. 140 sieve	8˜ :	2.23	8 38
Fine sand, passing No. 140 sieve and retained on No. 200 sieve	8 9:	1.938	.318
Fine sand, passing No. 200 sieve and retained on No. 230 sieve8	.06308	˜8 3	8˜
Silt and Clay (Measurements in the Clay fraction are noted)8			*1.83*
0$drometer Test8	.05268	3.828	
0$drometer Test8	.03758	!8 ˜	
0$drometer Test8	.02658	2.38	
0$drometer Test	8 ˜ 9	2.38	
0$drometer Test8	.01378	1.838	
0$drometer Test	8 ;9	1.868	
0$drometer Test8	.00698	1.868	
0$drometer Test8	.00568	1.358	.48
0$drometer Test8 Clay 8	.00498	1.358	
0$drometer Test8 Clay 8	.00348	.968	.398
0$drometer Test8 Clay	8 !		.668 .38
0$drometer Test8 Clay 8	.0014	8!!	.448

Grain Size Sum arym	**Percent of Total Samplem**
Gravel	8!
Sand8	;98;
Coarse sand 8	!8!
Medium sand 8	94.58
Fine sand 8	˜8!
Silt	8:
Clay 8	1.48

Case Narrative for Sample ID:m SG04 (A0J0663-04) m

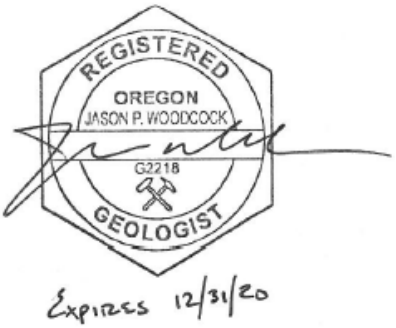
This data is not to be used for engineering purposes.8

No difficulty dispersing the fraction passing the No. 10 sieve. 8

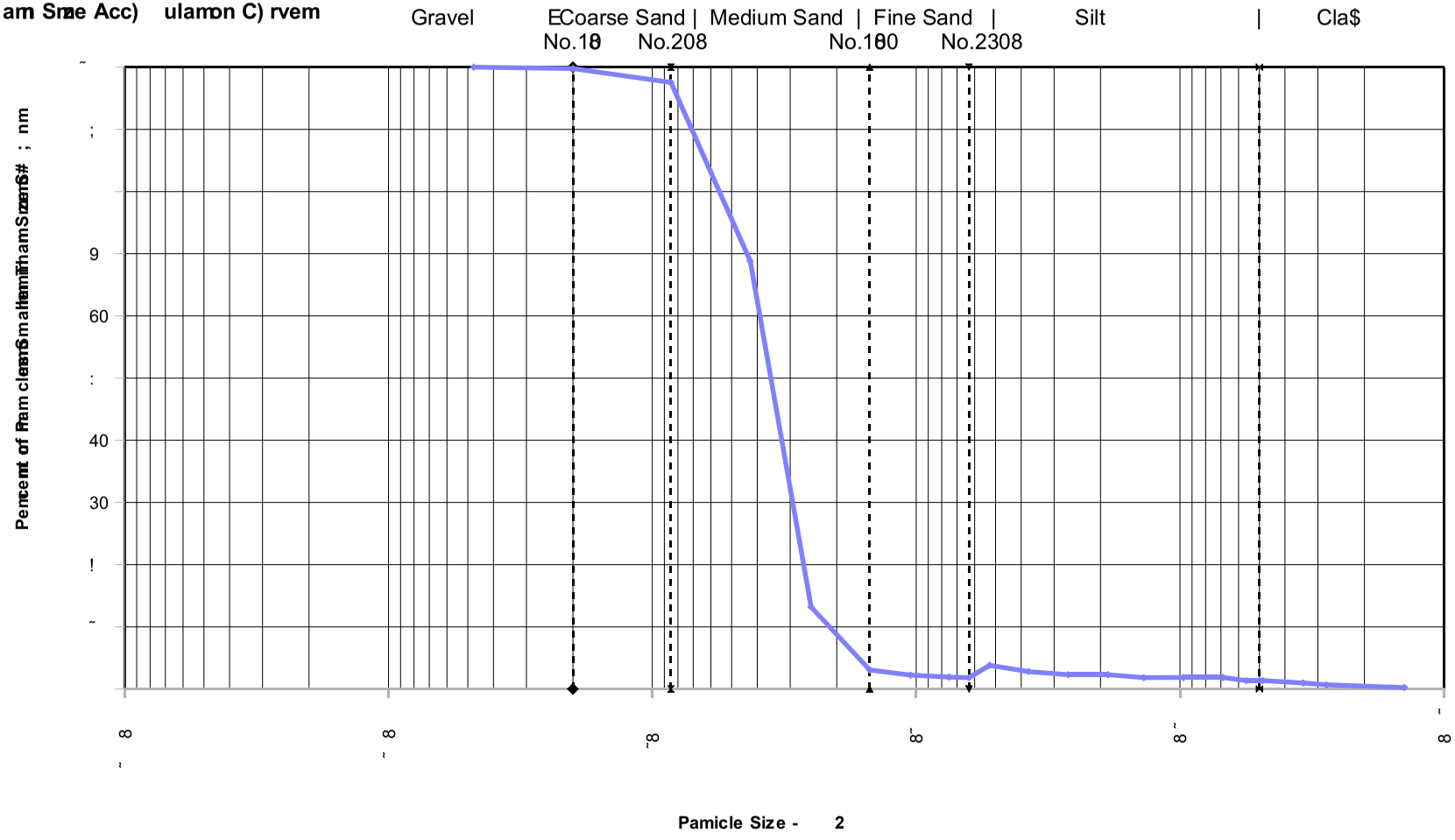
Dispersion device used: Commercial drink mixer operating at least 10,000 rpm for one minute.8

The assumed specific gravity used in the calculations was 2.65. 8

Organic material present in +10 fraction.8



Apex Laboratories, LLC
Particle Size Analysis of Soil by ASTM D 422 Modifiedm



Pamicle Size - 2

Sample ID:m	SG04 (A0J0663-04) m			
Specific Gravm ym	MAXIMUM PARTICLE SIZEm	GRAVEL & SANDm		SOIL DESCRIPTION
		PARTICLE SHAPE	HARDNESSm	
2.658	Gravel8	N/A8	N/A8	SAND with trace Silt and Clay8

Report is complete only if it includes Apex Labs Additional Grain Size Data.

Apex Laboratories, LLC m

Particle Size Analysis of Soil by ASTM D 422m

Sample ID:8	A0J0663-08		Client Sample ID:8	SG058		Batch Number:	˜ 268
ata Entered by8		ate:8	10/30/208	Data Reviewed by8	JW8	ate:8	10/30/208
Sample Description:8	SAND with some Silt and trace Clay8			Max Particle Size:8	Gravel8		
Particle Shape:8	Sub-angular to Sub-rounded8			Hardness8	Hard and Durable8		

Whole Sample 6	e 6	Air Dry + Tare6	Air Dry6	Moisture6	Dry Wt.6
	11.9346	361.4656	349.536	2.426	341.36

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative Wt. 8 Retained 8	% Retained8	% Passing8
48	489:	1.2948	3.3848	!8 ;	!8 ;	.68	99.48
˜	!8	˜8! 68	2.3918	˜8˜˜	3.208	.38	;;8˜
Pan8		11.9348	358.0248	346.098	349.298	;;8	

Hygroscop c Moisture Comecm nm

	0$2°+*˘+pic Correction Factor8	1' en Sample8	Pan No. 8	Tare8	Air Dry + Tare8	1' en Dry + Tare8	Moisture 8
	.97638		J663-08	1.3018	! 8˜:;	19.7138	2.428

Hydrometer Analysism

Start Date/Time8	10/26/! !	10:48	Dispersing Agent8	$NaPO_{38}$
Air Dry Sample Wt. for Hydrometer Test (g)8	˜ 8!;		G, Correction Factor (α)8	˜8
Percent Passing No.10 Sieve 8	;;8˜		Specific Gravit$ (G,4	2.65
°$ Weight of Soil Tested (g)8	97.938		Corrected Dry Weight of Soil Tested (g) (W4	; 8 :

Elapsed Time 8 (min4	Hydrometer 8 Reading8	Temperature 8 3C)8	Corrected 8 Hydrometer 8 Reading [R]8	% Finer of 8 Hydrometer 8 Sample8	=	>	Particle 8 Diameter (mm)8	Percent Passing8
˜	! 8:	19.38	14.348	14.58	˜!89	.013828	.0498	14.378
!	˜ 8:	19.38	12.348	˜!8:	138	.013828	.0358	12.368
48	˜9	19.48	˜8 9	˜˜8	13.38	.01382	8 !:	˜8 ;
	˜:8:	˜;8:	9.48	;8:	13.58	.01365	8 ˜	9.428
˜:	148	19.48	98 9	8	13.8	.013828	.0138	98
308	˜!8:	19.48	6.378	6.48	148	.01382	8 ;	6.38
608	˜˜8:	19.48	5.378	5.48	14.28	.01382	8 9	5.38
;	˜˜	˜;8:	4.98	:8	14.38	.01365	8 :	4.918
˜!	˜	˜;8:	3.98	3.98	14.58	.01365	8 :	3.908
2408	;	˜;8;	3.018	3.08	14.78	.013658	.0038	3.028
3608		! 8:	!8˜;	!8!	14.8	.01348	.0038	!8˜;
14408	9	˜ 8;	89!	89	˜:	.01382	8 ˜	89!

Sieve Analysis of Portion Finer Than No. 10 Sievem

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative 8 Retained 8	% Retained8	% Passing8
!	8 :	˜8!9;	1.861	8:	:8!	.68	; 8:
408	.4258	˜8!;˜	17.5328	16.248	61.248	16.48	!8
60	8!:	1.2648	488 ;:	46.838	!!!8 48	47.48	34.78
˜	8˜:	1.2738	18.3268	˜98 :	281.68	17.38	17.48
140	8˜ :	1.2638	3.1798	˜8;!	! .308	˜8;	˜:8:
!	8 9:	1.3008	!8!99	8;	291.678	˜8	14.58
2308	.0638	˜8! :	˜8 46	8568	293.608	.68	13.98
			Sum	84.168	230 Minus8	13.768	

Apex Laboratories, LLCm
Particle Size Analysis of Soil by ASTM D 422 Modifiedm

Sample ID:mSG05 (A0J0663-08) 8

Grain Size Analysis Summary from Sieving and Hydrometer Testing8	Particle Size 8 (mm)8	Percent 8 Finer8	Total Percent 8 of Sample8
Gravel8			*0.94*
Retained on No. 4 sieve8	4.758	99.398	.618
Gravel, passing No. 4 sieve and retained on No. 10 sieve8	! 8	;;8 68	.328
Sand8			*85.14*
Coarse sand, passing No. 10 sieve and retained on No. 20 sieve8	8 :	; .48	8:;
Medium sand, passing No. 20 sieve and retained on No. 40 sieve8	.42508	!8 :	16.438
Medium sand, passing No. 40 sieve and retained on No. 60 sieve8	8!:	34.678	47.38
Medium sand, passing No. 60 sieve and retained on No. 100 sieve	8˜:	17.428	˜98!:
Fine sand, passing No. 100 sieve and retained on No. 140 sieve	8˜ :	15.48	1.948
Fine sand, passing No. 140 sieve and retained on No. 200 sieve	8 9:	14.49	8;;
Fine sand, passing No. 200 sieve and retained on No. 230 sieve8	.06308	13.92	8:9
Silt and Clay (Measurements in the Clay fraction are noted)8			*13.92*
0$drometer Test8	.04938	14.378	
0$drometer Test8	.03528	12.368	1.568
0$drometer Test	8 !:!	˜ 8 ;	1.478
0$drometer Test	8 ˜99	9.428	1.478
0$drometer Test8	.01338	98	1.538
0$drometer Test8		.06938	˜8:
0$drometer Test8		5.0678	˜
0$drometer Test8	.00548	4.918	.478
0$drometer Test8 Clay 8	.00478	3.98	˜
0$drometer Test8 Clay 8	.00348	3.02	8 ;
0$drometer Test8 Clay	8 !9	!8˜;	8 38
0$drometer Test8 Clay 8	.0014	89!	1.478

Grain Size Sum arym	**Percent of Total Samplem**
Gravel	8;
Sand	:8˜
Coarse sand 8	.68
Medium sand	˜8˜
Fine sand 8	3.58
Silt 8	;8
Clay 8	4.98

Case Narrative for Sample ID:m SG05 (A0J0663-08) m

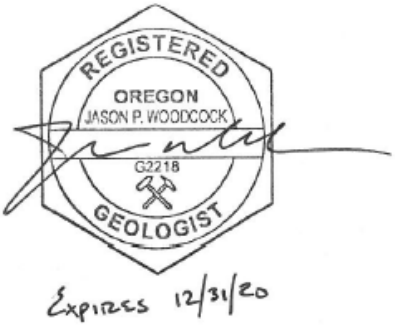
This data is not to be used for engineering purposes.8

No difficulty dispersing the fraction passing the No. 10 sieve. 8

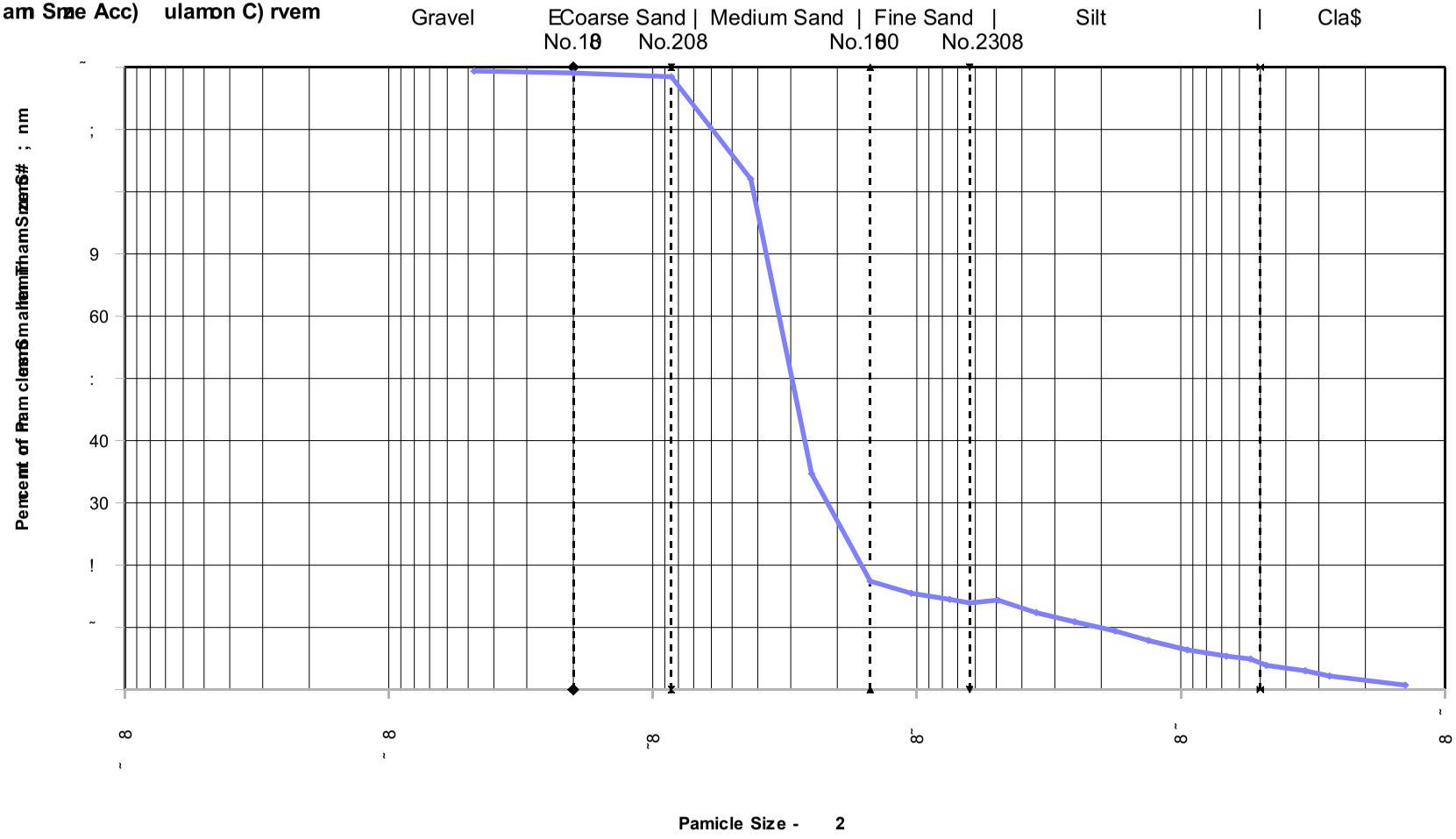
Dispersion device used: Commercial drink mixer operating at least 10,000 rpm for one minute.8

The assumed specific gravity used in the calculations was 2.65. 8

Organic and possible anthropogenic material present in +4 and +10 fractions.8



Apex Laboratories, LLC
Particle Size Analysis of Soil by ASTM D 422 Modifiedm



Sample ID:m	SG05 (A0J0663-08) m			
Specific Gravm ym	MAXIMUM PARTICLE SIZEm	GRAVEL & SANDm		SOIL DESCRIPTION
		PARTICLE SHAPE	HARDNESSm	
2.658	Gravel8	Sub-angula° to Sub-rounde#	Hard and Durable8	SAND with some Silt and trace Clay8

Report is complete only if it includes Apex Labs Additional Grain Size Data.

Apex Laboratories, LLC m

Particle Size Analysis of Soil by ASTM D 422m

Sample ID:8	J0663-128	Client Sample ID:8	SG068	Batch Number:8	1008268
ata Entered by8		ate:8	10/30/208	Data Reviewed by8	JW8	ate:8	10/30/208
Sample Description:8	Silty SAND with some Clay8	Max Particle Size:8	Gravel8		
Particle Shape:8	Sub-angular to Sub-rounded8	Hardness8	Hard and Durable8		

Whole Sample 6	e 6	Air Dry + Tare6	Air Dry6	Moisture6	Dry Wt.6
	11.9896	359.6546	347.676	3.306	336.6

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative Wt. 8 Retained 8	% Retained8	% Passing8
48	489:	˜8!9:	˜ 89˜!	;8448	9.448	!8	;98!
˜	!8	1.2768	3.18:	˜8;˜	11.358	.68	96.68
Pan8		˜˜8; ;	347.8968	335.918	347.258	96.58	

Hygroscop c Moisture Comecm nm

	0$2°+*ˇ+pic Correction Factor8	1' en Sample8	Pan No. 8	Tare8	Air Dry + Tare8	1' en Dry + Tare8	Moisture 8
	.96818		J663-128	˜8!9!	! 8 !!	19.4238	3.308

Hydrometer Analysism

Start Date/Time8	10/26/! ! 11:098	ispersing Agent8	$NaPO_{38}$
Air Dry Sample Wt. for Hydrometer Test (g)8	100.0308	G, Correction Factor (α)8	˜8
Percent Passing No.10 Sieve 8	96.68	Specific Gravit$ (G,4	2.65
°$ Weight of Soil Tested (g)8	96.838	Corrected Dry Weight of Soil Tested (g) (W4	˜ 8!˜

Elapsed Time 8 (min4	Hydrometer 8 Reading8	Temperature 8 3C)8	Corrected 8 Hydrometer 8 Reading [R]8	% Finer of 8 Hydrometer 8 Sample8	=	>	Particle 8 Diameter (mm)8	Percent Passing8
˜	48	19.48	33.89	33.8	9.68	.013828	.0438	32.668
!	338	19.48	26.878	26.8	˜ 89	.013828	.0328	!:8;˜
48	!	19.48	!˜8 9	!˜8	˜˜8:	.013828	.0238	!˜8
	248	19.48	˜98 9	˜98	˜!8!	.01382	8 ˜9	17.238
˜:	!˜	˜;8:	14.98	14.98	˜!89	.013658	.0138	14.368
308	˜ 8:	˜;8:	12.48	12.48	138	.01365	8 ;	˜˜8;:
608	16.58	˜;8:	10.48	10.48	13.38	.013658	.0068	˜ 8 !
;	˜:	˜;8:	8;	8;	13.78	.01365	8 :	8:
˜!	148	19.68	7.938	98;	13.8	.01365	8 :	7.648
2408	138	! 8˜	98 9	98˜	148	.013658	.0038	6.828
3608	˜!	20.68	6.228	6.28	14.28	.01348	.0038	:8;;
14408	˜ 8:	˜;	4.258	4.28	14.38	.01382	8 ˜	4.108

Sieve Analysis of Portion Finer Than No. 10 Sievem

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative 8 Retained 8	% Retained8	% Passing8
!	8 :	˜8! :	3.0	˜8	17.378	˜8	94.8
408	.4258	˜8!;9	8.6968	98408	42.228	7.4	98:
60	8!:	˜8!	9.854	8:9	9 8;;	8:	9 8;
˜	8˜:	˜8! 9	˜!89˜	˜˜8 438	109.378	11.48	67.58
140	8˜ :	˜8!;	13.4908	˜!8 !	150.348	˜!8!	55.38
!	8 9:	˜8! ˜	13.38!	˜!8 ˜	˜; 8;	˜!8˜	43.38
2308	.0638	˜8!	6.8:˜	:8568	209.668	5.68	37.78
			Sum8	59.068	230 Minus8	37.78	

Apex Laboratories, LLCm
Particle Size Analysis of Soil by ASTM D 422 Modifiedm

Sample ID:mSG06 (A0J0663-12) 8

Grain Size Analysis Summary from Sieving and Hydrometer Testing8	Particle Size (mm)8	Percent 8 Finer8	Total Percent of Sample8
Gravel8			*3.37*
Retained on No. 4 sieve8	4.753	;98!	!8
Gravel, passing No. 4 sieve and retained on No. 10 sieve8	! 8	96.63	8:9
Sand8			*58.93*
Coarse sand, passing No. 10 sieve and retained on No. 20 sieve8	8 :	94.843	˜89;
Medium sand, passing No. 20 sieve and retained on No. 40 sieve8	.42503	7.453	7.38
Medium sand, passing No. 40 sieve and retained on No. 60 sieve8	8!:	9 8;˜	8::
Medium sand, passing No. 60 sieve and retained on No. 100 sieve	8˜:	67.53	11.413
Fine sand, passing No. 100 sieve and retained on No. 140 sieve	8˜ :	55.333	˜!8˜9
Fine sand, passing No. 140 sieve and retained on No. 200 sieve	8 9:	43.253	˜!8
Fine sand, passing No. 200 sieve and retained on No. 230 sieve8	.06308	37.73	:8::
Silt and Clay (Measurements in the Clay fraction are noted)8			*37.7*
0$drometer Test8	0.0428	32.663	5.043
0$drometer Test8	.03208	!:8;˜	6.753
0$drometer Test8		.0278348	4.8!
0$drometer Test	8 ˜9˜	17.233	3.863
0$drometer Test8	.01268	14.363	2.863
0$drometer Test	8 ;	˜˜8;:	2.413
0$drometer Test8	.00648	˜ 8 !	1.933
0$drometer Test8	.0053	8:	1.453
0$drometer Test8 Clay	.00463	7.643	.943
0$drometer Test8 Clay	.00338	6.8!	8 !
0$drometer Test8 Clay	8 !9	:8;;	8 !
0$drometer Test8 Clay	.00148	4.13	˜8 ;

Grain Size Sum arym	**Percent of Total Samplem**
Gravel8	3.48
Sand8	: 8;
Coarse sand 8	˜8
Medium sand 8	27.38
Fine sand 8	!;8
Silt 8	!;8˜
Clay	8.68

Case Narrative for Sample ID:m SG06 (A0J0663-12) m

This data is not to be used for engineering purposes.8

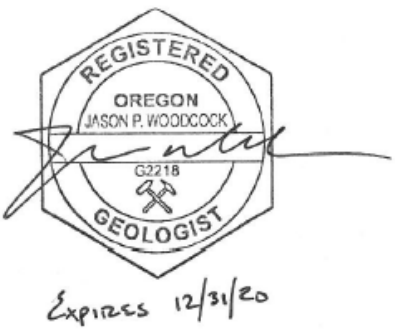
No difficulty dispersing the fraction passing the No. 10 sieve. 8

Dispersion device used: Commercial drink mixer operating at least 10,000 rpm for one minute.8

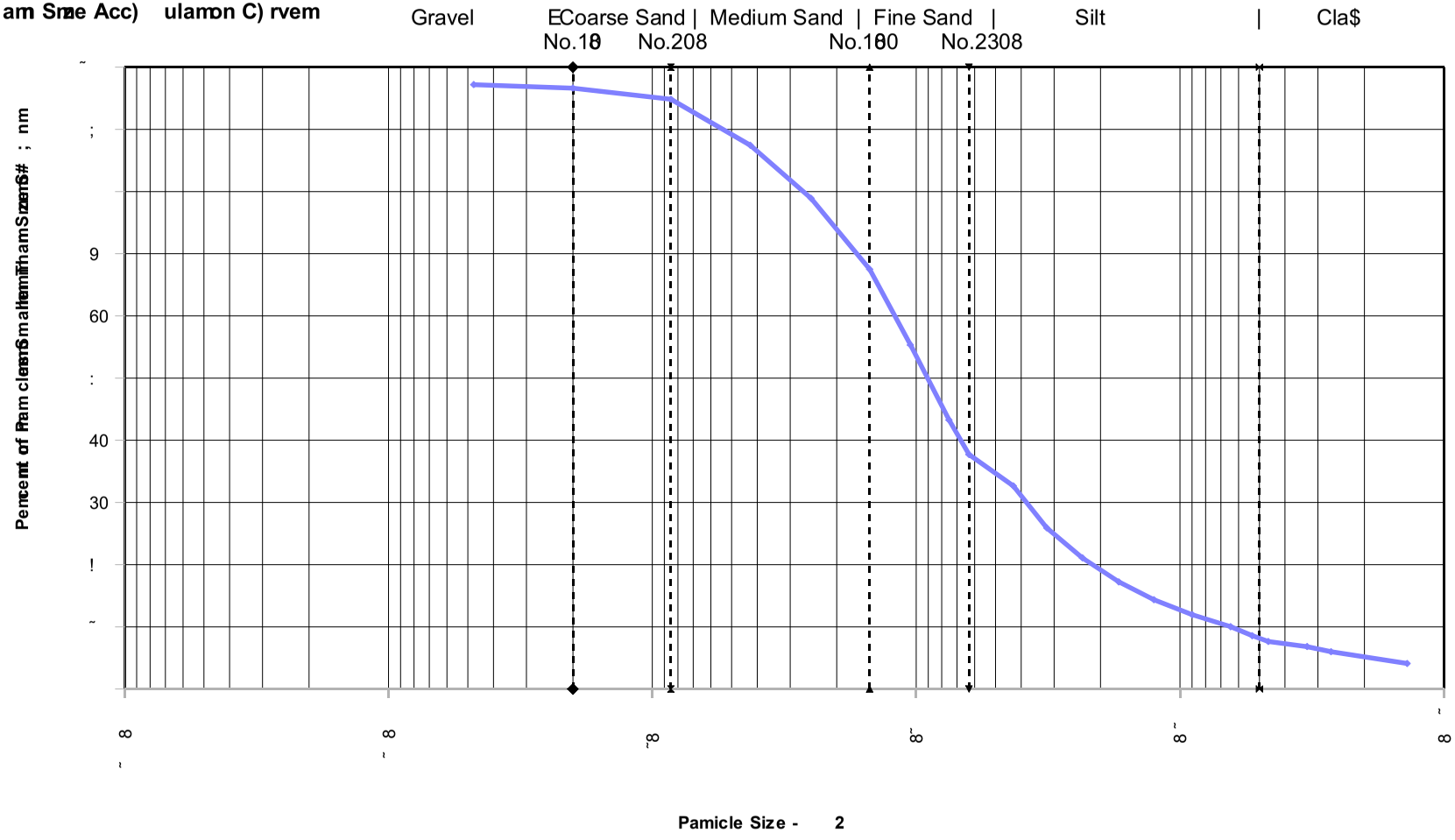
The assumed specific gravity used in the calculations was 2.65. 8

Organic material present in +10 fraction.8

Possible anthropogenic material present in +4 and +10 fractions.8



Apex Laboratories, LLC
Particle Size Analysis of Soil by ASTM D 422 Modifiedm



Pamicle Size - 2

Sample ID:m	SG06 (A0J0663-12) m			
Specific Gravm ym	MAXIMUM PARTICLE SIZEm	GRAVEL & SANDm		SOIL DESCRIPTION
		PARTICLE SHAPE	HARDNESSm	
2.658	Gravel8	Sub-angula° to Sub-rounde#	Hard and Durable8	Silty SAND with some Clay8

Report is complete only if it includes Apex Labs Additional Grain Size Data.

Apex Laboratories, LLC m

Particle Size Analysis of Soil by ASTM D 422m

Sample ID:8	J0663-168	Client Sample ID:8	SG078	Batch Number:8	1008268
ata Entered by8		ate:8	10/30/208	Data Reviewed by8	JW8	ate:8	10/30/208
Sample Description:8	Silty SAND with trace Clay8	Max Particle Size:8	Gravel8		
Particle Shape:8	ngular to Sub-rounded8	Hardness8	Hard and Durable8		

Whole Sample 6	e 6	Air Dry + Tare6	Air Dry6	Moisture6	Dry Wt.6
	12.1276	345.9156	333.796	2.586	325.46

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative Wt. 8 Retained 8	% Retained8	% Passing8
48	489:	1.2948	989!	6.438	6.438	!8	; 8
˜	!8	˜8! ˜	!8 548	˜8:9	8	8:	;98:
Pan8		˜!8˜!9	337.4428	325.328	333.318	97.48	

Hygroscop c Moisture Comecm nm

	0$2°+*ˇ+pic Correction Factor8	1' en Sample8	Pan No. 8	Tare8	Air Dry + Tare8	1' en Dry + Tare8	Moisture 8
	.97498		J663-168	˜8!99	20.3158	19.8378	!8:

Hydrometer Analysism

Start Date/Time8	10/26/! ! 11:318	ispersing Agent8	$NaPO_{38}$
Air Dry Sample Wt. for Hydrometer Test (g)8	100.3328	G, Correction Factor (α)8	˜8
Percent Passing No.10 Sieve 8	;98:	Specific Gravit$ (G,4	2.65
°$ Weight of Soil Tested (g)8	;98 ˜	Corrected Dry Weight of Soil Tested (g) (W4	˜ 8!

Elapsed Time 8 (min4	Hydrometer 8 Reading8	Temperature 8 3C)8	Corrected 8 Hydrometer 8 Reading [R]8	% Finer of 8 Hydrometer 8 Sample8	=	>	Particle 8 Diameter (mm)8	Percent Passing8
˜	3˜	˜;8:	24.98	24.8	˜˜8˜	.013658	.0458	24.228
!	!	˜;8:	!˜8;	!˜8	˜˜8:	.013658	.0338	21.308
48	! :	˜;8:	˜ 8;	˜ 8	˜!	.013658	.0248	18.38
	!!	˜;8:	˜:8;	˜:8;	˜!8:	.01365	8 ˜9	15.468
˜:	˜ 8:	˜;8:	12.48	12.48	138	.013658	.0138	12.068
308	˜:	˜;8:	8;	8;	13.78	.01365	8 ;	8.658
608	˜!8:	19.68	6.438	6.48	148	.01365	8 9	6.258
;	˜˜	19.68	4.938	4.98	14.38	.01365	8 :	4.798
˜!	˜	˜;89	3.958	3.98	14.58	.01365	8 :	3.858
2408	;	20.48	3.168	3.18	14.78	.013658	.0038	3.078
3608		! 89	2.248	!8!	14.8	.01348	.0038	!8˜
14408		˜;8˜	˜89	˜8	14.8	.01382	8 ˜	1.738

Sieve Analysis of Portion Finer Than No. 10 Sievem

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative 8 Retained 8	% Retained8	% Passing8
!	8 :	˜8!;	!8:!;	˜8248	˜!8 !	˜8!	96.38
408	.4258	1.2938	˜98 68	˜:8 9;	63.228	˜:89	.68
60	8!:	˜8!;˜	37.6958	36.408	˜ 1.268	36.38	44.38
˜		8˜: 1.2948	13.618	˜!8 328	!!˜8!!	12.38	32.08
140	8˜ :	˜8!;:	4.8068	3.:˜	232.608	3.58	! 8:
!	8 9:	˜8!	3.6508	!8368	240.268	2.48	26.18
2308	.0638	1.2748	2.4268	˜8˜:	244.008	˜8˜	!:8
			Sum8	9!89;	230 Minus8	25.038	

Apex Laboratories, LLCm
Particle Size Analysis of Soil by ASTM D 422 Modifiedm

Sample ID:mSG07 (A0J0663-16) 8

Grain Size Analysis Summary from Sieving and Hydrometer Testing8	Particle Size (mm)8	Percent 8 Finer8	Total Percent of Sample8
Gravel8			*2.46*
Retained on No. 4 sieve8	4.758	98.038	˜8;9
Gravel, passing No. 4 sieve and retained on No. 10 sieve8	! 8	;9854 8	.48
Sand8			*72.58*
Coarse sand, passing No. 10 sieve and retained on No. 20 sieve8	8 :	96.318	1.248
Medium sand, passing No. 20 sieve and retained on No. 40 sieve8	.42508	.568	˜:89:
Medium sand, passing No. 40 sieve and retained on No. 60 sieve8	8!:	44.258	36.38
Medium sand, passing No. 60 sieve and retained on No. 100 sieve	8˜:	31.968	˜!8!;
Fine sand, passing No. 100 sieve and retained on No. 140 sieve	8˜ :	! .468	3.58
Fine sand, passing No. 140 sieve and retained on No. 200 sieve	8 9:	26.118	2.368
Fine sand, passing No. 200 sieve and retained on No. 230 sieve8	.06308	24.968	˜8˜:
Silt and Clay (Measurements in the Clay fraction are noted)8			*24.96*
0$drometer Test8	.04558	24.228	.748
0$drometer Test8	.03278	21.38	!8;!
0$drometer Test8	.02368	18.38	!8;!
0$drometer Test	8 ˜9˜	15.468	!8;!
0$drometer Test	8 ˜!9	12.068	3.48
0$drometer Test	8 ;!	8.658	3.48
0$drometer Test8	.00668	6.258	2.48
0$drometer Test8	.00548	4.798	1.468
0$drometer Test8 Clay 8	.00478	3.8:	.948
0$drometer Test8 Clay 8	.00348	3.07	89
0$drometer Test8 Clay	8 !9	!8˜	; 8
0$drometer Test8 Clay 8	.00148	1.738	.458

Grain Size Sum arym	**Percent of Total Samplem**
Gravel8	!8:
Sand8	72.68
Coarse sand 8	˜8!
Medium sand 8	64.38
Fine sand 8	98
Silt 8	! 8!
Clay 8	4.8

Case Narrative for Sample ID:m SG07 (A0J0663-16) m

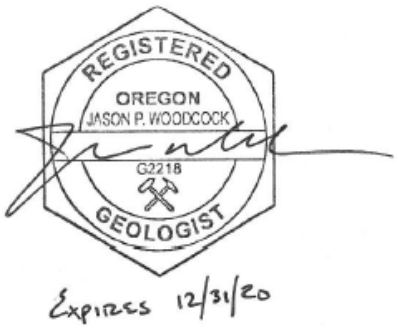
This data is not to be used for engineering purposes.8

No difficulty dispersing the fraction passing the No. 10 sieve. 8

Dispersion device used: Commercial drink mixer operating at least 10,000 rpm for one minute.8

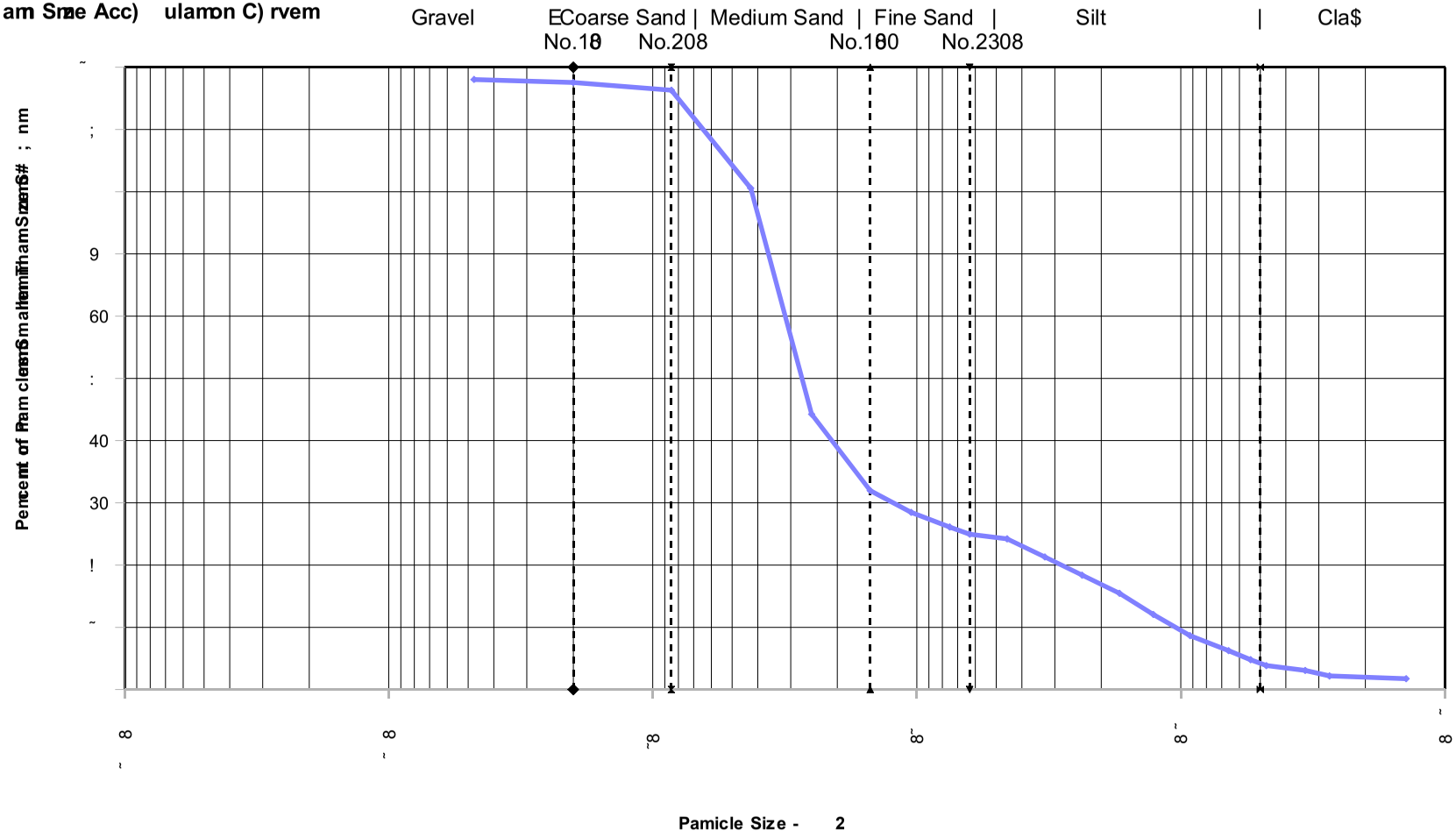
The assumed specific gravity used in the calculations was 2.65. 8

Organic material present in +4 and +10 fractions.8



Report is complete only if it includes Apex Labs Additional Grain Size Data.

Apex Laboratories, LLC
Particle Size Analysis of Soil by ASTM D 422 Modifiedm



Sample ID:m	SG07 (A0J0663-16) m			
Specific Gravm ym	MAXIMUM PARTICLE SIZEm	GRAVEL & SANDm		SOIL DESCRIPTION
		PARTICLE SHAPEm	HARDNESSm	
2.658	Gravel8	n2˝lar to S˝ ‚ -8 °ounde#	Hard and Durable8	Silty SAND with trace Clay8

Apex Laboratories, LLC m

Particle Size Analysis of Soil by ASTM D 422m

Sample ID:8	A0J0663-18		Client Sample ID:8	up-68		Batch Number:	˜ 268
ata Entered by8		ate:8	10/30/208	Data Reviewed by8	JW8	ate:8	10/30/208
Sample Description:8	Silty SAND with trace Gravel and Clay8			Max Particle Size:8	Gravel8		
Particle Shape:8	ngular to Sub-rounded8			Hardness8	Hard and Durable8		

Whole Sample 6	e 6	Air Dry + Tare6	Air Dry6	Moisture6	Dry Wt.6
	12.1206	356.9456	344.836	2.446	336.6

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative Wt. 8 Retained 8	% Retained8	% Passing8
48	489:	˜8!	˜;8999	˜ 8	˜ 8:	:8:	94.58
˜	!8	˜8! :	3.098	˜8 ˜	20.31	8:	94.08
Pan8		˜!8˜!˜	336.0538	323.938	344.248	93.98	

Hygroscop c Moisture Conecm nm

	0$2°+*˘+pic Correction Factor8	1' en Sample8	Pan No. 8	Tare8	Air Dry + Tare8	1' en Dry + Tare8	Moisture 8
	.97618		J663-18	˜8!;!	20.0328	˜;8: :	2.448

Hydrometer Analysism

Start Date/Time8	10/26/! !	11:538	ispersing Agent8	$NaPO_{38}$
Air Dry Sample Wt. for Hydrometer Test (g)8	˜ 8 68		G, Correction Factor (α)8	˜8
Percent Passing No.10 Sieve 8	94.08		Specific Gravit$ (G,4	2.65
°$ Weight of Soil Tested (g)8	;989		Corrected Dry Weight of Soil Tested (g) (W4	103.978

Elapsed Time 8 (min4	Hydrometer 8 Reading8	Temperature 8 3C)8	Corrected 8 Hydrometer 8 Reading [R]8	% Finer of 8 Hydrometer 8 Sample8	=	>	Particle 8 Diameter (mm)8	Percent Passing8
˜	31.58	˜;8:	25.48	24.48	˜ 8;	.013658	.0458	!!8;:
!	! 8:	˜;8:	22.48	!˜8:	11.48	.013658	.0338	20.248
48	!:8:	˜;8:	19.48	˜ 89	˜˜8;	.013658	.0248	17.538
	!!8:	˜;8:	16.48	˜:8	12.48	.01365	8 ˜9	14.828
˜:	˜;	19.68	12.938	12.48	138	.013658	.0138	11.68
308	˜:8:	19.68	9.438	;8˜	13.58	.01365	8 ;	8:!
608	138	19.68	6.938	6.78	148	.01365	8 9	6.268
;	˜˜8:	19.68	5.438	:8!	14.28	.01365	8 :	4.908
˜!	˜ 8:	˜;89	4.458	4.38	14.38	.01365	8 :	4.038
2408	;8:	20.48	3.668	3.58	14.58	.013658	.0038	3.318
3608	8:	! 89	2.748	2.68	14.78	.01348	.0038	2.48
14408		˜;8˜	˜89	˜89	14.8	.01382	8 ˜	1.618

Sieve Analysis of Portion Finer Than No. 10 Sievem

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative 8 Retained 8	% Retained8	% Passing8
!	8 :	˜8!;˜	2.4448	˜8˜:	24.048	˜8˜	;!8;
408	.4258	˜8!	16.9268	˜:8 648	74.658	˜:8	998
60	8!:	1.2698	37.3908	36.˜!	191.568	34.78	43.18
˜	8˜:	˜8! ;	13.0148	˜˜8 738	!!;8:˜	11.38	31.8
140	8˜ :	˜8!9;	4.7958	3.:!	240.8;	3.48	! .48
!	8 9:	˜8! 68	3.6708	!838	248.618	2.38	26.18
2308	.0638	˜8!;9	2.5138	˜8!!	252.548	˜8!	!:8
		Sum8	9˜89:	230 Minus8	!:8;:		

Apex Laboratories, LLCm
Particle Size Analysis of Soil by ASTM D 422 Modifiedm

Sample ID:m up-6 (A0J0663-18) 8

Grain Size Analysis Summary from Sieving and Hydrometer Testing8	Particle Size 8 (mm)8	Percent 8 Finer8	Total Percent 8 of Sample8
Gravel8			*6.03*
Retained on No. 4 sieve8	4.758	94.58	:8:
Gravel, passing No. 4 sieve and retained on No. 10 sieve8	! 8	93.;9	.548
Sand8			*69.01*
Coarse sand, passing No. 10 sieve and retained on No. 20 sieve8	8 :	;!8 68	˜8˜˜
Medium sand, passing No. 20 sieve and retained on No. 40 sieve8	.42508	998 !	15.048
Medium sand, passing No. 40 sieve and retained on No. 60 sieve8	8!:	43.08	34.748
Medium sand, passing No. 60 sieve and retained on No. 100 sieve	8˜:	31.8	˜˜8!
Fine sand, passing No. 100 sieve and retained on No. 140 sieve	8˜ :	! .428	3.38
Fine sand, passing No. 140 sieve and retained on No. 200 sieve	8 9:	26.128	!8!;
Fine sand, passing No. 200 sieve and retained on No. 230 sieve8	.06308	24.958	˜8˜9
Silt and Clay (Measurements in the Clay fraction are noted)8			*24.95*
0$drometer Test8	.04518	!!8;:	!
0$drometer Test8	.03268	20.248	!89˜
0$drometer Test8	.02358	17.538	!89˜
0$drometer Test	8 ˜9	14.828	!89˜
0$drometer Test	8 ˜!9	11.68	3.148
0$drometer Test	8 ;!	8:!	3.168
0$drometer Test8	.00668	6.268	2.268
0$drometer Test8	.00548	4.98	1.368
0$drometer Test8 Clay 8	.00478	4.03	8
0$drometer Test8 Clay 8	.00348	3.31	89!
0$drometer Test8 Clay	8 !9	2.48	38 8
0$drometer Test8 Clay 8	.00148	1.61	8 9

Grain Size Sum arym	**Percent of Total Samplem**
Gravel8	6.08
Sand8	69.08
Coarse sand 8	˜8˜
Medium sand 8	61.18
Fine sand 8	6.8
Silt 8	! 8˜
Clay 8	4.98

Case Narrative for Sample ID:m Dup-6 (A0J0663-18) m

This data is not to be used for engineering purposes.8

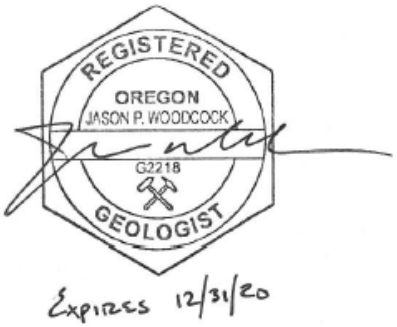
No difficulty dispersing the fraction passing the No. 10 sieve. 8

Dispersion device used: Commercial drink mixer operating at least 10,000 rpm for one minute.8

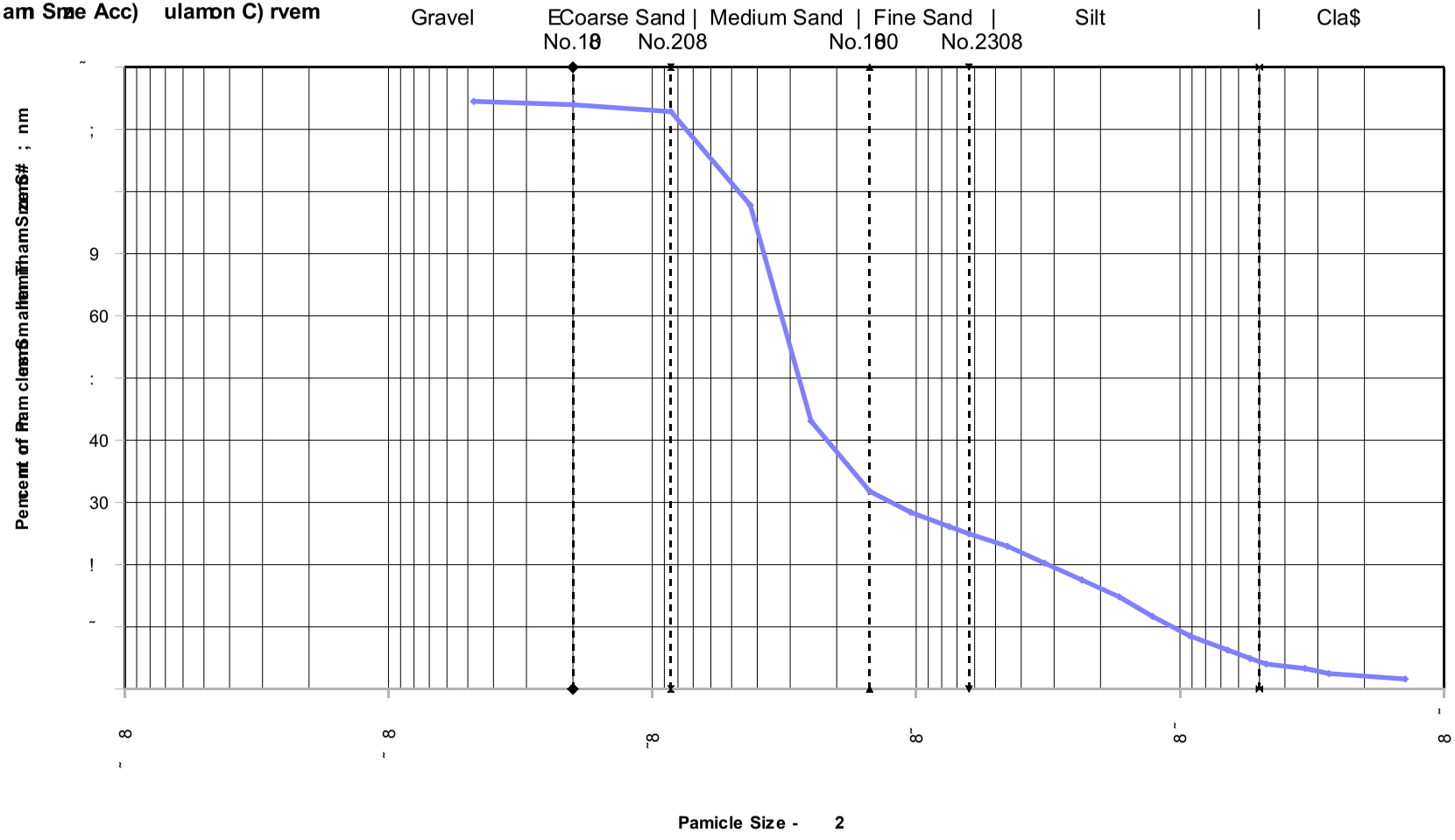
The assumed specific gravity used in the calculations was 2.65. 8

Organic material present in +4 and +10 fractions.8

Possible anthropogenic material present in +10 fraction.8



Apex Laboratories, LLC
Particle Size Analysis of Soil by ASTM D 422 Modifiedm



Sample ID:m	Dup-6 (A0J0663-18) m			
Specific Gravm ym	MAXIMUM PARTICLE SIZEm	GRAVEL & SANDm		SOIL DESCRIPTION
		PARTICLE SHAPEm	HARDNESSm	
2.658	Gravel8	n2˝lar to S˝ ‚ -8 °ounde#	Hard and Durable8	Silty SAND with trace Gravel and Clay8

Report is complete only if it includes Apex Labs Additional Grain Size Data.

Apex Laboratories, LLC m

Particle Size Analysis of Soil by ASTM D 422m

Sample ID:8	J0663-198	Client Sample ID:8	T4RB-18L-OM8	Batch Number:	˜ 268
ata Entered by8	ate:8 10/30/208	Data Reviewed by8	JW8	ate:8	10/30/208
Sample Description:8	Clayey Silty SAND8	Max Particle Size:8	Gravel8		
Particle Shape:8	Sub-angular to Sub-rounded8	Hardness8	Hard and Durable8		

Whole Sample 6	e 6	Air Dry + Tare6	Air Dry6	Moisture6	Dry Wt.6
	12.2786	320.9286	308.656	3.616	297.96

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative Wt. 8 Retained 8	% Retained8	% Passing8
48	489:	˜8! 48	10.48˜	;8!	;8!	3.18	96.98
˜	!8	1.2768	2.053	89	;8;9	.38	96.78
Pan8		˜!8!9	310.7028	!; .428	308.408	96.68	

Hygroscop c Moisture Conecm nm

	0$2°+*ˇ+pic Correction Factor8	1' en Sample8	Pan No. 8	Tare8	Air Dry + Tare8	1' en Dry + Tare8	Moisture 8
	.96528		J663-198	1.3028	20.3228	19.6608	3.618

Hydrometer Analysism

Start Date/Time8	10/26/! !	12:168	ispersing Agent8	$NaPO_{38}$
Air Dry Sample Wt. for Hydrometer Test (g)8	˜ 8 ˜		G, Correction Factor (α)8	˜8
Percent Passing No.10 Sieve 8	96.78		Specific Gravit$ (G,4	2.65
°$ Weight of Soil Tested (g)8	96.608		Corrected Dry Weight of Soil Tested (g) (W4	99.948

Elapsed Time 8 (min4	Hydrometer 8 Reading8	Temperature 8 3C)8	Corrected 8 Hydrometer 8 Reading [R]8	% Finer of 8 Hydrometer 8 Sample8	=	>	Particle 8 Diameter (mm)8	Percent Passing8
˜	48	˜;89	34.368	34.48	9.68	.013658	.0428	33.228
!	368	˜;89	30.368	30.48	˜ 8!	.013658	.0318	29.368
48	33.58	˜;89	27.868	!98;	˜ 8:	.01365	8 !!	26.948
	318	˜;89	25.368	25.48	˜˜8˜	.013658	.0168	24.528
˜:	! 8:	˜;89	22.868	!!8;	11.48	.01365	8 ˜!	!!8˜
308	268	˜;89	20.368	20.48	˜˜8;	.01365	8 ;	19.698
608	23.58	˜;89	17.868	˜98;	˜!8!	.013658	.0068	˜98!9
;	!˜8:	˜;89	15.868	˜:8;	˜!8:	.01365	8 :	15.338
˜!	˜;8:	˜;8	13.89	13.98	˜!8;	.013658	.0048	13.428
2408	˜98:	20.48	˜˜8;	˜!8	13.28	.013658	.0038	˜˜8:;
3608	˜:8:	! 89	10.048	˜ 8	13.58	.01348	.0038	;89˜
14408	138	19.38	98!	7.38	148	.01382	8 ˜	7.048

Sieve Analysis of Portion Finer Than No. 10 Sievem

Sieve Number8	Opening (mm)8	Tare	°$ + Tare8	Weight 8 Retained8	Cumulative 8 Retained 8	% Retained8	% Passing8
!	8 :	˜8!	2.066	89	˜!8!;	8	;:8;
408	.4258	˜8!;˜	6.8308	:8548	! 8 ˜	:8:	90.38
60	8!:	1.2938	˜ .1308	16.848	9;8 !	16.8	73.58
˜	8˜:	˜8!	14.3048	13. !	117.838	13.08	60.58
140	8˜ :	˜8! :	10.4538	;8˜9	145.168	;8!	51.38
!	8 9:	1.2938	;8˜	98 !	168.478	98	43.58
2308	.0638	˜8!;	4.5978	3.318	˜9 .338	3.38	40.28
		Sum8	56.468	230 Minus8	40.148		

Apex Laboratories, LLCm
Particle Size Analysis of Soil by ASTM D 422 Modifiedm

Sample ID:mT4RB-18L-OM (A0J0663-19) 8

Grain Size Analysis Summary from Sieving and Hydrometer Testing8	Particle Size 8 (mm)8	Percent 8 Finer8	Total Percent 8 of Sample8
Gravel8			*3.35*
Retained on No. 4 sieve8	4.758	96.918	3.098
Gravel, passing No. 4 sieve and retained on No. 10 sieve8	! 8	96.658	.268
Sand8			*56.49*
Coarse sand, passing No. 10 sieve and retained on No. 20 sieve8	8 :	;:8 9	89
Medium sand, passing No. 20 sieve and retained on No. 40 sieve8	.42508	90.338	5.548
Medium sand, passing No. 40 sieve and retained on No. 60 sieve8	8!:	73.48	16.8:
Medium sand, passing No. 60 sieve and retained on No. 100 sieve	8˜:	60.468	13.028
Fine sand, passing No. 100 sieve and retained on No. 140 sieve	8˜ :	:˜8!;	;8˜9
Fine sand, passing No. 140 sieve and retained on No. 200 sieve	8 9:	43.478	98 !
Fine sand, passing No. 200 sieve and retained on No. 230 sieve8	.06308	40.168	3.318
Silt and Clay (Measurements in the Clay fraction are noted)8			*40.16*
0$drometer Test8	.04238	33.228	6.948
0$drometer Test8	0.0308	29.368	3.89
0$drometer Test	8 !!˜	26.948	2.428
0$drometer Test8	.01618	24.528	2.428
0$drometer Test	8 ˜˜;	!!8˜	2.428
0$drometer Test8	.00868	19.698	2.428
0$drometer Test8	.00628	˜98!9	2.428
0$drometer Test	8 :˜	15.338	1.938
0$drometer Test8 Clay 8	.00458	13.428	˜8;!
0$drometer Test8 Clay 8	.00328	˜˜8:;	˜8 38
0$drometer Test8 Clay 8	.00268	;89˜	˜8
0$drometer Test8 Clay 8	.00148	7.048	2.668

Grain Size Sum arym	**Percent of Total Samplem**
Gravel8	3.38
Sand8	56.58
Coarse sand	8
Medium sand 8	35.48
Fine sand 8	20.38
Silt 8	24.8
Clay 8	15.38

Case Narrative for Sample ID:m T4RB-18L-OM (A0J0663-19) m

This data is not to be used for engineering purposes.8

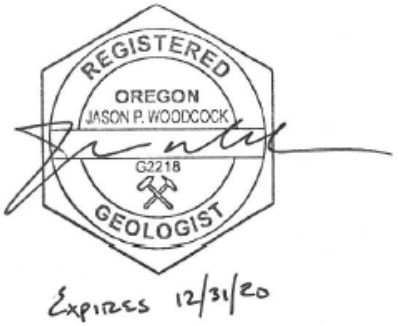
No difficulty dispersing the fraction passing the No. 10 sieve. 8

Dispersion device used: Commercial drink mixer operating at least 10,000 rpm for one minute.8

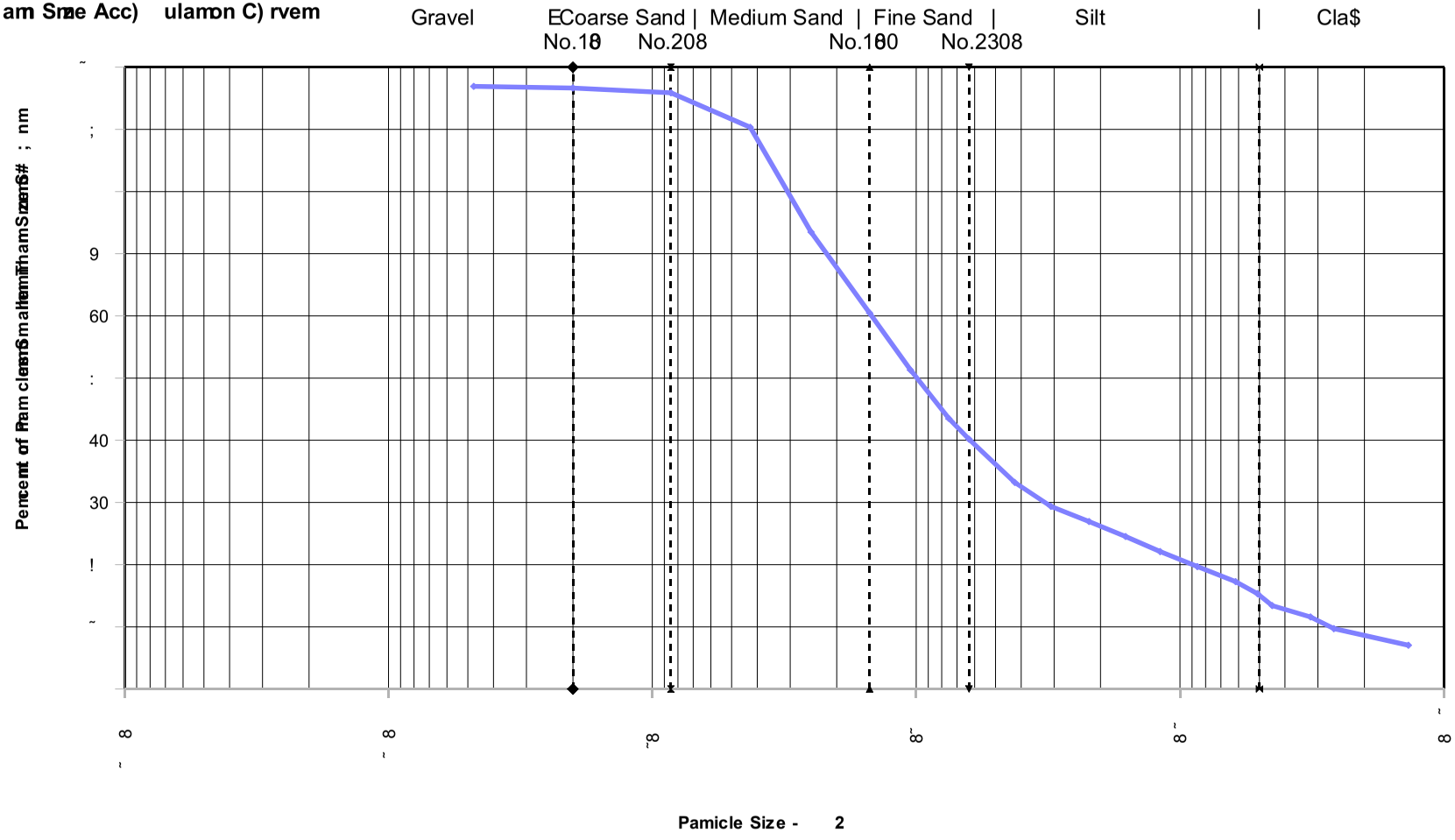
The assumed specific gravity used in the calculations was 2.65. 8

Possible anthropogenic material present in +10 fraction.8

+4 fraction consists entirely of possible anthropogenic material. 8



Apex Laboratories, LLC
Particle Size Analysis of Soil by ASTM D 422 Modifiedm



Pamicle Size - 2

Sample ID:m	T4RB-18L-OM (A0J0663-19)			
Specific Gravm ym	MAXIMUM PARTICLE SIZEm	GRAVEL & SANDm		SOIL DESCRIPTION
		PARTICLE SHAPE	HARDNESSm	
2.658	Gravel8	Sub-angula° to Sub-rounde#	Hard and Durable8	Clayey Silty SAND8

Report is complete only if it includes Apex Labs Additional Grain Size Data.

Your Project #: A0J0663
Your C.O.C. #: n/a

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2020/12/02
Report #: R6433716
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C0R8571
Received: 2020/10/22, 13:16

Sample Matrix: Sediment
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	4	2020/11/09	2020/11/15	BRL SOP-00410	EPA 1613B m
Moisture	6	N/A	2020/10/23	CAM SOP-00445	Carter 2nd ed 51.2 m
PCB Congeners in Soil (1668C) (2)	6	2020/11/24	2020/11/25	BRL SOP-00408	EPA 1668C m

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Water (1613B) (3)	1	2020/10/27	2020/11/06	BRL SOP-00410	EPA 1613B m
PCB Congeners in Water (1668C)	1	2020/10/28	2020/11/20	BRL SOP-00408	EPA 1668C m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(2) Soils are reported on a dry weight basis unless otherwise specified.
(3) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bvlabs.com
Phone# (905) 817-5700
==========

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BV Labs Job #: C0R8571
Report Date: 2020/12/02

Apex Laboratories
Client Project #: A0J0663

RESULTS OF ANALYSES OF SEDIMENT

BV Labs ID		NYQ501	NYQ502	NYQ503	NYQ504	NYQ506	NYQ507			
Sampling Date		2020/10/15 14:00	2020/10/15 16:55	2020/10/15 12:20	2020/10/15 14:45	2020/10/16 00:00	2020/10/16 15:50			
COC Number		n/a	n/a	n/a	n/a	n/a	n/a			
	UNITS	**SG04**	**SG05**	**SG06**	**SG07**	**DUP-6**	**T4RB-18L-OM**	**RDL**	**MDL**	**QC Batch**
Moisture	%	23	27	33	27	29	32	1.0	0.50	7017887

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.117 U	0.117	0.996	0.400	1.00	0.117	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.204 J	0.105	4.98	0.400	1.00	0.204	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.228 U (1)	0.228	4.98	0.400	0.100	0.0228	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	1.80 J	0.113	4.98	0.400	0.100	0.180	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.751 J	0.119	4.98	0.400	0.100	0.0751	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	59.0	0.441	4.98	0.400	0.0100	0.590	N/A	7055856
Octa CDD *	pg/g	560	0.185	9.96	0.800	0.000300	0.168	N/A	7055856
Total Tetra CDD *	pg/g	0.117 U	0.117	0.996	0.400	N/A	N/A	0	7055856
Total Penta CDD *	pg/g	0.204 J	0.105	4.98	0.400	N/A	N/A	1	7055856
Total Hexa CDD *	pg/g	8.92	0.117	4.98	0.400	N/A	N/A	5	7055856
Total Hepta CDD *	pg/g	125	0.441	4.98	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.114 U	0.114	0.996	0.400	0.100	0.0114	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.107 U	0.107	4.98	0.400	0.0300	0.00321	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	0.222 J	0.0981	4.98	0.400	0.300	0.0666	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	1.19 J	0.114	4.98	0.400	0.100	0.119	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	0.278 J	0.117	4.98	0.400	0.100	0.0278	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.187 J	0.111	4.98	0.400	0.100	0.0187	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.118 U	0.118	4.98	0.400	0.100	0.0118	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	4.59 J	0.105	4.98	0.400	0.0100	0.0459	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.462 J	0.102	4.98	0.400	0.0100	0.00462	N/A	7055856
Octa CDF **	pg/g	10.1 U (2)	10.1	9.96	0.800	0.000300	0.00303	N/A	7055856
Total Tetra CDF **	pg/g	0.114 U	0.114	0.996	0.400	N/A	N/A	0	7055856
Total Penta CDF **	pg/g	2.60 J	0.103	4.98	0.400	N/A	N/A	4	7055856
Total Hexa CDF **	pg/g	9.09	0.115	4.98	0.400	N/A	N/A	6	7055856
Total Hepta CDF **	pg/g	15.1	0.104	4.98	0.400	N/A	N/A	3	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	1.67	N/A	N/A

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

(2) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDD *	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.115 U	0.115	0.998	0.400	1.00	0.115	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.229 J	0.115	4.99	0.400	1.00	0.229	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.225 U (1)	0.225	4.99	0.400	0.100	0.0225	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	1.67 J	0.104	4.99	0.400	0.100	0.167	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.745 J	0.110	4.99	0.400	0.100	0.0745	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	78.6	0.101	4.99	0.400	0.0100	0.786	N/A	7055856
Octa CDD *	pg/g	691	0.300	9.98	0.800	0.000300	0.207	N/A	7055856
Total Tetra CDD *	pg/g	0.187 J	0.115	0.998	0.400	N/A	N/A	1	7055856
Total Penta CDD *	pg/g	0.736 J	0.115	4.99	0.400	N/A	N/A	3	7055856
Total Hexa CDD *	pg/g	14.5	0.108	4.99	0.400	N/A	N/A	6	7055856
Total Hepta CDD *	pg/g	196	0.101	4.99	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.232 J	0.108	0.998	0.400	0.100	0.0232	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.221 J	0.123	4.99	0.400	0.0300	0.00663	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	0.349 J	0.113	4.99	0.400	0.300	0.105	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	2.23 J	0.113	4.99	0.400	0.100	0.223	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	0.462 J	0.116	4.99	0.400	0.100	0.0462	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.222 J	0.110	4.99	0.400	0.100	0.0222	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.117 U	0.117	4.99	0.400	0.100	0.0117	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	9.60	0.111	4.99	0.400	0.0100	0.0960	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.894 J	0.107	4.99	0.400	0.0100	0.00894	N/A	7055856
Octa CDF **	pg/g	39.1	0.221	9.98	0.800	0.000300	0.0117	N/A	7055856
Total Tetra CDF **	pg/g	0.749 J	0.108	0.998	0.400	N/A	N/A	3	7055856
Total Penta CDF **	pg/g	3.96 J	0.118	4.99	0.400	N/A	N/A	5	7055856
Total Hexa CDF **	pg/g	16.8	0.114	4.99	0.400	N/A	N/A	7	7055856
Total Hepta CDF **	pg/g	38.5	0.109	4.99	0.400	N/A	N/A	3	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	2.16	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	125	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	131 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	126	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,

The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

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QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Recovery exceeds method criteria due to matrix effects

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DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.112 U	0.112	0.996	0.400	1.00	0.112	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.298 J	0.102	4.98	0.400	1.00	0.298	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.241 U (1)	0.241	4.98	0.400	0.100	0.0241	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	1.63 J	0.110	4.98	0.400	0.100	0.163	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.840 U (1)	0.840	4.98	0.400	0.100	0.0840	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	76.7	0.105	4.98	0.400	0.0100	0.767	N/A	7055856
Octa CDD *	pg/g	613	0.225	9.96	0.800	0.000300	0.184	N/A	7055856
Total Tetra CDD *	pg/g	0.136 U (1)	0.136	0.996	0.400	N/A	N/A	0	7055856
Total Penta CDD *	pg/g	0.298 J	0.102	4.98	0.400	N/A	N/A	1	7055856
Total Hexa CDD *	pg/g	14.2	0.113	4.98	0.400	N/A	N/A	3	7055856
Total Hepta CDD *	pg/g	206	0.105	4.98	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.280 J	0.112	0.996	0.400	0.100	0.0280	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.231 J	0.118	4.98	0.400	0.0300	0.00693	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	0.394 J	0.108	4.98	0.400	0.300	0.118	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	2.56 J	0.0999	4.98	0.400	0.100	0.256	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	0.503 J	0.102	4.98	0.400	0.100	0.0503	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.253 U (1)	0.253	4.98	0.400	0.100	0.0253	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.103 U	0.103	4.98	0.400	0.100	0.0103	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	8.05	0.118	4.98	0.400	0.0100	0.0805	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	0.882 J	0.114	4.98	0.400	0.0100	0.00882	N/A	7055856
Octa CDF **	pg/g	23.1	0.222	9.96	0.800	0.000300	0.00693	N/A	7055856
Total Tetra CDF **	pg/g	0.614 J	0.112	0.996	0.400	N/A	N/A	2	7055856
Total Penta CDF **	pg/g	5.04	0.112	4.98	0.400	N/A	N/A	6	7055856
Total Hexa CDF **	pg/g	17.1	0.101	4.98	0.400	N/A	N/A	6	7055856
Total Hepta CDF **	pg/g	30.2	0.116	4.98	0.400	N/A	N/A	3	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	2.22	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

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QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7055856

EDL = Estimated Detection Limit

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	0.114 U	0.114	0.999	0.400	1.00	0.114	N/A	7055856
1,2,3,7,8-Penta CDD *	pg/g	0.115 U	0.115	4.99	0.400	1.00	0.115	N/A	7055856
1,2,3,4,7,8-Hexa CDD *	pg/g	0.106 U	0.106	4.99	0.400	0.100	0.0106	N/A	7055856
1,2,3,6,7,8-Hexa CDD *	pg/g	1.37 J	0.106	4.99	0.400	0.100	0.137	N/A	7055856
1,2,3,7,8,9-Hexa CDD *	pg/g	0.305 J	0.113	4.99	0.400	0.100	0.0305	N/A	7055856
1,2,3,4,6,7,8-Hepta CDD *	pg/g	34.4	0.103	4.99	0.400	0.0100	0.344	N/A	7055856
Octa CDD *	pg/g	318	0.171	9.99	0.800	0.000300	0.0954	N/A	7055856
Total Tetra CDD *	pg/g	0.175 J	0.114	0.999	0.400	N/A	N/A	1	7055856
Total Penta CDD *	pg/g	0.115 U	0.115	4.99	0.400	N/A	N/A	0	7055856
Total Hexa CDD *	pg/g	6.72	0.110	4.99	0.400	N/A	N/A	5	7055856
Total Hepta CDD *	pg/g	73.7	0.103	4.99	0.400	N/A	N/A	2	7055856
2,3,7,8-Tetra CDF **	pg/g	0.243 J	0.114	0.999	0.400	0.100	0.0243	N/A	7055856
1,2,3,7,8-Penta CDF **	pg/g	0.597 U (1)	0.597	4.99	0.400	0.0300	0.0179	N/A	7055856
2,3,4,7,8-Penta CDF **	pg/g	3.19 J	0.108	4.99	0.400	0.300	0.957	N/A	7055856
1,2,3,4,7,8-Hexa CDF **	pg/g	13.3	0.109	4.99	0.400	0.100	1.33	N/A	7055856
1,2,3,6,7,8-Hexa CDF **	pg/g	1.79 J	0.112	4.99	0.400	0.100	0.179	N/A	7055856
2,3,4,6,7,8-Hexa CDF **	pg/g	0.710 J	0.105	4.99	0.400	0.100	0.0710	N/A	7055856
1,2,3,7,8,9-Hexa CDF **	pg/g	0.113 U	0.113	4.99	0.400	0.100	0.0113	N/A	7055856
1,2,3,4,6,7,8-Hepta CDF **	pg/g	13.0	0.121	4.99	0.400	0.0100	0.130	N/A	7055856
1,2,3,4,7,8,9-Hepta CDF **	pg/g	2.10 J	0.117	4.99	0.400	0.0100	0.0210	N/A	7055856
Octa CDF **	pg/g	15.3	0.172	9.99	0.800	0.000300	0.00459	N/A	7055856
Total Tetra CDF **	pg/g	0.882 J	0.114	0.999	0.400	N/A	N/A	4	7055856
Total Penta CDF **	pg/g	24.4	0.113	4.99	0.400	N/A	N/A	8	7055856
Total Hexa CDF **	pg/g	60.1	0.109	4.99	0.400	N/A	N/A	9	7055856
Total Hepta CDF **	pg/g	50.1	0.119	4.99	0.400	N/A	N/A	3	7055856
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	3.59	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7055856

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QC Batch = Quality Control Batch

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N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234678 HeptaCDF **	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDD *	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123478 HexaCDF **	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-1234789 HeptaCDF **	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDD *	%	131 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123678 HexaCDF **	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-12378 PentaCDF **	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-123789 HexaCDF **	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-234678 HexaCDF **	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-23478 PentaCDF **	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-2378 TetraCDF **	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7055856
C13-OCDD *	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7055856

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* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Recovery exceeds method criteria due to matrix effects

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00023 U (1)	0.00023	0.0020	0.0026	N/A	N/A	N/A	7074061
3-MonoCB-(2)	ng/g	0.000391 J	0.000070	0.0020	0.0038	N/A	N/A	N/A	7074061
4-MonoCB-(3)	ng/g	0.000376 J	0.000077	0.0050	0.0035	N/A	N/A	N/A	7074061
22'-DiCB-(4)	ng/g	0.00035 U	0.00035	0.0050	0.0040	N/A	N/A	N/A	7074061
2,3-DiCB-(5)	ng/g	0.00015 U	0.00015	0.0050	0.015	N/A	N/A	N/A	7074061
2,3'-DiCB-(6)	ng/g	0.00014 U	0.00014	0.0020	0.0034	N/A	N/A	N/A	7074061
2,4-DiCB-(7)	ng/g	0.00013 U	0.00013	0.0020	0.0064	N/A	N/A	N/A	7074061
2,4'-DiCB-(8)	ng/g	0.00053 J	0.00014	0.0050	0.016	N/A	N/A	N/A	7074061
2,5-DiCB-(9)	ng/g	0.00016 U	0.00016	0.0020	0.0019	N/A	N/A	N/A	7074061
2,6-DiCB-(10)	ng/g	0.00053 U	0.00053	0.0050	0.0042	N/A	N/A	N/A	7074061
3,3'-DiCB-(11)	ng/g	0.00136 J	0.00015	0.010	0.034	N/A	N/A	N/A	7074061
DiCB-(12)+(13)	ng/g	0.00015 U	0.00015	0.0050	0.011	N/A	N/A	N/A	7074061
3,5-DiCB-(14)	ng/g	0.00014 U	0.00014	0.0020	0.0033	N/A	N/A	N/A	7074061
4,4'-DiCB-(15)	ng/g	0.00080 U (1)	0.00080	0.0050	0.0039	N/A	N/A	N/A	7074061
22'3-TriCB-(16)	ng/g	0.00055 J	0.00026	0.0050	0.013	N/A	N/A	N/A	7074061
22'4-TriCB-(17)	ng/g	0.00048 J	0.00016	0.0020	0.0040	N/A	N/A	N/A	7074061
TriCB-(18)+(30)	ng/g	0.00088 J	0.00013	0.0050	0.0052	N/A	N/A	N/A	7074061
22'6-TriCB-(19)	ng/g	0.00045 J	0.00010	0.0020	0.0052	N/A	N/A	N/A	7074061
TriCB-(20) + (28)	ng/g	0.00289 J	0.00012	0.0050	0.0090	N/A	N/A	N/A	7074061
TriCB-(21)+(33)	ng/g	0.00109 J	0.00012	0.0050	0.011	N/A	N/A	N/A	7074061
234'-TriCB-(22)	ng/g	0.00072 J	0.00013	0.0020	0.0049	N/A	N/A	N/A	7074061
235-TriCB-(23)	ng/g	0.00013 U	0.00013	0.0020	0.0046	N/A	N/A	N/A	7074061
236-TriCB-(24)	ng/g	0.000099 U	0.000099	0.0020	0.0090	N/A	N/A	N/A	7074061
23'4-TriCB-(25)	ng/g	0.00023 J	0.00012	0.0020	0.0064	N/A	N/A	N/A	7074061
TriCB-(26)+(29)	ng/g	0.00044 J	0.00013	0.0050	0.0087	N/A	N/A	N/A	7074061
23'6-TriCB-(27)	ng/g	0.00011 U	0.00011	0.0020	0.0065	N/A	N/A	N/A	7074061
24'5-TriCB-(31)	ng/g	0.00193 J	0.00012	0.0050	0.0038	N/A	N/A	N/A	7074061
24'6-TriCB-(32)	ng/g	0.00042 J	0.00010	0.0020	0.0024	N/A	N/A	N/A	7074061
23'5'-TriCB-(34)	ng/g	0.00013 U	0.00013	0.0020	0.0060	N/A	N/A	N/A	7074061
33'4-TriCB-(35)	ng/g	0.00014 U	0.00014	0.0020	0.0042	N/A	N/A	N/A	7074061

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QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00012 U	0.00012	0.0020	0.0029	N/A	N/A	N/A	7074061
344'-TriCB-(37)	ng/g	0.00138 J	0.00025	0.0020	0.0029	N/A	N/A	N/A	7074061
345-TriCB-(38)	ng/g	0.00014 U	0.00014	0.0020	0.0038	N/A	N/A	N/A	7074061
34'5-TriCB-(39)	ng/g	0.00012 U	0.00012	0.0020	0.0052	N/A	N/A	N/A	7074061
TetraCB-(40)+(41)+(71)	ng/g	0.00249 J	0.00024	0.010	0.016	N/A	N/A	N/A	7074061
22'34'-TetraCB-(42)	ng/g	0.00113 J	0.00025	0.0050	0.014	N/A	N/A	N/A	7074061
22'35-TetraCB-(43)	ng/g	0.00026 U	0.00026	0.0050	0.019	N/A	N/A	N/A	7074061
TetraCB-(44)+(47)+(65)	ng/g	0.00558 J	0.00022	0.010	0.041	N/A	N/A	N/A	7074061
TetraCB-(45)+(51)	ng/g	0.00122 J	0.00024	0.0050	0.018	N/A	N/A	N/A	7074061
22'36'-TetraCB-(46)	ng/g	0.00026 U	0.00026	0.0020	0.0090	N/A	N/A	N/A	7074061
22'45-TetraCB-(48)	ng/g	0.00064 J	0.00023	0.0050	0.0042	N/A	N/A	N/A	7074061
TetraCB-(49)+TetraCB-(69)	ng/g	0.00300 J	0.00021	0.010	0.010	N/A	N/A	N/A	7074061
TetraCB-(50)+(53)	ng/g	0.00105 J	0.00023	0.010	0.013	N/A	N/A	N/A	7074061
22'55'-TetraCB-(52)	ng/g	0.00598	0.00022	0.0050	0.016	N/A	N/A	N/A	7074061
22'66'-TetraCB-(54)	ng/g	0.00041 U	0.00041	0.0050	0.0096	N/A	N/A	N/A	7074061
233'4-TetraCB-(55)	ng/g	0.00015 U	0.00015	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'-Tetra CB(56)	ng/g	0.00175 J	0.00017	0.0050	0.0051	N/A	N/A	N/A	7074061
233'5-TetraCB-(57)	ng/g	0.00015 U	0.00015	0.0050	0.0056	N/A	N/A	N/A	7074061
233'5'-TetraCB-(58)	ng/g	0.00016 U	0.00016	0.0050	0.011	N/A	N/A	N/A	7074061
TetraCB-(59)+(62)+(75)	ng/g	0.00049 J	0.00018	0.010	0.014	N/A	N/A	N/A	7074061
2344'-TetraCB -(60)	ng/g	0.00065 J	0.00017	0.0050	0.0053	N/A	N/A	N/A	7074061
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.00738 J	0.00016	0.020	0.022	N/A	N/A	N/A	7074061
234'5-TetraCB-(63)	ng/g	0.00015 U	0.00015	0.0050	0.0071	N/A	N/A	N/A	7074061
234'6-TetraCB-(64)	ng/g	0.00230 J	0.00019	0.0050	0.0047	N/A	N/A	N/A	7074061
23'44'-TetraCB-(66)	ng/g	0.00412 J	0.00016	0.0050	0.099	N/A	N/A	N/A	7074061
23'45-TetraCB-(67)	ng/g	0.00014 U	0.00014	0.0050	0.011	N/A	N/A	N/A	7074061
23'45'-TetraCB-(68)	ng/g	0.00017 J	0.00014	0.0050	0.0088	N/A	N/A	N/A	7074061
23'55'-TetraCB-(72)	ng/g	0.00015 U	0.00015	0.0050	0.0086	N/A	N/A	N/A	7074061
23'5'6-TetraCB-(73)	ng/g	0.00019 U	0.00019	0.0050	0.019	N/A	N/A	N/A	7074061
33'44'-TetraCB-(77)	ng/g	0.00062 J	0.00028	0.0050	0.0063	0.000100	0.0000000620	N/A	7074061
33'45-TetraCB-(78)	ng/g	0.00018 U	0.00018	0.0050	0.0065	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.00015 U	0.00015	0.0050	0.0058	N/A	N/A	N/A	7074061
33'55'-TetraCB-(80)	ng/g	0.00013 U	0.00013	0.0050	0.0061	N/A	N/A	N/A	7074061
344'5-TetraCB-(81)	ng/g	0.00028 U	0.00028	0.0050	0.0058	0.000300	0.0000000840	N/A	7074061
22'33'4-PentaCB-(82)	ng/g	0.00130 J	0.00063	0.0050	0.0048	N/A	N/A	N/A	7074061
PentaCB-(83)+(99)	ng/g	0.00678 J	0.00058	0.010	0.016	N/A	N/A	N/A	7074061
22'33'6-PentaCB-(84)	ng/g	0.00273	0.00059	0.0020	0.0077	N/A	N/A	N/A	7074061
PentaCB-(85)+(116)+(117)	ng/g	0.00157 J	0.00048	0.010	0.027	N/A	N/A	N/A	7074061
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	0.00640 J	0.00049	0.020	0.029	N/A	N/A	N/A	7074061
PentaCB-(88)+(91)	ng/g	0.00198 J	0.00054	0.0050	0.013	N/A	N/A	N/A	7074061
22'346'-PentaCB-(89)	ng/g	0.00059 U	0.00059	0.0050	0.0080	N/A	N/A	N/A	7074061
PentaCB-(90)+(101)+(113)	ng/g	0.0117 J	0.00048	0.020	0.011	N/A	N/A	N/A	7074061
22'355'-PentaCB-(92)	ng/g	0.00263 J	0.00056	0.0050	0.0044	N/A	N/A	N/A	7074061
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.00054 U	0.00054	0.020	0.024	N/A	N/A	N/A	7074061
22'356'-PentaCB-(94)	ng/g	0.00057 U	0.00057	0.0050	0.0063	N/A	N/A	N/A	7074061
22'35'6-PentaCB-(95)	ng/g	0.00991	0.00053	0.0050	0.0088	N/A	N/A	N/A	7074061
22'366'-PentaCB-(96)	ng/g	0.00062 U	0.00062	0.0050	0.010	N/A	N/A	N/A	7074061
22'45'6-PentaCB-(103)	ng/g	0.00048 U	0.00048	0.0050	0.0061	N/A	N/A	N/A	7074061
22'466'-PentaCB-(104)	ng/g	0.00029 U	0.00029	0.0050	0.0056	N/A	N/A	N/A	7074061
233'44'-PentaCB-(105)	ng/g	0.00461 J	0.00037	0.0050	0.0044	0.0000300	0.000000138	N/A	7074061
233'45-PentaCB-(106)	ng/g	0.00024 U	0.00024	0.0050	0.0036	N/A	N/A	N/A	7074061
233'4'5-PentaCB-(107)	ng/g	0.00092 J	0.00025	0.0050	0.017	N/A	N/A	N/A	7074061
PentaCB-(108)+(124)	ng/g	0.00043 J	0.00025	0.010	0.011	N/A	N/A	N/A	7074061
PentaCB-(110)+(115)	ng/g	0.0166	0.00045	0.010	0.012	N/A	N/A	N/A	7074061
233'55'-PentaCB-(111)	ng/g	0.00042 U	0.00042	0.0050	0.0056	N/A	N/A	N/A	7074061
233'56-PentaCB-(112)	ng/g	0.00039 U	0.00039	0.0050	0.0078	N/A	N/A	N/A	7074061
2344'5-PentaCB-(114)	ng/g	0.00036 U	0.00036	0.0050	0.0042	0.0000300	0.0000000108	N/A	7074061
23'44'5-PentaCB-(118)	ng/g	0.0114	0.00037	0.0010	0.0066	0.0000300	0.000000342	N/A	7074061
23'455'-PentaCB-(120)	ng/g	0.00042 U	0.00042	0.0050	0.0064	N/A	N/A	N/A	7074061
23'45'6-PentaCB-(121)	ng/g	0.00040 U	0.00040	0.0050	0.0063	N/A	N/A	N/A	7074061
233'4'5'-PentaCB-(122)	ng/g	0.00029 U	0.00029	0.0050	0.0066	N/A	N/A	N/A	7074061
23'44'5'-PentaCB-(123)	ng/g	0.00039 U	0.00039	0.0050	0.014	0.0000300	0.0000000117	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'5-PentaCB-(126)	ng/g	0.00034 U	0.00034	0.0050	0.0030	0.100	0.0000340	N/A	7074061
33'455'-PentaCB-(127)	ng/g	0.00029 U	0.00029	0.0050	0.0032	N/A	N/A	N/A	7074061
HexaCB-(128)+(166)	ng/g	0.00314 J	0.00068	0.010	0.021	N/A	N/A	N/A	7074061
HexaCB-(129)+(138)+(163)	ng/g	0.0266	0.00070	0.020	0.037	N/A	N/A	N/A	7074061
22'33'45'-HexaCB-(130)	ng/g	0.00164 J	0.00082	0.0050	0.0051	N/A	N/A	N/A	7074061
22'33'46-HexaCB-(131)	ng/g	0.00077 U	0.00077	0.0050	0.0099	N/A	N/A	N/A	7074061
22'33'46'-HexaCB-(132)	ng/g	0.00765	0.00072	0.0050	0.0087	N/A	N/A	N/A	7074061
22'33'55'-HexaCB-(133)	ng/g	0.00067 U	0.00067	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(134)+(143)	ng/g	0.00087 J	0.00079	0.010	0.017	N/A	N/A	N/A	7074061
HexaCB-(135)+(151)	ng/g	0.00789 J	0.00082	0.020	0.014	N/A	N/A	N/A	7074061
22'33'66'-HexaCB-(136)	ng/g	0.00285 J	0.00060	0.0050	0.0083	N/A	N/A	N/A	7074061
22'344'5-HexaCB-(137)	ng/g	0.00079 U	0.00079	0.010	0.030	N/A	N/A	N/A	7074061
HexaCB-(139)+(140)	ng/g	0.00060 U	0.00060	0.010	0.016	N/A	N/A	N/A	7074061
22'3455'-HexaCB-(141)	ng/g	0.00420 J	0.00062	0.0050	0.012	N/A	N/A	N/A	7074061
22'3456-HexaCB-(142)	ng/g	0.00070 U	0.00070	0.0050	0.0088	N/A	N/A	N/A	7074061
22'345'6-HexaCB-(144)	ng/g	0.00099 J	0.00083	0.0050	0.0072	N/A	N/A	N/A	7074061
22'3466'-HexaCB-(145)	ng/g	0.00059 U	0.00059	0.0050	0.0082	N/A	N/A	N/A	7074061
22'34'55'-HexaCB-(146)	ng/g	0.00410 J	0.00060	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(147)+(149)	ng/g	0.0204	0.00065	0.010	0.019	N/A	N/A	N/A	7074061
22'34'56'-HexaCB-(148)	ng/g	0.00079 U	0.00079	0.0050	0.0084	N/A	N/A	N/A	7074061
22'34'66'-HexaCB-(150)	ng/g	0.00057 U	0.00057	0.0050	0.0061	N/A	N/A	N/A	7074061
22'3566'-HexaCB-(152)	ng/g	0.00055 U	0.00055	0.0050	0.013	N/A	N/A	N/A	7074061
HexaCB-(153)+(168)	ng/g	0.0214	0.00054	0.010	0.013	N/A	N/A	N/A	7074061
22'44'56'-HexaCB-(154)	ng/g	0.00067 U	0.00067	0.0050	0.012	N/A	N/A	N/A	7074061
22'44'66'-HexaCB-(155)	ng/g	0.00041 U	0.00041	0.0050	0.0087	N/A	N/A	N/A	7074061
HexaCB-(156)+(157)	ng/g	0.00224 J	0.00069	0.010	0.0086	0.0000300	0.0000000672	N/A	7074061
233'44'6-HexaCB-(158)	ng/g	0.00235 J	0.00048	0.0050	0.0072	N/A	N/A	N/A	7074061
233'455'-HexaCB-(159)	ng/g	0.00045 U	0.00045	0.0050	0.0082	N/A	N/A	N/A	7074061
233'456-HexaCB-(160)	ng/g	0.00055 U	0.00055	0.0050	0.017	N/A	N/A	N/A	7074061
233'45'6-HexaCB-(161)	ng/g	0.00050 U	0.00050	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'55'-HexaCB-(162)	ng/g	0.00042 U	0.00042	0.0050	0.0083	N/A	N/A	N/A	7074061

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	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'5'6-HexaCB-(164)	ng/g	0.00175 J	0.00049	0.0050	0.017	N/A	N/A	N/A	7074061
233'55'6-HexaCB-(165)	ng/g	0.00054 U	0.00054	0.0050	0.010	N/A	N/A	N/A	7074061
23'44'55'-HexaCB-(167)	ng/g	0.00089 J	0.00066	0.0050	0.0056	0.0000300	0.0000000267	N/A	7074061
33'44'55'-HexaCB-(169)	ng/g	0.00068 U	0.00068	0.0050	0.024	0.0300	0.0000204	N/A	7074061
22'33'44'5-HeptaCB-(170)	ng/g	0.00695	0.00055	0.0050	0.0042	N/A	N/A	N/A	7074061
HeptaCB-(171)+(173)	ng/g	0.00212 J	0.00056	0.010	0.011	N/A	N/A	N/A	7074061
22'33'455'-HeptaCB-(172)	ng/g	0.00149 J	0.00065	0.0050	0.0080	N/A	N/A	N/A	7074061
22'33'456'-HeptaCB-(174)	ng/g	0.00605	0.00050	0.0050	0.014	N/A	N/A	N/A	7074061
22'33'45'6-HeptaCB-(175)	ng/g	0.00068 U	0.00068	0.0050	0.0092	N/A	N/A	N/A	7074061
22'33'466'-HeptaCB-(176)	ng/g	0.00086 J	0.00048	0.0050	0.0098	N/A	N/A	N/A	7074061
22'33'45'6'-HeptaCB-(177)	ng/g	0.00457 J	0.00059	0.0050	0.0078	N/A	N/A	N/A	7074061
22'33'55'6-HeptaCB-(178)	ng/g	0.00155 J	0.00069	0.0050	0.010	N/A	N/A	N/A	7074061
22'33'566'-HeptaCB-(179)	ng/g	0.00290 J	0.00046	0.0050	0.0086	N/A	N/A	N/A	7074061
HeptaCB-(180)+(193)	ng/g	0.0165	0.00053	0.010	0.0085	N/A	N/A	N/A	7074061
22'344'56-HeptaCB-(181)	ng/g	0.00056 U	0.00056	0.0050	0.0080	N/A	N/A	N/A	7074061
22'344'56'-HeptaCB-(182)	ng/g	0.00065 U	0.00065	0.0050	0.0092	N/A	N/A	N/A	7074061
22'344'5'6-HeptaCB-(183)	ng/g	0.00466 J	0.00052	0.0050	0.028	N/A	N/A	N/A	7074061
22'344'66'-HeptaCB-(184)	ng/g	0.00043 U	0.00043	0.0050	0.010	N/A	N/A	N/A	7074061
22'3455'6-HeptaCB-(185)	ng/g	0.00050 U	0.00050	0.0050	0.022	N/A	N/A	N/A	7074061
22'34566'-HeptaCB-(186)	ng/g	0.00049 U	0.00049	0.0050	0.0086	N/A	N/A	N/A	7074061
22'34'55'6-HeptaCB-(187)	ng/g	0.00874	0.00062	0.0050	0.011	N/A	N/A	N/A	7074061
22'34'566'-HeptaCB-(188)	ng/g	0.00050 U	0.00050	0.0050	0.0047	N/A	N/A	N/A	7074061
233'44'55'-HeptaCB-(189)	ng/g	0.00052 U	0.00052	0.0050	0.0041	0.0000300	0.0000000156	N/A	7074061
233'44'56-HeptaCB-(190)	ng/g	0.00137 J	0.00060	0.0050	0.0041	N/A	N/A	N/A	7074061
233'44'5'6-HeptaCB-(191)	ng/g	0.00048 U	0.00048	0.0050	0.0045	N/A	N/A	N/A	7074061
233'455'6-HeptaCB-(192)	ng/g	0.00050 U	0.00050	0.0050	0.0090	N/A	N/A	N/A	7074061
22'33'44'55'-OctaCB-(194)	ng/g	0.00370 J	0.00053	0.0050	0.0095	N/A	N/A	N/A	7074061
22'33'44'56-OctaCB-(195)	ng/g	0.00176 J	0.00050	0.0050	0.0094	N/A	N/A	N/A	7074061
22'33'44'56'-OctaCB-(196)	ng/g	0.0018 U (1)	0.0018	0.0050	0.016	N/A	N/A	N/A	7074061
22'33'44'66'OctaCB-(197)	ng/g	0.00056 U	0.00056	0.0050	0.044	N/A	N/A	N/A	7074061

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
OctaCB-(198)+(199)	ng/g	0.00473 J	0.00088	0.010	0.014	N/A	N/A	N/A	7074061
22'33'4566'-OctaCB-(200)	ng/g	0.00053 U	0.00053	0.0050	0.032	N/A	N/A	N/A	7074061
22'33'45'66'-OctaCB-(201)	ng/g	0.00053 U	0.00053	0.0050	0.017	N/A	N/A	N/A	7074061
22'33'55'66'-OctaCB-(202)	ng/g	0.00115 J	0.00059	0.010	0.0081	N/A	N/A	N/A	7074061
22'344'55'6-OctaCB-(203)	ng/g	0.00291 J	0.00085	0.0050	0.011	N/A	N/A	N/A	7074061
22'344'566'-OctaCB-(204)	ng/g	0.00055 U	0.00055	0.0050	0.021	N/A	N/A	N/A	7074061
233'44'55'6-OctaCB-(205)	ng/g	0.00050 U	0.00050	0.0050	0.0096	N/A	N/A	N/A	7074061
22'33'44'55'6-NonaCB-(206)	ng/g	0.00434 J	0.00068	0.0050	0.0077	N/A	N/A	N/A	7074061
22'33'44'566'-NonaCB-(207)	ng/g	0.00054 U	0.00054	0.0050	0.0081	N/A	N/A	N/A	7074061
22'33'455'66'-NonaCB-(208)	ng/g	0.00157 J	0.00071	0.0050	0.0073	N/A	N/A	N/A	7074061
DecaCB-(209)	ng/g	0.0049 J	0.0018	0.0050	0.012	N/A	N/A	N/A	7074061
Total PCB	ng/g	0.323	N/A	N/A	N/A	N/A	N/A	N/A	7074061
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.0000552	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'55'6-NonaCB-(206)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'5-HeptaCB-(170)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'455'66'-NonaCB-(208)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'66'-OctaCB-(202)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'6-HeptaCB-(178)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'344'55'-HeptaCB-(180)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'34'566'-HeptaCB-(188)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'44'66'-HexaCB-(155)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'466'-PentaCB-(104)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'66'-TetraCB-(54)	%	77	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'6-TriCB-(19)	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'-DiCB-(4)	%	62	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'6-OctaCB-(205)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'-HeptaCB-(189)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'-PentaCB-(105)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'55'-PentaCB-(111)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ501							
Sampling Date		2020/10/15 14:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG04	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-23'44'55'-HexaCB-(167)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2344'5-PentaCB-(114)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'5-PentaCB-(118)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2'344'5-PentaCB-(123)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2-MonoCB-(1)	%	55	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'55'-HexaCB-(169)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'5-PentaCB-(126)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'-TetraCB-(77)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'5-TetraCB-(81)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'-TriCB-(37)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-44'-DiCB-(15)	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-4-MonoCB-(3)	%	60	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-DecaCB-(209)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-HexaCB-(156)+(157)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ502							
Sampling Date		2020/10/15 16:55							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00081 J	0.00028	0.0020	0.0026	N/A	N/A	N/A	7074061
3-MonoCB-(2)	ng/g	0.00162 J	0.00025	0.0020	0.0038	N/A	N/A	N/A	7074061
4-MonoCB-(3)	ng/g	0.00157 J	0.00028	0.0050	0.0035	N/A	N/A	N/A	7074061
22'-DiCB-(4)	ng/g	0.00092 U	0.00092	0.0050	0.0040	N/A	N/A	N/A	7074061
2,3-DiCB-(5)	ng/g	0.00041 U	0.00041	0.0050	0.015	N/A	N/A	N/A	7074061
2,3'-DiCB-(6)	ng/g	0.00039 U	0.00039	0.0020	0.0034	N/A	N/A	N/A	7074061
2,4-DiCB-(7)	ng/g	0.00037 U	0.00037	0.0020	0.0064	N/A	N/A	N/A	7074061
2,4'-DiCB-(8)	ng/g	0.00048 J	0.00038	0.0050	0.016	N/A	N/A	N/A	7074061
2,5-DiCB-(9)	ng/g	0.00044 U	0.00044	0.0020	0.0019	N/A	N/A	N/A	7074061
2,6-DiCB-(10)	ng/g	0.0014 U	0.0014	0.0050	0.0042	N/A	N/A	N/A	7074061
3,3'-DiCB-(11)	ng/g	0.00198 J	0.00042	0.010	0.034	N/A	N/A	N/A	7074061
DiCB-(12)+(13)	ng/g	0.00041 U	0.00041	0.0050	0.011	N/A	N/A	N/A	7074061
3,5-DiCB-(14)	ng/g	0.00039 U	0.00039	0.0020	0.0033	N/A	N/A	N/A	7074061
4,4'-DiCB-(15)	ng/g	0.00100 J	0.00076	0.0050	0.0039	N/A	N/A	N/A	7074061
22'3-TriCB-(16)	ng/g	0.0011 U	0.0011	0.0050	0.013	N/A	N/A	N/A	7074061
22'4-TriCB-(17)	ng/g	0.00067 U	0.00067	0.0020	0.0040	N/A	N/A	N/A	7074061
TriCB-(18)+(30)	ng/g	0.00094 J	0.00054	0.0050	0.0052	N/A	N/A	N/A	7074061
22'6-TriCB-(19)	ng/g	0.00043 U	0.00043	0.0020	0.0052	N/A	N/A	N/A	7074061
TriCB-(20) + (28)	ng/g	0.0022 U (1)	0.0022	0.0050	0.0090	N/A	N/A	N/A	7074061
TriCB-(21)+(33)	ng/g	0.00141 J	0.00042	0.0050	0.011	N/A	N/A	N/A	7074061
234'-TriCB-(22)	ng/g	0.00093 J	0.00044	0.0020	0.0049	N/A	N/A	N/A	7074061
235-TriCB-(23)	ng/g	0.00045 U	0.00045	0.0020	0.0046	N/A	N/A	N/A	7074061
236-TriCB-(24)	ng/g	0.00042 U	0.00042	0.0020	0.0090	N/A	N/A	N/A	7074061
23'4-TriCB-(25)	ng/g	0.00039 U	0.00039	0.0020	0.0064	N/A	N/A	N/A	7074061
TriCB-(26)+(29)	ng/g	0.00070 U (1)	0.00070	0.0050	0.0087	N/A	N/A	N/A	7074061
23'6-TriCB-(27)	ng/g	0.00045 U	0.00045	0.0020	0.0065	N/A	N/A	N/A	7074061
24'5-TriCB-(31)	ng/g	0.00246 J	0.00040	0.0050	0.0038	N/A	N/A	N/A	7074061
24'6-TriCB-(32)	ng/g	0.00043 U	0.00043	0.0020	0.0024	N/A	N/A	N/A	7074061
23'5'-TriCB-(34)	ng/g	0.00043 U	0.00043	0.0020	0.0060	N/A	N/A	N/A	7074061
33'4-TriCB-(35)	ng/g	0.00046 U	0.00046	0.0020	0.0042	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ502							
Sampling Date		2020/10/15 16:55							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00039 U	0.00039	0.0020	0.0029	N/A	N/A	N/A	7074061
344'-TriCB-(37)	ng/g	0.00134 J	0.00086	0.0020	0.0029	N/A	N/A	N/A	7074061
345-TriCB-(38)	ng/g	0.00048 U	0.00048	0.0020	0.0038	N/A	N/A	N/A	7074061
34'5-TriCB-(39)	ng/g	0.00043 U	0.00043	0.0020	0.0052	N/A	N/A	N/A	7074061
TetraCB-(40)+(41)+(71)	ng/g	0.00163 J	0.00091	0.010	0.016	N/A	N/A	N/A	7074061
22'34'-TetraCB-(42)	ng/g	0.00096 U	0.00096	0.0050	0.014	N/A	N/A	N/A	7074061
22'35-TetraCB-(43)	ng/g	0.0010 U	0.0010	0.0050	0.019	N/A	N/A	N/A	7074061
TetraCB-(44)+(47)+(65)	ng/g	0.00580 J	0.00084	0.010	0.041	N/A	N/A	N/A	7074061
TetraCB-(45)+(51)	ng/g	0.00091 U	0.00091	0.0050	0.018	N/A	N/A	N/A	7074061
22'36'-TetraCB-(46)	ng/g	0.0010 U	0.0010	0.0020	0.0090	N/A	N/A	N/A	7074061
22'45-TetraCB-(48)	ng/g	0.00090 U	0.00090	0.0050	0.0042	N/A	N/A	N/A	7074061
TetraCB-(49)+TetraCB-(69)	ng/g	0.00375 J	0.00081	0.010	0.010	N/A	N/A	N/A	7074061
TetraCB-(50)+(53)	ng/g	0.00087 U	0.00087	0.010	0.013	N/A	N/A	N/A	7074061
22'55'-TetraCB-(52)	ng/g	0.0148	0.00085	0.0050	0.016	N/A	N/A	N/A	7074061
22'66'-TetraCB-(54)	ng/g	0.0021 U	0.0021	0.0050	0.0096	N/A	N/A	N/A	7074061
233'4-TetraCB-(55)	ng/g	0.00073 U	0.00073	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'-Tetra CB(56)	ng/g	0.00256 J	0.00085	0.0050	0.0051	N/A	N/A	N/A	7074061
233'5-TetraCB-(57)	ng/g	0.00077 U	0.00077	0.0050	0.0056	N/A	N/A	N/A	7074061
233'5'-TetraCB-(58)	ng/g	0.00077 U	0.00077	0.0050	0.011	N/A	N/A	N/A	7074061
TetraCB-(59)+(62)+(75)	ng/g	0.00069 U	0.00069	0.010	0.014	N/A	N/A	N/A	7074061
2344'-TetraCB -(60)	ng/g	0.00114 J	0.00084	0.0050	0.0053	N/A	N/A	N/A	7074061
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.0218	0.00078	0.020	0.022	N/A	N/A	N/A	7074061
234'5-TetraCB-(63)	ng/g	0.00075 U	0.00075	0.0050	0.0071	N/A	N/A	N/A	7074061
234'6-TetraCB-(64)	ng/g	0.00241 J	0.00074	0.0050	0.0047	N/A	N/A	N/A	7074061
23'44'-TetraCB-(66)	ng/g	0.00642	0.00078	0.0050	0.099	N/A	N/A	N/A	7074061
23'45-TetraCB-(67)	ng/g	0.00068 U	0.00068	0.0050	0.011	N/A	N/A	N/A	7074061
23'45'-TetraCB-(68)	ng/g	0.00069 U	0.00069	0.0050	0.0088	N/A	N/A	N/A	7074061
23'55'-TetraCB-(72)	ng/g	0.00074 U	0.00074	0.0050	0.0086	N/A	N/A	N/A	7074061
23'5'6-TetraCB-(73)	ng/g	0.00072 U	0.00072	0.0050	0.019	N/A	N/A	N/A	7074061
33'44'-TetraCB-(77)	ng/g	0.0014 U	0.0014	0.0050	0.0063	0.000100	0.000000140	N/A	7074061
33'45-TetraCB-(78)	ng/g	0.00089 U	0.00089	0.0050	0.0065	N/A	N/A	N/A	7074061

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N/A = Not Applicable

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ502							
Sampling Date		2020/10/15 16:55							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.00077 U	0.00077	0.0050	0.0058	N/A	N/A	N/A	7074061
33'55'-TetraCB-(80)	ng/g	0.00066 U	0.00066	0.0050	0.0061	N/A	N/A	N/A	7074061
344'5-TetraCB-(81)	ng/g	0.0014 U	0.0014	0.0050	0.0058	0.000300	0.000000420	N/A	7074061
22'33'4-PentaCB-(82)	ng/g	0.00378 J	0.00091	0.0050	0.0048	N/A	N/A	N/A	7074061
PentaCB-(83)+(99)	ng/g	0.0169	0.00085	0.010	0.016	N/A	N/A	N/A	7074061
22'33'6-PentaCB-(84)	ng/g	0.00547	0.00086	0.0020	0.0077	N/A	N/A	N/A	7074061
PentaCB-(85)+(116)+(117)	ng/g	0.00432 J	0.00069	0.010	0.027	N/A	N/A	N/A	7074061
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	0.0197 J	0.00071	0.020	0.029	N/A	N/A	N/A	7074061
PentaCB-(88)+(91)	ng/g	0.00314 J	0.00078	0.0050	0.013	N/A	N/A	N/A	7074061
22'346'-PentaCB-(89)	ng/g	0.00086 U	0.00086	0.0050	0.0080	N/A	N/A	N/A	7074061
PentaCB-(90)+(101)+(113)	ng/g	0.0340	0.00070	0.020	0.011	N/A	N/A	N/A	7074061
22'355'-PentaCB-(92)	ng/g	0.00560	0.00081	0.0050	0.0044	N/A	N/A	N/A	7074061
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.00078 U	0.00078	0.020	0.024	N/A	N/A	N/A	7074061
22'356'-PentaCB-(94)	ng/g	0.00083 U	0.00083	0.0050	0.0063	N/A	N/A	N/A	7074061
22'35'6-PentaCB-(95)	ng/g	0.0179	0.00077	0.0050	0.0088	N/A	N/A	N/A	7074061
22'366'-PentaCB-(96)	ng/g	0.0031 U	0.0031	0.0050	0.010	N/A	N/A	N/A	7074061
22'45'6-PentaCB-(103)	ng/g	0.00070 U	0.00070	0.0050	0.0061	N/A	N/A	N/A	7074061
22'466'-PentaCB-(104)	ng/g	0.0014 U	0.0014	0.0050	0.0056	N/A	N/A	N/A	7074061
233'44'-PentaCB-(105)	ng/g	0.0185	0.00092	0.0050	0.0044	0.0000300	0.000000555	N/A	7074061
233'45-PentaCB-(106)	ng/g	0.00060 U	0.00060	0.0050	0.0036	N/A	N/A	N/A	7074061
233'4'5-PentaCB-(107)	ng/g	0.00297 J	0.00063	0.0050	0.017	N/A	N/A	N/A	7074061
PentaCB-(108)+(124)	ng/g	0.00162 J	0.00064	0.010	0.011	N/A	N/A	N/A	7074061
PentaCB-(110)+(115)	ng/g	0.0383	0.00066	0.010	0.012	N/A	N/A	N/A	7074061
233'55'-PentaCB-(111)	ng/g	0.00061 U	0.00061	0.0050	0.0056	N/A	N/A	N/A	7074061
233'56-PentaCB-(112)	ng/g	0.00056 U	0.00056	0.0050	0.0078	N/A	N/A	N/A	7074061
2344'5-PentaCB-(114)	ng/g	0.00107 J	0.00090	0.0050	0.0042	0.0000300	0.0000000321	N/A	7074061
23'44'5-PentaCB-(118)	ng/g	0.0467	0.00093	0.0010	0.0066	0.0000300	0.00000140	N/A	7074061
23'455'-PentaCB-(120)	ng/g	0.00062 U	0.00062	0.0050	0.0064	N/A	N/A	N/A	7074061
23'45'6-PentaCB-(121)	ng/g	0.00058 U	0.00058	0.0050	0.0063	N/A	N/A	N/A	7074061
233'4'5'-PentaCB-(122)	ng/g	0.00073 U	0.00073	0.0050	0.0066	N/A	N/A	N/A	7074061
23'44'5'-PentaCB-(123)	ng/g	0.00099 U	0.00099	0.0050	0.014	0.0000300	0.0000000297	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ502							
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	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'5-PentaCB-(126)	ng/g	0.00086 U	0.00086	0.0050	0.0030	0.100	0.0000860	N/A	7074061
33'455'-PentaCB-(127)	ng/g	0.00073 U	0.00073	0.0050	0.0032	N/A	N/A	N/A	7074061
HexaCB-(128)+(166)	ng/g	0.00848 J	0.00098	0.010	0.021	N/A	N/A	N/A	7074061
HexaCB-(129)+(138)+(163)	ng/g	0.0591	0.0010	0.020	0.037	N/A	N/A	N/A	7074061
22'33'45'-HexaCB-(130)	ng/g	0.0022 J	0.0012	0.0050	0.0051	N/A	N/A	N/A	7074061
22'33'46-HexaCB-(131)	ng/g	0.0011 U	0.0011	0.0050	0.0099	N/A	N/A	N/A	7074061
22'33'46'-HexaCB-(132)	ng/g	0.012 U (1)	0.012	0.0050	0.0087	N/A	N/A	N/A	7074061
22'33'55'-HexaCB-(133)	ng/g	0.00097 U	0.00097	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(134)+(143)	ng/g	0.0025 J	0.0011	0.010	0.017	N/A	N/A	N/A	7074061
HexaCB-(135)+(151)	ng/g	0.0131 J	0.0028	0.020	0.014	N/A	N/A	N/A	7074061
22'33'66'-HexaCB-(136)	ng/g	0.0044 J	0.0021	0.0050	0.0083	N/A	N/A	N/A	7074061
22'344'5-HexaCB-(137)	ng/g	0.0015 J	0.0011	0.010	0.030	N/A	N/A	N/A	7074061
HexaCB-(139)+(140)	ng/g	0.00087 U	0.00087	0.010	0.016	N/A	N/A	N/A	7074061
22'3455'-HexaCB-(141)	ng/g	0.00975	0.00089	0.0050	0.012	N/A	N/A	N/A	7074061
22'3456-HexaCB-(142)	ng/g	0.0010 U	0.0010	0.0050	0.0088	N/A	N/A	N/A	7074061
22'345'6-HexaCB-(144)	ng/g	0.0028 U	0.0028	0.0050	0.0072	N/A	N/A	N/A	7074061
22'3466'-HexaCB-(145)	ng/g	0.0020 U	0.0020	0.0050	0.0082	N/A	N/A	N/A	7074061
22'34'55'-HexaCB-(146)	ng/g	0.00702	0.00086	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(147)+(149)	ng/g	0.0418	0.00093	0.010	0.019	N/A	N/A	N/A	7074061
22'34'56'-HexaCB-(148)	ng/g	0.0027 U	0.0027	0.0050	0.0084	N/A	N/A	N/A	7074061
22'34'66'-HexaCB-(150)	ng/g	0.0019 U	0.0019	0.0050	0.0061	N/A	N/A	N/A	7074061
22'3566'-HexaCB-(152)	ng/g	0.0019 U	0.0019	0.0050	0.013	N/A	N/A	N/A	7074061
HexaCB-(153)+(168)	ng/g	0.0506	0.00078	0.010	0.013	N/A	N/A	N/A	7074061
22'44'56'-HexaCB-(154)	ng/g	0.0023 U	0.0023	0.0050	0.012	N/A	N/A	N/A	7074061
22'44'66'-HexaCB-(155)	ng/g	0.0014 U	0.0014	0.0050	0.0087	N/A	N/A	N/A	7074061
HexaCB-(156)+(157)	ng/g	0.0083 J	0.0017	0.010	0.0086	0.0000300	0.000000249	N/A	7074061
233'44'6-HexaCB-(158)	ng/g	0.00546	0.00070	0.0050	0.0072	N/A	N/A	N/A	7074061
233'455'-HexaCB-(159)	ng/g	0.0011 U	0.0011	0.0050	0.0082	N/A	N/A	N/A	7074061
233'456-HexaCB-(160)	ng/g	0.00079 U	0.00079	0.0050	0.017	N/A	N/A	N/A	7074061
233'45'6-HexaCB-(161)	ng/g	0.00072 U	0.00072	0.0050	0.011	N/A	N/A	N/A	7074061

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ502							
Sampling Date		2020/10/15 16:55							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'55'-HexaCB-(162)	ng/g	0.0010 U	0.0010	0.0050	0.0083	N/A	N/A	N/A	7074061
233'4'5'6-HexaCB-(164)	ng/g	0.00391 J	0.00071	0.0050	0.017	N/A	N/A	N/A	7074061
233'55'6-HexaCB-(165)	ng/g	0.00077 U	0.00077	0.0050	0.010	N/A	N/A	N/A	7074061
23'44'55'-HexaCB-(167)	ng/g	0.0024 J	0.0016	0.0050	0.0056	0.0000300	0.0000000720	N/A	7074061
33'44'55'-HexaCB-(169)	ng/g	0.0017 U	0.0017	0.0050	0.024	0.0300	0.0000510	N/A	7074061
22'33'44'5-HeptaCB-(170)	ng/g	0.0210	0.0012	0.0050	0.0042	N/A	N/A	N/A	7074061
HeptaCB-(171)+(173)	ng/g	0.0063 J	0.0012	0.010	0.011	N/A	N/A	N/A	7074061
22'33'455'-HeptaCB-(172)	ng/g	0.0059	0.0014	0.0050	0.0080	N/A	N/A	N/A	7074061
22'33'456'-HeptaCB-(174)	ng/g	0.0259	0.0011	0.0050	0.014	N/A	N/A	N/A	7074061
22'33'45'6-HeptaCB-(175)	ng/g	0.0015 U	0.0015	0.0050	0.0092	N/A	N/A	N/A	7074061
22'33'466'-HeptaCB-(176)	ng/g	0.0026 J	0.0011	0.0050	0.0098	N/A	N/A	N/A	7074061
22'33'45'6'-HeptaCB-(177)	ng/g	0.0137	0.0012	0.0050	0.0078	N/A	N/A	N/A	7074061
22'33'55'6-HeptaCB-(178)	ng/g	0.0068	0.0015	0.0050	0.010	N/A	N/A	N/A	7074061
22'33'566'-HeptaCB-(179)	ng/g	0.0099	0.0010	0.0050	0.0086	N/A	N/A	N/A	7074061
HeptaCB-(180)+(193)	ng/g	0.0702	0.0011	0.010	0.0085	N/A	N/A	N/A	7074061
22'344'56-HeptaCB-(181)	ng/g	0.0012 U	0.0012	0.0050	0.0080	N/A	N/A	N/A	7074061
22'344'56'-HeptaCB-(182)	ng/g	0.0014 U	0.0014	0.0050	0.0092	N/A	N/A	N/A	7074061
22'344'5'6-HeptaCB-(183)	ng/g	0.0236	0.0011	0.0050	0.028	N/A	N/A	N/A	7074061
22'344'66'-HeptaCB-(184)	ng/g	0.00095 U	0.00095	0.0050	0.010	N/A	N/A	N/A	7074061
22'3455'6-HeptaCB-(185)	ng/g	0.0011 U	0.0011	0.0050	0.022	N/A	N/A	N/A	7074061
22'34566'-HeptaCB-(186)	ng/g	0.0011 U	0.0011	0.0050	0.0086	N/A	N/A	N/A	7074061
22'34'55'6-HeptaCB-(187)	ng/g	0.0323	0.0014	0.0050	0.011	N/A	N/A	N/A	7074061
22'34'566'-HeptaCB-(188)	ng/g	0.0011 U	0.0011	0.0050	0.0047	N/A	N/A	N/A	7074061
233'44'55'-HeptaCB-(189)	ng/g	0.0014 U	0.0014	0.0050	0.0041	0.0000300	0.0000000420	N/A	7074061
233'44'56-HeptaCB-(190)	ng/g	0.0049 J	0.0013	0.0050	0.0041	N/A	N/A	N/A	7074061
233'44'5'6-HeptaCB-(191)	ng/g	0.0010 U	0.0010	0.0050	0.0045	N/A	N/A	N/A	7074061
233'455'6-HeptaCB-(192)	ng/g	0.0011 U	0.0011	0.0050	0.0090	N/A	N/A	N/A	7074061
22'33'44'55'-OctaCB-(194)	ng/g	0.0544	0.0019	0.0050	0.0095	N/A	N/A	N/A	7074061
22'33'44'56-OctaCB-(195)	ng/g	0.0132	0.0018	0.0050	0.0094	N/A	N/A	N/A	7074061
22'33'44'56'-OctaCB-(196)	ng/g	0.0514	0.0026	0.0050	0.016	N/A	N/A	N/A	7074061
22'33'44'66'OctaCB-(197)	ng/g	0.0015 U	0.0015	0.0050	0.044	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ502							
Sampling Date		2020/10/15 16:55							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
OctaCB-(198)+(199)	ng/g	0.323	0.0023	0.010	0.014	N/A	N/A	N/A	7074061
22'33'4566'-OctaCB-(200)	ng/g	0.0062	0.0014	0.0050	0.032	N/A	N/A	N/A	7074061
22'33'45'66'-OctaCB-(201)	ng/g	0.0150	0.0014	0.0050	0.017	N/A	N/A	N/A	7074061
22'33'55'66'-OctaCB-(202)	ng/g	0.110	0.0016	0.010	0.0081	N/A	N/A	N/A	7074061
22'344'55'6-OctaCB-(203)	ng/g	0.110	0.0023	0.0050	0.011	N/A	N/A	N/A	7074061
22'344'566'-OctaCB-(204)	ng/g	0.0015 U	0.0015	0.0050	0.021	N/A	N/A	N/A	7074061
233'44'55'6-OctaCB-(205)	ng/g	0.0035 J	0.0018	0.0050	0.0096	N/A	N/A	N/A	7074061
22'33'44'55'6-NonaCB-(206)	ng/g	2.62	0.0031	0.0050	0.0077	N/A	N/A	N/A	7074061
22'33'44'566'-NonaCB-(207)	ng/g	0.123	0.0024	0.0050	0.0081	N/A	N/A	N/A	7074061
22'33'455'66'-NonaCB-(208)	ng/g	1.19	0.0032	0.0050	0.0073	N/A	N/A	N/A	7074061
DecaCB-(209)	ng/g	4.01	0.0063	0.0050	0.012	N/A	N/A	N/A	7074061
Total PCB	ng/g	9.36	N/A	N/A	N/A	N/A	N/A	N/A	7074061
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.000140	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'55'6-NonaCB-(206)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'5-HeptaCB-(170)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'455'66'-NonaCB-(208)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'66'-OctaCB-(202)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'6-HeptaCB-(178)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'344'55'-HeptaCB-(180)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'34'566'-HeptaCB-(188)	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'44'66'-HexaCB-(155)	%	61	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'466'-PentaCB-(104)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'66'-TetraCB-(54)	%	52	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'6-TriCB-(19)	%	56	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'-DiCB-(4)	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'6-OctaCB-(205)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'-HeptaCB-(189)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'-PentaCB-(105)	%	122	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'55'-PentaCB-(111)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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BV Labs ID		NYQ502							
Sampling Date		2020/10/15 16:55							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG05	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-23'44'55'-HexaCB-(167)	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2344'5-PentaCB-(114)	%	125	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'5-PentaCB-(118)	%	126	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2'344'5-PentaCB-(123)	%	130	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2-MonoCB-(1)	%	89	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'55'-HexaCB-(169)	%	120	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'5-PentaCB-(126)	%	140	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'-TetraCB-(77)	%	140	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'5-TetraCB-(81)	%	131	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'-TriCB-(37)	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-44'-DiCB-(15)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-4-MonoCB-(3)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-DecaCB-(209)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-HexaCB-(156)+(157)	%	123	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00123 J	0.00011	0.0020	0.0026	N/A	N/A	N/A	7074061
3-MonoCB-(2)	ng/g	0.00131 J	0.000097	0.0020	0.0038	N/A	N/A	N/A	7074061
4-MonoCB-(3)	ng/g	0.00140 J	0.00011	0.0050	0.0035	N/A	N/A	N/A	7074061
22'-DiCB-(4)	ng/g	0.0018 U	0.0018	0.0050	0.0040	N/A	N/A	N/A	7074061
2,3-DiCB-(5)	ng/g	0.00012 U	0.00012	0.0050	0.015	N/A	N/A	N/A	7074061
2,3'-DiCB-(6)	ng/g	0.00046 J	0.00011	0.0020	0.0034	N/A	N/A	N/A	7074061
2,4-DiCB-(7)	ng/g	0.00010 U	0.00010	0.0020	0.0064	N/A	N/A	N/A	7074061
2,4'-DiCB-(8)	ng/g	0.00165 J	0.00011	0.0050	0.016	N/A	N/A	N/A	7074061
2,5-DiCB-(9)	ng/g	0.00012 U	0.00012	0.0020	0.0019	N/A	N/A	N/A	7074061
2,6-DiCB-(10)	ng/g	0.0027 U	0.0027	0.0050	0.0042	N/A	N/A	N/A	7074061
3,3'-DiCB-(11)	ng/g	0.00318 J	0.00012	0.010	0.034	N/A	N/A	N/A	7074061
DiCB-(12)+(13)	ng/g	0.00032 U (1)	0.00032	0.0050	0.011	N/A	N/A	N/A	7074061
3,5-DiCB-(14)	ng/g	0.00011 U	0.00011	0.0020	0.0033	N/A	N/A	N/A	7074061
4,4'-DiCB-(15)	ng/g	0.00233 J	0.00021	0.0050	0.0039	N/A	N/A	N/A	7074061
22'3-TriCB-(16)	ng/g	0.00258 J	0.00036	0.0050	0.013	N/A	N/A	N/A	7074061
22'4-TriCB-(17)	ng/g	0.00217	0.00023	0.0020	0.0040	N/A	N/A	N/A	7074061
TriCB-(18)+(30)	ng/g	0.00428 J	0.00018	0.0050	0.0052	N/A	N/A	N/A	7074061
22'6-TriCB-(19)	ng/g	0.00088 U (1)	0.00088	0.0020	0.0052	N/A	N/A	N/A	7074061
TriCB-(20) + (28)	ng/g	0.0107	0.00014	0.0050	0.0090	N/A	N/A	N/A	7074061
TriCB-(21)+(33)	ng/g	0.00436 J	0.00014	0.0050	0.011	N/A	N/A	N/A	7074061
234'-TriCB-(22)	ng/g	0.00306	0.00014	0.0020	0.0049	N/A	N/A	N/A	7074061
235-TriCB-(23)	ng/g	0.00015 U	0.00015	0.0020	0.0046	N/A	N/A	N/A	7074061
236-TriCB-(24)	ng/g	0.00014 U	0.00014	0.0020	0.0090	N/A	N/A	N/A	7074061
23'4-TriCB-(25)	ng/g	0.00064 J	0.00013	0.0020	0.0064	N/A	N/A	N/A	7074061
TriCB-(26)+(29)	ng/g	0.00161 J	0.00014	0.0050	0.0087	N/A	N/A	N/A	7074061
23'6-TriCB-(27)	ng/g	0.00041 J	0.00015	0.0020	0.0065	N/A	N/A	N/A	7074061
24'5-TriCB-(31)	ng/g	0.00882	0.00013	0.0050	0.0038	N/A	N/A	N/A	7074061
24'6-TriCB-(32)	ng/g	0.00148 J	0.00015	0.0020	0.0024	N/A	N/A	N/A	7074061
23'5'-TriCB-(34)	ng/g	0.00014 U	0.00014	0.0020	0.0060	N/A	N/A	N/A	7074061
33'4-TriCB-(35)	ng/g	0.00024 U (1)	0.00024	0.0020	0.0042	N/A	N/A	N/A	7074061

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00013 U	0.00013	0.0020	0.0029	N/A	N/A	N/A	7074061
344'-TriCB-(37)	ng/g	0.00425	0.00028	0.0020	0.0029	N/A	N/A	N/A	7074061
345-TriCB-(38)	ng/g	0.00016 U	0.00016	0.0020	0.0038	N/A	N/A	N/A	7074061
34'5-TriCB-(39)	ng/g	0.00014 U	0.00014	0.0020	0.0052	N/A	N/A	N/A	7074061
TetraCB-(40)+(41)+(71)	ng/g	0.00723 J	0.00024	0.010	0.016	N/A	N/A	N/A	7074061
22'34'-TetraCB-(42)	ng/g	0.00346 J	0.00025	0.0050	0.014	N/A	N/A	N/A	7074061
22'35-TetraCB-(43)	ng/g	0.00050 J	0.00027	0.0050	0.019	N/A	N/A	N/A	7074061
TetraCB-(44)+(47)+(65)	ng/g	0.0159	0.00022	0.010	0.041	N/A	N/A	N/A	7074061
TetraCB-(45)+(51)	ng/g	0.00235 J	0.00024	0.0050	0.018	N/A	N/A	N/A	7074061
22'36'-TetraCB-(46)	ng/g	0.00082 J	0.00027	0.0020	0.0090	N/A	N/A	N/A	7074061
22'45-TetraCB-(48)	ng/g	0.00225 J	0.00024	0.0050	0.0042	N/A	N/A	N/A	7074061
TetraCB-(49)+TetraCB-(69)	ng/g	0.00937 J	0.00021	0.010	0.010	N/A	N/A	N/A	7074061
TetraCB-(50)+(53)	ng/g	0.00200 J	0.00023	0.010	0.013	N/A	N/A	N/A	7074061
22'55'-TetraCB-(52)	ng/g	0.0237	0.00023	0.0050	0.016	N/A	N/A	N/A	7074061
22'66'-TetraCB-(54)	ng/g	0.00064 U	0.00064	0.0050	0.0096	N/A	N/A	N/A	7074061
233'4-TetraCB-(55)	ng/g	0.00016 U	0.00016	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'-Tetra CB(56)	ng/g	0.00707	0.00019	0.0050	0.0051	N/A	N/A	N/A	7074061
233'5-TetraCB-(57)	ng/g	0.00017 U	0.00017	0.0050	0.0056	N/A	N/A	N/A	7074061
233'5'-TetraCB-(58)	ng/g	0.00017 U	0.00017	0.0050	0.011	N/A	N/A	N/A	7074061
TetraCB-(59)+(62)+(75)	ng/g	0.00116 J	0.00018	0.010	0.014	N/A	N/A	N/A	7074061
2344'-TetraCB -(60)	ng/g	0.00386 J	0.00018	0.0050	0.0053	N/A	N/A	N/A	7074061
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.0352	0.00017	0.020	0.022	N/A	N/A	N/A	7074061
234'5-TetraCB-(63)	ng/g	0.00067 J	0.00016	0.0050	0.0071	N/A	N/A	N/A	7074061
234'6-TetraCB-(64)	ng/g	0.00745	0.00020	0.0050	0.0047	N/A	N/A	N/A	7074061
23'44'-TetraCB-(66)	ng/g	0.0163	0.00017	0.0050	0.099	N/A	N/A	N/A	7074061
23'45-TetraCB-(67)	ng/g	0.00043 J	0.00015	0.0050	0.011	N/A	N/A	N/A	7074061
23'45'-TetraCB-(68)	ng/g	0.00021 J	0.00015	0.0050	0.0088	N/A	N/A	N/A	7074061
23'55'-TetraCB-(72)	ng/g	0.00025 J	0.00016	0.0050	0.0086	N/A	N/A	N/A	7074061
23'5'6-TetraCB-(73)	ng/g	0.00019 U	0.00019	0.0050	0.019	N/A	N/A	N/A	7074061
33'44'-TetraCB-(77)	ng/g	0.00221 J	0.00030	0.0050	0.0063	0.000100	0.000000221	N/A	7074061
33'45-TetraCB-(78)	ng/g	0.00019 U	0.00019	0.0050	0.0065	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.00042 J	0.00017	0.0050	0.0058	N/A	N/A	N/A	7074061
33'55'-TetraCB-(80)	ng/g	0.00014 U	0.00014	0.0050	0.0061	N/A	N/A	N/A	7074061
344'5-TetraCB-(81)	ng/g	0.00030 U	0.00030	0.0050	0.0058	0.000300	0.0000000900	N/A	7074061
22'33'4-PentaCB-(82)	ng/g	0.00455 J	0.00028	0.0050	0.0048	N/A	N/A	N/A	7074061
PentaCB-(83)+(99)	ng/g	0.0197	0.00026	0.010	0.016	N/A	N/A	N/A	7074061
22'33'6-PentaCB-(84)	ng/g	0.00989	0.00026	0.0020	0.0077	N/A	N/A	N/A	7074061
PentaCB-(85)+(116)+(117)	ng/g	0.00584 J	0.00021	0.010	0.027	N/A	N/A	N/A	7074061
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	0.0265	0.00022	0.020	0.029	N/A	N/A	N/A	7074061
PentaCB-(88)+(91)	ng/g	0.0045 U (1)	0.0045	0.0050	0.013	N/A	N/A	N/A	7074061
22'346'-PentaCB-(89)	ng/g	0.00026 U	0.00026	0.0050	0.0080	N/A	N/A	N/A	7074061
PentaCB-(90)+(101)+(113)	ng/g	0.0475	0.00021	0.020	0.011	N/A	N/A	N/A	7074061
22'355'-PentaCB-(92)	ng/g	0.00779	0.00025	0.0050	0.0044	N/A	N/A	N/A	7074061
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.00153 J	0.00024	0.020	0.024	N/A	N/A	N/A	7074061
22'356'-PentaCB-(94)	ng/g	0.00025 U	0.00025	0.0050	0.0063	N/A	N/A	N/A	7074061
22'35'6-PentaCB-(95)	ng/g	0.0355	0.00023	0.0050	0.0088	N/A	N/A	N/A	7074061
22'366'-PentaCB-(96)	ng/g	0.00048 U	0.00048	0.0050	0.010	N/A	N/A	N/A	7074061
22'45'6-PentaCB-(103)	ng/g	0.00037 J	0.00022	0.0050	0.0061	N/A	N/A	N/A	7074061
22'466'-PentaCB-(104)	ng/g	0.00022 U	0.00022	0.0050	0.0056	N/A	N/A	N/A	7074061
233'44'-PentaCB-(105)	ng/g	0.0188	0.00025	0.0050	0.0044	0.0000300	0.000000564	N/A	7074061
233'45-PentaCB-(106)	ng/g	0.00016 U	0.00016	0.0050	0.0036	N/A	N/A	N/A	7074061
233'4'5-PentaCB-(107)	ng/g	0.00284 J	0.00017	0.0050	0.017	N/A	N/A	N/A	7074061
PentaCB-(108)+(124)	ng/g	0.00151 J	0.00017	0.010	0.011	N/A	N/A	N/A	7074061
PentaCB-(110)+(115)	ng/g	0.0561	0.00020	0.010	0.012	N/A	N/A	N/A	7074061
233'55'-PentaCB-(111)	ng/g	0.00019 U	0.00019	0.0050	0.0056	N/A	N/A	N/A	7074061
233'56-PentaCB-(112)	ng/g	0.00017 U	0.00017	0.0050	0.0078	N/A	N/A	N/A	7074061
2344'5-PentaCB-(114)	ng/g	0.00119 J	0.00024	0.0050	0.0042	0.0000300	0.0000000357	N/A	7074061
23'44'5-PentaCB-(118)	ng/g	0.0482	0.00025	0.0010	0.0066	0.0000300	0.00000145	N/A	7074061
23'455'-PentaCB-(120)	ng/g	0.00019 U	0.00019	0.0050	0.0064	N/A	N/A	N/A	7074061
23'45'6-PentaCB-(121)	ng/g	0.00018 U	0.00018	0.0050	0.0063	N/A	N/A	N/A	7074061
233'4'5'-PentaCB-(122)	ng/g	0.00083 J	0.00020	0.0050	0.0066	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5'-PentaCB-(123)	ng/g	0.00081 J	0.00027	0.0050	0.014	0.0000300	0.0000000243	N/A	7074061
33'44'5-PentaCB-(126)	ng/g	0.00023 U	0.00023	0.0050	0.0030	0.100	0.0000230	N/A	7074061
33'455'-PentaCB-(127)	ng/g	0.00020 U	0.00020	0.0050	0.0032	N/A	N/A	N/A	7074061
HexaCB-(128)+(166)	ng/g	0.00909 J	0.00033	0.010	0.021	N/A	N/A	N/A	7074061
HexaCB-(129)+(138)+(163)	ng/g	0.0803	0.00034	0.020	0.037	N/A	N/A	N/A	7074061
22'33'45'-HexaCB-(130)	ng/g	0.00371 J	0.00039	0.0050	0.0051	N/A	N/A	N/A	7074061
22'33'46-HexaCB-(131)	ng/g	0.00082 J	0.00037	0.0050	0.0099	N/A	N/A	N/A	7074061
22'33'46'-HexaCB-(132)	ng/g	0.0238	0.00035	0.0050	0.0087	N/A	N/A	N/A	7074061
22'33'55'-HexaCB-(133)	ng/g	0.00091 J	0.00032	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(134)+(143)	ng/g	0.00245 J	0.00038	0.010	0.017	N/A	N/A	N/A	7074061
HexaCB-(135)+(151)	ng/g	0.0229	0.00065	0.020	0.014	N/A	N/A	N/A	7074061
22'33'66'-HexaCB-(136)	ng/g	0.00810	0.00048	0.0050	0.0083	N/A	N/A	N/A	7074061
22'344'5-HexaCB-(137)	ng/g	0.0015 U (1)	0.0015	0.010	0.030	N/A	N/A	N/A	7074061
HexaCB-(139)+(140)	ng/g	0.00077 J	0.00029	0.010	0.016	N/A	N/A	N/A	7074061
22'3455'-HexaCB-(141)	ng/g	0.0134	0.00030	0.0050	0.012	N/A	N/A	N/A	7074061
22'3456-HexaCB-(142)	ng/g	0.00033 U	0.00033	0.0050	0.0088	N/A	N/A	N/A	7074061
22'345'6-HexaCB-(144)	ng/g	0.00317 J	0.00066	0.0050	0.0072	N/A	N/A	N/A	7074061
22'3466'-HexaCB-(145)	ng/g	0.00047 U	0.00047	0.0050	0.0082	N/A	N/A	N/A	7074061
22'34'55'-HexaCB-(146)	ng/g	0.00928	0.00029	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(147)+(149)	ng/g	0.0629	0.00031	0.010	0.019	N/A	N/A	N/A	7074061
22'34'56'-HexaCB-(148)	ng/g	0.00062 U	0.00062	0.0050	0.0084	N/A	N/A	N/A	7074061
22'34'66'-HexaCB-(150)	ng/g	0.00045 U	0.00045	0.0050	0.0061	N/A	N/A	N/A	7074061
22'3566'-HexaCB-(152)	ng/g	0.00044 U	0.00044	0.0050	0.013	N/A	N/A	N/A	7074061
HexaCB-(153)+(168)	ng/g	0.0637	0.00026	0.010	0.013	N/A	N/A	N/A	7074061
22'44'56'-HexaCB-(154)	ng/g	0.00053 U	0.00053	0.0050	0.012	N/A	N/A	N/A	7074061
22'44'66'-HexaCB-(155)	ng/g	0.00032 U	0.00032	0.0050	0.0087	N/A	N/A	N/A	7074061
HexaCB-(156)+(157)	ng/g	0.00840 J	0.00035	0.010	0.0086	0.0000300	0.000000252	N/A	7074061
233'44'6-HexaCB-(158)	ng/g	0.00613	0.00023	0.0050	0.0072	N/A	N/A	N/A	7074061
233'455'-HexaCB-(159)	ng/g	0.00068 J	0.00023	0.0050	0.0082	N/A	N/A	N/A	7074061
233'456-HexaCB-(160)	ng/g	0.00026 U	0.00026	0.0050	0.017	N/A	N/A	N/A	7074061

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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'45'6-HexaCB-(161)	ng/g	0.00024 U	0.00024	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'55'-HexaCB-(162)	ng/g	0.00022 U	0.00022	0.0050	0.0083	N/A	N/A	N/A	7074061
233'4'5'6-HexaCB-(164)	ng/g	0.00502	0.00024	0.0050	0.017	N/A	N/A	N/A	7074061
233'55'6-HexaCB-(165)	ng/g	0.00026 U	0.00026	0.0050	0.010	N/A	N/A	N/A	7074061
23'44'55'-HexaCB-(167)	ng/g	0.00291 J	0.00034	0.0050	0.0056	0.0000300	0.0000000873	N/A	7074061
33'44'55'-HexaCB-(169)	ng/g	0.00035 U	0.00035	0.0050	0.024	0.0300	0.0000105	N/A	7074061
22'33'44'5-HeptaCB-(170)	ng/g	0.0222	0.00031	0.0050	0.0042	N/A	N/A	N/A	7074061
HeptaCB-(171)+(173)	ng/g	0.00607 J	0.00031	0.010	0.011	N/A	N/A	N/A	7074061
22'33'455'-HeptaCB-(172)	ng/g	0.00383 J	0.00036	0.0050	0.0080	N/A	N/A	N/A	7074061
22'33'456'-HeptaCB-(174)	ng/g	0.0184	0.00028	0.0050	0.014	N/A	N/A	N/A	7074061
22'33'45'6-HeptaCB-(175)	ng/g	0.00082 J	0.00049	0.0050	0.0092	N/A	N/A	N/A	7074061
22'33'466'-HeptaCB-(176)	ng/g	0.00254 J	0.00035	0.0050	0.0098	N/A	N/A	N/A	7074061
22'33'45'6'-HeptaCB-(177)	ng/g	0.0130	0.00033	0.0050	0.0078	N/A	N/A	N/A	7074061
22'33'55'6-HeptaCB-(178)	ng/g	0.00382 J	0.00050	0.0050	0.010	N/A	N/A	N/A	7074061
22'33'566'-HeptaCB-(179)	ng/g	0.00794	0.00033	0.0050	0.0086	N/A	N/A	N/A	7074061
HeptaCB-(180)+(193)	ng/g	0.0519	0.00029	0.010	0.0085	N/A	N/A	N/A	7074061
22'344'56-HeptaCB-(181)	ng/g	0.00031 U	0.00031	0.0050	0.0080	N/A	N/A	N/A	7074061
22'344'56'-HeptaCB-(182)	ng/g	0.00046 U	0.00046	0.0050	0.0092	N/A	N/A	N/A	7074061
22'344'5'6-HeptaCB-(183)	ng/g	0.0134	0.00029	0.0050	0.028	N/A	N/A	N/A	7074061
22'344'66'-HeptaCB-(184)	ng/g	0.00031 U	0.00031	0.0050	0.010	N/A	N/A	N/A	7074061
22'3455'6-HeptaCB-(185)	ng/g	0.00028 U	0.00028	0.0050	0.022	N/A	N/A	N/A	7074061
22'34566'-HeptaCB-(186)	ng/g	0.00035 U	0.00035	0.0050	0.0086	N/A	N/A	N/A	7074061
22'34'55'6-HeptaCB-(187)	ng/g	0.0214	0.00045	0.0050	0.011	N/A	N/A	N/A	7074061
22'34'566'-HeptaCB-(188)	ng/g	0.00036 U	0.00036	0.0050	0.0047	N/A	N/A	N/A	7074061
233'44'55'-HeptaCB-(189)	ng/g	0.00087 U (1)	0.00087	0.0050	0.0041	0.0000300	0.0000000261	N/A	7074061
233'44'56-HeptaCB-(190)	ng/g	0.00425 J	0.00033	0.0050	0.0041	N/A	N/A	N/A	7074061
233'44'5'6-HeptaCB-(191)	ng/g	0.00114 J	0.00027	0.0050	0.0045	N/A	N/A	N/A	7074061
233'455'6-HeptaCB-(192)	ng/g	0.00028 U	0.00028	0.0050	0.0090	N/A	N/A	N/A	7074061
22'33'44'55'-OctaCB-(194)	ng/g	0.0121	0.00054	0.0050	0.0095	N/A	N/A	N/A	7074061
22'33'44'56-OctaCB-(195)	ng/g	0.00417 J	0.00051	0.0050	0.0094	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'56'-OctaCB-(196)	ng/g	0.00587	0.00069	0.0050	0.016	N/A	N/A	N/A	7074061
22'33'44'66'OctaCB-(197)	ng/g	0.00041 J	0.00039	0.0050	0.044	N/A	N/A	N/A	7074061
OctaCB-(198)+(199)	ng/g	0.0113	0.00062	0.010	0.014	N/A	N/A	N/A	7074061
22'33'4566'-OctaCB-(200)	ng/g	0.00119 J	0.00037	0.0050	0.032	N/A	N/A	N/A	7074061
22'33'45'66'-OctaCB-(201)	ng/g	0.00126 J	0.00037	0.0050	0.017	N/A	N/A	N/A	7074061
22'33'55'66'-OctaCB-(202)	ng/g	0.00243 J	0.00041	0.010	0.0081	N/A	N/A	N/A	7074061
22'344'55'6-OctaCB-(203)	ng/g	0.00652	0.00060	0.0050	0.011	N/A	N/A	N/A	7074061
22'344'566'-OctaCB-(204)	ng/g	0.00038 U	0.00038	0.0050	0.021	N/A	N/A	N/A	7074061
233'44'55'6-OctaCB-(205)	ng/g	0.00055 J	0.00051	0.0050	0.0096	N/A	N/A	N/A	7074061
22'33'44'55'6-NonaCB-(206)	ng/g	0.00769	0.00087	0.0050	0.0077	N/A	N/A	N/A	7074061
22'33'44'566'-NonaCB-(207)	ng/g	0.00069 U	0.00069	0.0050	0.0081	N/A	N/A	N/A	7074061
22'33'455'66'-NonaCB-(208)	ng/g	0.00231 J	0.00091	0.0050	0.0073	N/A	N/A	N/A	7074061
DecaCB-(209)	ng/g	0.0093	0.0017	0.0050	0.012	N/A	N/A	N/A	7074061
Total PCB	ng/g	1.05	N/A	N/A	N/A	N/A	N/A	N/A	7074061
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.0000363	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'55'6-NonaCB-(206)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'5-HeptaCB-(170)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'455'66'-NonaCB-(208)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'66'-OctaCB-(202)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'6-HeptaCB-(178)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'344'55'-HeptaCB-(180)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'34'566'-HeptaCB-(188)	%	87	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'44'66'-HexaCB-(155)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'466'-PentaCB-(104)	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'66'-TetraCB-(54)	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'6-TriCB-(19)	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'-DiCB-(4)	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'6-OctaCB-(205)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'-HeptaCB-(189)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ503							
Sampling Date		2020/10/15 12:20							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG06	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'44'-PentaCB-(105)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'55'-PentaCB-(111)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'55'-HexaCB-(167)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2344'5-PentaCB-(114)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'5-PentaCB-(118)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2'344'5-PentaCB-(123)	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2-MonoCB-(1)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'55'-HexaCB-(169)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'5-PentaCB-(126)	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'-TetraCB-(77)	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'5-TetraCB-(81)	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'-TriCB-(37)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-44'-DiCB-(15)	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-4-MonoCB-(3)	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-DecaCB-(209)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-HexaCB-(156)+(157)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00232	0.00025	0.0020	0.0026	N/A	N/A	N/A	7074061
3-MonoCB-(2)	ng/g	0.00216	0.00023	0.0020	0.0038	N/A	N/A	N/A	7074061
4-MonoCB-(3)	ng/g	0.00271 J	0.00025	0.0050	0.0035	N/A	N/A	N/A	7074061
22'-DiCB-(4)	ng/g	0.0046 U	0.0046	0.0050	0.0040	N/A	N/A	N/A	7074061
2,3-DiCB-(5)	ng/g	0.00051 U	0.00051	0.0050	0.015	N/A	N/A	N/A	7074061
2,3'-DiCB-(6)	ng/g	0.00097 J	0.00048	0.0020	0.0034	N/A	N/A	N/A	7074061
2,4-DiCB-(7)	ng/g	0.00046 U	0.00046	0.0020	0.0064	N/A	N/A	N/A	7074061
2,4'-DiCB-(8)	ng/g	0.00348 J	0.00047	0.0050	0.016	N/A	N/A	N/A	7074061
2,5-DiCB-(9)	ng/g	0.00054 U	0.00054	0.0020	0.0019	N/A	N/A	N/A	7074061
2,6-DiCB-(10)	ng/g	0.0071 U	0.0071	0.0050	0.0042	N/A	N/A	N/A	7074061
3,3'-DiCB-(11)	ng/g	0.00367 J	0.00052	0.0099	0.034	N/A	N/A	N/A	7074061
DiCB-(12)+(13)	ng/g	0.00092 J	0.00050	0.0050	0.011	N/A	N/A	N/A	7074061
3,5-DiCB-(14)	ng/g	0.00048 U	0.00048	0.0020	0.0033	N/A	N/A	N/A	7074061
4,4'-DiCB-(15)	ng/g	0.00418 J	0.00094	0.0050	0.0039	N/A	N/A	N/A	7074061
22'3-TriCB-(16)	ng/g	0.00252 J	0.00076	0.0050	0.013	N/A	N/A	N/A	7074061
22'4-TriCB-(17)	ng/g	0.00212	0.00047	0.0020	0.0040	N/A	N/A	N/A	7074061
TriCB-(18)+(30)	ng/g	0.00393 J	0.00038	0.0050	0.0052	N/A	N/A	N/A	7074061
22'6-TriCB-(19)	ng/g	0.00177 J	0.00030	0.0020	0.0052	N/A	N/A	N/A	7074061
TriCB-(20) + (28)	ng/g	0.0171	0.00030	0.0050	0.0090	N/A	N/A	N/A	7074061
TriCB-(21)+(33)	ng/g	0.00519	0.00030	0.0050	0.011	N/A	N/A	N/A	7074061
234'-TriCB-(22)	ng/g	0.00393	0.00031	0.0020	0.0049	N/A	N/A	N/A	7074061
235-TriCB-(23)	ng/g	0.00032 U	0.00032	0.0020	0.0046	N/A	N/A	N/A	7074061
236-TriCB-(24)	ng/g	0.00029 U	0.00029	0.0020	0.0090	N/A	N/A	N/A	7074061
23'4-TriCB-(25)	ng/g	0.00112 J	0.00028	0.0020	0.0064	N/A	N/A	N/A	7074061
TriCB-(26)+(29)	ng/g	0.00235 J	0.00031	0.0050	0.0087	N/A	N/A	N/A	7074061
23'6-TriCB-(27)	ng/g	0.00032 U	0.00032	0.0020	0.0065	N/A	N/A	N/A	7074061
24'5-TriCB-(31)	ng/g	0.0107	0.00029	0.0050	0.0038	N/A	N/A	N/A	7074061
24'6-TriCB-(32)	ng/g	0.0014 U (1)	0.0014	0.0020	0.0024	N/A	N/A	N/A	7074061
23'5'-TriCB-(34)	ng/g	0.00031 U	0.00031	0.0020	0.0060	N/A	N/A	N/A	7074061
33'4-TriCB-(35)	ng/g	0.00043 U (1)	0.00043	0.0020	0.0042	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00028 U	0.00028	0.0020	0.0029	N/A	N/A	N/A	7074061
344'-TriCB-(37)	ng/g	0.00667	0.00062	0.0020	0.0029	N/A	N/A	N/A	7074061
345-TriCB-(38)	ng/g	0.00034 U	0.00034	0.0020	0.0038	N/A	N/A	N/A	7074061
34'5-TriCB-(39)	ng/g	0.00031 U	0.00031	0.0020	0.0052	N/A	N/A	N/A	7074061
TetraCB-(40)+(41)+(71)	ng/g	0.00980 J	0.00033	0.0099	0.016	N/A	N/A	N/A	7074061
22'34'-TetraCB-(42)	ng/g	0.00511	0.00035	0.0050	0.014	N/A	N/A	N/A	7074061
22'35-TetraCB-(43)	ng/g	0.00037 U	0.00037	0.0050	0.019	N/A	N/A	N/A	7074061
TetraCB-(44)+(47)+(65)	ng/g	0.0221	0.00031	0.0099	0.041	N/A	N/A	N/A	7074061
TetraCB-(45)+(51)	ng/g	0.00268 J	0.00033	0.0050	0.018	N/A	N/A	N/A	7074061
22'36'-TetraCB-(46)	ng/g	0.00069 J	0.00037	0.0020	0.0090	N/A	N/A	N/A	7074061
22'45-TetraCB-(48)	ng/g	0.00224 J	0.00033	0.0050	0.0042	N/A	N/A	N/A	7074061
TetraCB-(49)+TetraCB-(69)	ng/g	0.0186	0.00030	0.0099	0.010	N/A	N/A	N/A	7074061
TetraCB-(50)+(53)	ng/g	0.00222 J	0.00032	0.0099	0.013	N/A	N/A	N/A	7074061
22'55'-TetraCB-(52)	ng/g	0.0250	0.00031	0.0050	0.016	N/A	N/A	N/A	7074061
22'66'-TetraCB-(54)	ng/g	0.0018 U	0.0018	0.0050	0.0096	N/A	N/A	N/A	7074061
233'4-TetraCB-(55)	ng/g	0.00035 U	0.00035	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'-Tetra CB(56)	ng/g	0.0104	0.00041	0.0050	0.0051	N/A	N/A	N/A	7074061
233'5-TetraCB-(57)	ng/g	0.00037 U	0.00037	0.0050	0.0056	N/A	N/A	N/A	7074061
233'5'-TetraCB-(58)	ng/g	0.00037 U	0.00037	0.0050	0.011	N/A	N/A	N/A	7074061
TetraCB-(59)+(62)+(75)	ng/g	0.00144 J	0.00025	0.0099	0.014	N/A	N/A	N/A	7074061
2344'-TetraCB -(60)	ng/g	0.00424 J	0.00040	0.0050	0.0053	N/A	N/A	N/A	7074061
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.0520	0.00038	0.020	0.022	N/A	N/A	N/A	7074061
234'5-TetraCB-(63)	ng/g	0.00126 J	0.00036	0.0050	0.0071	N/A	N/A	N/A	7074061
234'6-TetraCB-(64)	ng/g	0.00802	0.00027	0.0050	0.0047	N/A	N/A	N/A	7074061
23'44'-TetraCB-(66)	ng/g	0.0322	0.00037	0.0050	0.099	N/A	N/A	N/A	7074061
23'45-TetraCB-(67)	ng/g	0.00067 J	0.00033	0.0050	0.011	N/A	N/A	N/A	7074061
23'45'-TetraCB-(68)	ng/g	0.00068 J	0.00033	0.0050	0.0088	N/A	N/A	N/A	7074061
23'55'-TetraCB-(72)	ng/g	0.00085 J	0.00035	0.0050	0.0086	N/A	N/A	N/A	7074061
23'5'6-TetraCB-(73)	ng/g	0.00026 U	0.00026	0.0050	0.019	N/A	N/A	N/A	7074061
33'44'-TetraCB-(77)	ng/g	0.00310 J	0.00067	0.0050	0.0063	0.000100	0.000000310	N/A	7074061
33'45-TetraCB-(78)	ng/g	0.00043 U	0.00043	0.0050	0.0065	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.00094 J	0.00037	0.0050	0.0058	N/A	N/A	N/A	7074061
33'55'-TetraCB-(80)	ng/g	0.00032 U	0.00032	0.0050	0.0061	N/A	N/A	N/A	7074061
344'5-TetraCB-(81)	ng/g	0.00066 U	0.00066	0.0050	0.0058	0.000300	0.000000198	N/A	7074061
22'33'4-PentaCB-(82)	ng/g	0.00660	0.00062	0.0050	0.0048	N/A	N/A	N/A	7074061
PentaCB-(83)+(99)	ng/g	0.0453	0.00058	0.0099	0.016	N/A	N/A	N/A	7074061
22'33'6-PentaCB-(84)	ng/g	0.0131	0.00059	0.0020	0.0077	N/A	N/A	N/A	7074061
PentaCB-(85)+(116)+(117)	ng/g	0.00795 J	0.00047	0.0099	0.027	N/A	N/A	N/A	7074061
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	0.0398	0.00048	0.020	0.029	N/A	N/A	N/A	7074061
PentaCB-(88)+(91)	ng/g	0.00982	0.00054	0.0050	0.013	N/A	N/A	N/A	7074061
22'346'-PentaCB-(89)	ng/g	0.00059 U	0.00059	0.0050	0.0080	N/A	N/A	N/A	7074061
PentaCB-(90)+(101)+(113)	ng/g	0.0778	0.00048	0.020	0.011	N/A	N/A	N/A	7074061
22'355'-PentaCB-(92)	ng/g	0.0147	0.00056	0.0050	0.0044	N/A	N/A	N/A	7074061
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.00278 J	0.00053	0.020	0.024	N/A	N/A	N/A	7074061
22'356'-PentaCB-(94)	ng/g	0.00057 U	0.00057	0.0050	0.0063	N/A	N/A	N/A	7074061
22'35'6-PentaCB-(95)	ng/g	0.0469	0.00052	0.0050	0.0088	N/A	N/A	N/A	7074061
22'366'-PentaCB-(96)	ng/g	0.0011 U	0.0011	0.0050	0.010	N/A	N/A	N/A	7074061
22'45'6-PentaCB-(103)	ng/g	0.00099 J	0.00048	0.0050	0.0061	N/A	N/A	N/A	7074061
22'466'-PentaCB-(104)	ng/g	0.00052 U	0.00052	0.0050	0.0056	N/A	N/A	N/A	7074061
233'44'-PentaCB-(105)	ng/g	0.0315	0.00034	0.0050	0.0044	0.0000300	0.000000945	N/A	7074061
233'45-PentaCB-(106)	ng/g	0.00022 U	0.00022	0.0050	0.0036	N/A	N/A	N/A	7074061
233'4'5-PentaCB-(107)	ng/g	0.00726	0.00023	0.0050	0.017	N/A	N/A	N/A	7074061
PentaCB-(108)+(124)	ng/g	0.00268 J	0.00024	0.0099	0.011	N/A	N/A	N/A	7074061
PentaCB-(110)+(115)	ng/g	0.0952	0.00045	0.0099	0.012	N/A	N/A	N/A	7074061
233'55'-PentaCB-(111)	ng/g	0.00042 U	0.00042	0.0050	0.0056	N/A	N/A	N/A	7074061
233'56-PentaCB-(112)	ng/g	0.00039 U	0.00039	0.0050	0.0078	N/A	N/A	N/A	7074061
2344'5-PentaCB-(114)	ng/g	0.00170 J	0.00033	0.0050	0.0042	0.0000300	0.0000000510	N/A	7074061
23'44'5-PentaCB-(118)	ng/g	0.101	0.00034	0.00099	0.0066	0.0000300	0.00000303	N/A	7074061
23'455'-PentaCB-(120)	ng/g	0.00042 U	0.00042	0.0050	0.0064	N/A	N/A	N/A	7074061
23'45'6-PentaCB-(121)	ng/g	0.00040 U	0.00040	0.0050	0.0063	N/A	N/A	N/A	7074061
233'4'5'-PentaCB-(122)	ng/g	0.00137 J	0.00027	0.0050	0.0066	N/A	N/A	N/A	7074061
23'44'5'-PentaCB-(123)	ng/g	0.00147 J	0.00037	0.0050	0.014	0.0000300	0.0000000441	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'5-PentaCB-(126)	ng/g	0.00032 U	0.00032	0.0050	0.0030	0.100	0.0000320	N/A	7074061
33'455'-PentaCB-(127)	ng/g	0.00027 U	0.00027	0.0050	0.0032	N/A	N/A	N/A	7074061
HexaCB-(128)+(166)	ng/g	0.0175	0.00057	0.0099	0.021	N/A	N/A	N/A	7074061
HexaCB-(129)+(138)+(163)	ng/g	0.148	0.00059	0.020	0.037	N/A	N/A	N/A	7074061
22'33'45'-HexaCB-(130)	ng/g	0.00770	0.00069	0.0050	0.0051	N/A	N/A	N/A	7074061
22'33'46-HexaCB-(131)	ng/g	0.00140 J	0.00065	0.0050	0.0099	N/A	N/A	N/A	7074061
22'33'46'-HexaCB-(132)	ng/g	0.0406	0.00061	0.0050	0.0087	N/A	N/A	N/A	7074061
22'33'55'-HexaCB-(133)	ng/g	0.00226 J	0.00057	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(134)+(143)	ng/g	0.00538 J	0.00067	0.0099	0.017	N/A	N/A	N/A	7074061
HexaCB-(135)+(151)	ng/g	0.0356	0.0019	0.020	0.014	N/A	N/A	N/A	7074061
22'33'66'-HexaCB-(136)	ng/g	0.0108	0.0014	0.0050	0.0083	N/A	N/A	N/A	7074061
22'344'5-HexaCB-(137)	ng/g	0.00449 J	0.00067	0.0099	0.030	N/A	N/A	N/A	7074061
HexaCB-(139)+(140)	ng/g	0.0015 U (1)	0.0015	0.0099	0.016	N/A	N/A	N/A	7074061
22'3455'-HexaCB-(141)	ng/g	0.0214	0.00052	0.0050	0.012	N/A	N/A	N/A	7074061
22'3456-HexaCB-(142)	ng/g	0.00059 U	0.00059	0.0050	0.0088	N/A	N/A	N/A	7074061
22'345'6-HexaCB-(144)	ng/g	0.0039 J	0.0020	0.0050	0.0072	N/A	N/A	N/A	7074061
22'3466'-HexaCB-(145)	ng/g	0.0014 U	0.0014	0.0050	0.0082	N/A	N/A	N/A	7074061
22'34'55'-HexaCB-(146)	ng/g	0.0204	0.00051	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(147)+(149)	ng/g	0.108	0.00055	0.0099	0.019	N/A	N/A	N/A	7074061
22'34'56'-HexaCB-(148)	ng/g	0.0019 U	0.0019	0.0050	0.0084	N/A	N/A	N/A	7074061
22'34'66'-HexaCB-(150)	ng/g	0.0013 U	0.0013	0.0050	0.0061	N/A	N/A	N/A	7074061
22'3566'-HexaCB-(152)	ng/g	0.0013 U	0.0013	0.0050	0.013	N/A	N/A	N/A	7074061
HexaCB-(153)+(168)	ng/g	0.120	0.00046	0.0099	0.013	N/A	N/A	N/A	7074061
22'44'56'-HexaCB-(154)	ng/g	0.0016 J	0.0016	0.0050	0.012	N/A	N/A	N/A	7074061
22'44'66'-HexaCB-(155)	ng/g	0.00096 U	0.00096	0.0050	0.0087	N/A	N/A	N/A	7074061
HexaCB-(156)+(157)	ng/g	0.0153	0.00075	0.0099	0.0086	0.0000300	0.000000459	N/A	7074061
233'44'6-HexaCB-(158)	ng/g	0.0116	0.00041	0.0050	0.0072	N/A	N/A	N/A	7074061
233'455'-HexaCB-(159)	ng/g	0.00158 J	0.00050	0.0050	0.0082	N/A	N/A	N/A	7074061
233'456-HexaCB-(160)	ng/g	0.00046 U	0.00046	0.0050	0.017	N/A	N/A	N/A	7074061
233'45'6-HexaCB-(161)	ng/g	0.00042 U	0.00042	0.0050	0.011	N/A	N/A	N/A	7074061

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'55'-HexaCB-(162)	ng/g	0.00050 J	0.00047	0.0050	0.0083	N/A	N/A	N/A	7074061
233'4'5'6-HexaCB-(164)	ng/g	0.00866	0.00042	0.0050	0.017	N/A	N/A	N/A	7074061
233'55'6-HexaCB-(165)	ng/g	0.00045 U	0.00045	0.0050	0.010	N/A	N/A	N/A	7074061
23'44'55'-HexaCB-(167)	ng/g	0.00578	0.00072	0.0050	0.0056	0.0000300	0.000000173	N/A	7074061
33'44'55'-HexaCB-(169)	ng/g	0.00075 U	0.00075	0.0050	0.024	0.0300	0.0000225	N/A	7074061
22'33'44'5-HeptaCB-(170)	ng/g	0.0386	0.00050	0.0050	0.0042	N/A	N/A	N/A	7074061
HeptaCB-(171)+(173)	ng/g	0.0113	0.00051	0.0099	0.011	N/A	N/A	N/A	7074061
22'33'455'-HeptaCB-(172)	ng/g	0.00719	0.00059	0.0050	0.0080	N/A	N/A	N/A	7074061
22'33'456'-HeptaCB-(174)	ng/g	0.0387	0.00045	0.0050	0.014	N/A	N/A	N/A	7074061
22'33'45'6-HeptaCB-(175)	ng/g	0.00160 J	0.00086	0.0050	0.0092	N/A	N/A	N/A	7074061
22'33'466'-HeptaCB-(176)	ng/g	0.00418 J	0.00061	0.0050	0.0098	N/A	N/A	N/A	7074061
22'33'45'6'-HeptaCB-(177)	ng/g	0.0238	0.00054	0.0050	0.0078	N/A	N/A	N/A	7074061
22'33'55'6-HeptaCB-(178)	ng/g	0.00713	0.00087	0.0050	0.010	N/A	N/A	N/A	7074061
22'33'566'-HeptaCB-(179)	ng/g	0.0125	0.00058	0.0050	0.0086	N/A	N/A	N/A	7074061
HeptaCB-(180)+(193)	ng/g	0.0936	0.00048	0.0099	0.0085	N/A	N/A	N/A	7074061
22'344'56-HeptaCB-(181)	ng/g	0.00051 U	0.00051	0.0050	0.0080	N/A	N/A	N/A	7074061
22'344'56'-HeptaCB-(182)	ng/g	0.00081 U	0.00081	0.0050	0.0092	N/A	N/A	N/A	7074061
22'344'5'6-HeptaCB-(183)	ng/g	0.0283	0.00047	0.0050	0.028	N/A	N/A	N/A	7074061
22'344'66'-HeptaCB-(184)	ng/g	0.00054 U	0.00054	0.0050	0.010	N/A	N/A	N/A	7074061
22'3455'6-HeptaCB-(185)	ng/g	0.00046 U	0.00046	0.0050	0.022	N/A	N/A	N/A	7074061
22'34566'-HeptaCB-(186)	ng/g	0.00062 U	0.00062	0.0050	0.0086	N/A	N/A	N/A	7074061
22'34'55'6-HeptaCB-(187)	ng/g	0.0387	0.00078	0.0050	0.011	N/A	N/A	N/A	7074061
22'34'566'-HeptaCB-(188)	ng/g	0.00062 U	0.00062	0.0050	0.0047	N/A	N/A	N/A	7074061
233'44'55'-HeptaCB-(189)	ng/g	0.00179 J	0.00050	0.0050	0.0041	0.0000300	0.0000000537	N/A	7074061
233'44'56-HeptaCB-(190)	ng/g	0.00837	0.00054	0.0050	0.0041	N/A	N/A	N/A	7074061
233'44'5'6-HeptaCB-(191)	ng/g	0.00190 J	0.00044	0.0050	0.0045	N/A	N/A	N/A	7074061
233'455'6-HeptaCB-(192)	ng/g	0.00046 U	0.00046	0.0050	0.0090	N/A	N/A	N/A	7074061
22'33'44'55'-OctaCB-(194)	ng/g	0.0218	0.00079	0.0050	0.0095	N/A	N/A	N/A	7074061
22'33'44'56-OctaCB-(195)	ng/g	0.00823	0.00073	0.0050	0.0094	N/A	N/A	N/A	7074061
22'33'44'56'-OctaCB-(196)	ng/g	0.0114	0.0012	0.0050	0.016	N/A	N/A	N/A	7074061
22'33'44'66'OctaCB-(197)	ng/g	0.00067 U	0.00067	0.0050	0.044	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
OctaCB-(198)+(199)	ng/g	0.0256	0.0011	0.0099	0.014	N/A	N/A	N/A	7074061
22'33'4566'-OctaCB-(200)	ng/g	0.00233 J	0.00064	0.0050	0.032	N/A	N/A	N/A	7074061
22'33'45'66'-OctaCB-(201)	ng/g	0.00281 J	0.00064	0.0050	0.017	N/A	N/A	N/A	7074061
22'33'55'66'-OctaCB-(202)	ng/g	0.00595 J	0.00071	0.0099	0.0081	N/A	N/A	N/A	7074061
22'344'55'6-OctaCB-(203)	ng/g	0.0141	0.0010	0.0050	0.011	N/A	N/A	N/A	7074061
22'344'566'-OctaCB-(204)	ng/g	0.00066 U	0.00066	0.0050	0.021	N/A	N/A	N/A	7074061
233'44'55'6-OctaCB-(205)	ng/g	0.00138 J	0.00074	0.0050	0.0096	N/A	N/A	N/A	7074061
22'33'44'55'6-NonaCB-(206)	ng/g	0.0329	0.00097	0.0050	0.0077	N/A	N/A	N/A	7074061
22'33'44'566'-NonaCB-(207)	ng/g	0.00258 J	0.00077	0.0050	0.0081	N/A	N/A	N/A	7074061
22'33'455'66'-NonaCB-(208)	ng/g	0.0126	0.0010	0.0050	0.0073	N/A	N/A	N/A	7074061
DecaCB-(209)	ng/g	0.0378	0.0029	0.0050	0.012	N/A	N/A	N/A	7074061
Total PCB	ng/g	1.88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.0000598	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'55'6-NonaCB-(206)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'5-HeptaCB-(170)	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'455'66'-NonaCB-(208)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'66'-OctaCB-(202)	%	59	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'6-HeptaCB-(178)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'344'55'-HeptaCB-(180)	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'34'566'-HeptaCB-(188)	%	59	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'44'66'-HexaCB-(155)	%	43	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'466'-PentaCB-(104)	%	39	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'66'-TetraCB-(54)	%	39	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'6-TriCB-(19)	%	45	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'-DiCB-(4)	%	45	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'6-OctaCB-(205)	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'-HeptaCB-(189)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'-PentaCB-(105)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'55'-PentaCB-(111)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ504							
Sampling Date		2020/10/15 14:45							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	SG07	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-23'44'55'-HexaCB-(167)	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2344'5-PentaCB-(114)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'5-PentaCB-(118)	%	101	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2'344'5-PentaCB-(123)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2-MonoCB-(1)	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'55'-HexaCB-(169)	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'5-PentaCB-(126)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'-TetraCB-(77)	%	140	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'5-TetraCB-(81)	%	137	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'-TriCB-(37)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-44'-DiCB-(15)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-4-MonoCB-(3)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-DecaCB-(209)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-HexaCB-(156)+(157)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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QC Batch = Quality Control Batch
N/A = Not Applicable

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00215	0.00024	0.0020	0.0026	N/A	N/A	N/A	7074061
3-MonoCB-(2)	ng/g	0.00164 J	0.00022	0.0020	0.0038	N/A	N/A	N/A	7074061
4-MonoCB-(3)	ng/g	0.00250 J	0.00024	0.0050	0.0035	N/A	N/A	N/A	7074061
22'-DiCB-(4)	ng/g	0.0048 U	0.0048	0.0050	0.0040	N/A	N/A	N/A	7074061
2,3-DiCB-(5)	ng/g	0.00042 U	0.00042	0.0050	0.015	N/A	N/A	N/A	7074061
2,3'-DiCB-(6)	ng/g	0.00130 J	0.00040	0.0020	0.0034	N/A	N/A	N/A	7074061
2,4-DiCB-(7)	ng/g	0.00038 U	0.00038	0.0020	0.0064	N/A	N/A	N/A	7074061
2,4'-DiCB-(8)	ng/g	0.00448 J	0.00039	0.0050	0.016	N/A	N/A	N/A	7074061
2,5-DiCB-(9)	ng/g	0.00044 U	0.00044	0.0020	0.0019	N/A	N/A	N/A	7074061
2,6-DiCB-(10)	ng/g	0.0073 U	0.0073	0.0050	0.0042	N/A	N/A	N/A	7074061
3,3'-DiCB-(11)	ng/g	0.0037 U (1)	0.0037	0.010	0.034	N/A	N/A	N/A	7074061
DiCB-(12)+(13)	ng/g	0.00090 U (1)	0.00090	0.0050	0.011	N/A	N/A	N/A	7074061
3,5-DiCB-(14)	ng/g	0.00040 U	0.00040	0.0020	0.0033	N/A	N/A	N/A	7074061
4,4'-DiCB-(15)	ng/g	0.00477 J	0.00077	0.0050	0.0039	N/A	N/A	N/A	7074061
22'3-TriCB-(16)	ng/g	0.00293 J	0.00076	0.0050	0.013	N/A	N/A	N/A	7074061
22'4-TriCB-(17)	ng/g	0.00321	0.00048	0.0020	0.0040	N/A	N/A	N/A	7074061
TriCB-(18)+(30)	ng/g	0.00520	0.00038	0.0050	0.0052	N/A	N/A	N/A	7074061
22'6-TriCB-(19)	ng/g	0.00257	0.00031	0.0020	0.0052	N/A	N/A	N/A	7074061
TriCB-(20) + (28)	ng/g	0.0206	0.00025	0.0050	0.0090	N/A	N/A	N/A	7074061
TriCB-(21)+(33)	ng/g	0.00649	0.00025	0.0050	0.011	N/A	N/A	N/A	7074061
234'-TriCB-(22)	ng/g	0.00479	0.00026	0.0020	0.0049	N/A	N/A	N/A	7074061
235-TriCB-(23)	ng/g	0.00027 U	0.00027	0.0020	0.0046	N/A	N/A	N/A	7074061
236-TriCB-(24)	ng/g	0.00030 U	0.00030	0.0020	0.0090	N/A	N/A	N/A	7074061
23'4-TriCB-(25)	ng/g	0.00125 J	0.00024	0.0020	0.0064	N/A	N/A	N/A	7074061
TriCB-(26)+(29)	ng/g	0.00262 J	0.00026	0.0050	0.0087	N/A	N/A	N/A	7074061
23'6-TriCB-(27)	ng/g	0.00044 J	0.00032	0.0020	0.0065	N/A	N/A	N/A	7074061
24'5-TriCB-(31)	ng/g	0.0127	0.00024	0.0050	0.0038	N/A	N/A	N/A	7074061
24'6-TriCB-(32)	ng/g	0.00213	0.00031	0.0020	0.0024	N/A	N/A	N/A	7074061
23'5'-TriCB-(34)	ng/g	0.00026 U	0.00026	0.0020	0.0060	N/A	N/A	N/A	7074061
33'4-TriCB-(35)	ng/g	0.00028 U	0.00028	0.0020	0.0042	N/A	N/A	N/A	7074061

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QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00024 U	0.00024	0.0020	0.0029	N/A	N/A	N/A	7074061
344'-TriCB-(37)	ng/g	0.00794	0.00051	0.0020	0.0029	N/A	N/A	N/A	7074061
345-TriCB-(38)	ng/g	0.00029 U	0.00029	0.0020	0.0038	N/A	N/A	N/A	7074061
34'5-TriCB-(39)	ng/g	0.00025 U	0.00025	0.0020	0.0052	N/A	N/A	N/A	7074061
TetraCB-(40)+(41)+(71)	ng/g	0.0119	0.00042	0.010	0.016	N/A	N/A	N/A	7074061
22'34'-TetraCB-(42)	ng/g	0.00593	0.00044	0.0050	0.014	N/A	N/A	N/A	7074061
22'35-TetraCB-(43)	ng/g	0.00046 U	0.00046	0.0050	0.019	N/A	N/A	N/A	7074061
TetraCB-(44)+(47)+(65)	ng/g	0.0236	0.00038	0.010	0.041	N/A	N/A	N/A	7074061
TetraCB-(45)+(51)	ng/g	0.00304 J	0.00042	0.0050	0.018	N/A	N/A	N/A	7074061
22'36'-TetraCB-(46)	ng/g	0.00093 J	0.00046	0.0020	0.0090	N/A	N/A	N/A	7074061
22'45-TetraCB-(48)	ng/g	0.00225 J	0.00041	0.0050	0.0042	N/A	N/A	N/A	7074061
TetraCB-(49)+TetraCB-(69)	ng/g	0.0200	0.00037	0.010	0.010	N/A	N/A	N/A	7074061
TetraCB-(50)+(53)	ng/g	0.00261 J	0.00040	0.010	0.013	N/A	N/A	N/A	7074061
22'55'-TetraCB-(52)	ng/g	0.0277	0.00039	0.0050	0.016	N/A	N/A	N/A	7074061
22'66'-TetraCB-(54)	ng/g	0.0025 U	0.0025	0.0050	0.0096	N/A	N/A	N/A	7074061
233'4-TetraCB-(55)	ng/g	0.00032 U	0.00032	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'-Tetra CB(56)	ng/g	0.0131	0.00037	0.0050	0.0051	N/A	N/A	N/A	7074061
233'5-TetraCB-(57)	ng/g	0.00034 U	0.00034	0.0050	0.0056	N/A	N/A	N/A	7074061
233'5'-TetraCB-(58)	ng/g	0.00034 U	0.00034	0.0050	0.011	N/A	N/A	N/A	7074061
TetraCB-(59)+(62)+(75)	ng/g	0.00175 J	0.00032	0.010	0.014	N/A	N/A	N/A	7074061
2344'-TetraCB -(60)	ng/g	0.00566	0.00037	0.0050	0.0053	N/A	N/A	N/A	7074061
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.0610	0.00035	0.020	0.022	N/A	N/A	N/A	7074061
234'5-TetraCB-(63)	ng/g	0.00115 J	0.00033	0.0050	0.0071	N/A	N/A	N/A	7074061
234'6-TetraCB-(64)	ng/g	0.00936	0.00034	0.0050	0.0047	N/A	N/A	N/A	7074061
23'44'-TetraCB-(66)	ng/g	0.0386	0.00034	0.0050	0.099	N/A	N/A	N/A	7074061
23'45-TetraCB-(67)	ng/g	0.00046 J	0.00030	0.0050	0.011	N/A	N/A	N/A	7074061
23'45'-TetraCB-(68)	ng/g	0.00089 J	0.00030	0.0050	0.0088	N/A	N/A	N/A	7074061
23'55'-TetraCB-(72)	ng/g	0.00110 J	0.00033	0.0050	0.0086	N/A	N/A	N/A	7074061
23'5'6-TetraCB-(73)	ng/g	0.00033 U	0.00033	0.0050	0.019	N/A	N/A	N/A	7074061
33'44'-TetraCB-(77)	ng/g	0.00409 J	0.00061	0.0050	0.0063	0.000100	0.000000409	N/A	7074061
33'45-TetraCB-(78)	ng/g	0.00039 U	0.00039	0.0050	0.0065	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.00089 J	0.00034	0.0050	0.0058	N/A	N/A	N/A	7074061
33'55'-TetraCB-(80)	ng/g	0.00029 U	0.00029	0.0050	0.0061	N/A	N/A	N/A	7074061
344'5-TetraCB-(81)	ng/g	0.00061 U	0.00061	0.0050	0.0058	0.000300	0.000000183	N/A	7074061
22'33'4-PentaCB-(82)	ng/g	0.00741	0.00057	0.0050	0.0048	N/A	N/A	N/A	7074061
PentaCB-(83)+(99)	ng/g	0.0547	0.00053	0.010	0.016	N/A	N/A	N/A	7074061
22'33'6-PentaCB-(84)	ng/g	0.0143	0.00054	0.0020	0.0077	N/A	N/A	N/A	7074061
PentaCB-(85)+(116)+(117)	ng/g	0.00788 J	0.00044	0.010	0.027	N/A	N/A	N/A	7074061
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	0.0478	0.00044	0.020	0.029	N/A	N/A	N/A	7074061
PentaCB-(88)+(91)	ng/g	0.0103	0.00049	0.0050	0.013	N/A	N/A	N/A	7074061
22'346'-PentaCB-(89)	ng/g	0.00054 U	0.00054	0.0050	0.0080	N/A	N/A	N/A	7074061
PentaCB-(90)+(101)+(113)	ng/g	0.105	0.00044	0.020	0.011	N/A	N/A	N/A	7074061
22'355'-PentaCB-(92)	ng/g	0.0202	0.00051	0.0050	0.0044	N/A	N/A	N/A	7074061
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.00328 J	0.00049	0.020	0.024	N/A	N/A	N/A	7074061
22'356'-PentaCB-(94)	ng/g	0.00052 U	0.00052	0.0050	0.0063	N/A	N/A	N/A	7074061
22'35'6-PentaCB-(95)	ng/g	0.0614	0.00048	0.0050	0.0088	N/A	N/A	N/A	7074061
22'366'-PentaCB-(96)	ng/g	0.0016 U	0.0016	0.0050	0.010	N/A	N/A	N/A	7074061
22'45'6-PentaCB-(103)	ng/g	0.00158 J	0.00044	0.0050	0.0061	N/A	N/A	N/A	7074061
22'466'-PentaCB-(104)	ng/g	0.00072 U	0.00072	0.0050	0.0056	N/A	N/A	N/A	7074061
233'44'-PentaCB-(105)	ng/g	0.0351	0.00054	0.0050	0.0044	0.0000300	0.00000105	N/A	7074061
233'45-PentaCB-(106)	ng/g	0.00035 U	0.00035	0.0050	0.0036	N/A	N/A	N/A	7074061
233'4'5-PentaCB-(107)	ng/g	0.00927	0.00037	0.0050	0.017	N/A	N/A	N/A	7074061
PentaCB-(108)+(124)	ng/g	0.00309 J	0.00038	0.010	0.011	N/A	N/A	N/A	7074061
PentaCB-(110)+(115)	ng/g	0.119	0.00041	0.010	0.012	N/A	N/A	N/A	7074061
233'55'-PentaCB-(111)	ng/g	0.00039 U	0.00039	0.0050	0.0056	N/A	N/A	N/A	7074061
233'56-PentaCB-(112)	ng/g	0.00035 U	0.00035	0.0050	0.0078	N/A	N/A	N/A	7074061
2344'5-PentaCB-(114)	ng/g	0.00207 J	0.00053	0.0050	0.0042	0.0000300	0.0000000621	N/A	7074061
23'44'5-PentaCB-(118)	ng/g	0.122	0.00055	0.0010	0.0066	0.0000300	0.00000366	N/A	7074061
23'455'-PentaCB-(120)	ng/g	0.00090 J	0.00039	0.0050	0.0064	N/A	N/A	N/A	7074061
23'45'6-PentaCB-(121)	ng/g	0.00037 U	0.00037	0.0050	0.0063	N/A	N/A	N/A	7074061
233'4'5'-PentaCB-(122)	ng/g	0.00159 J	0.00043	0.0050	0.0066	N/A	N/A	N/A	7074061
23'44'5'-PentaCB-(123)	ng/g	0.00086 J	0.00058	0.0050	0.014	0.0000300	0.0000000258	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'5-PentaCB-(126)	ng/g	0.00050 U	0.00050	0.0050	0.0030	0.100	0.0000500	N/A	7074061
33'455'-PentaCB-(127)	ng/g	0.00043 U	0.00043	0.0050	0.0032	N/A	N/A	N/A	7074061
HexaCB-(128)+(166)	ng/g	0.0192	0.00058	0.010	0.021	N/A	N/A	N/A	7074061
HexaCB-(129)+(138)+(163)	ng/g	0.195	0.00060	0.020	0.037	N/A	N/A	N/A	7074061
22'33'45'-HexaCB-(130)	ng/g	0.00989	0.00070	0.0050	0.0051	N/A	N/A	N/A	7074061
22'33'46-HexaCB-(131)	ng/g	0.00158 J	0.00066	0.0050	0.0099	N/A	N/A	N/A	7074061
22'33'46'-HexaCB-(132)	ng/g	0.0543	0.00062	0.0050	0.0087	N/A	N/A	N/A	7074061
22'33'55'-HexaCB-(133)	ng/g	0.00282 J	0.00058	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(134)+(143)	ng/g	0.00726 J	0.00068	0.010	0.017	N/A	N/A	N/A	7074061
HexaCB-(135)+(151)	ng/g	0.0562	0.0023	0.020	0.014	N/A	N/A	N/A	7074061
22'33'66'-HexaCB-(136)	ng/g	0.0164	0.0017	0.0050	0.0083	N/A	N/A	N/A	7074061
22'344'5-HexaCB-(137)	ng/g	0.00446 J	0.00068	0.010	0.030	N/A	N/A	N/A	7074061
HexaCB-(139)+(140)	ng/g	0.00211 J	0.00052	0.010	0.016	N/A	N/A	N/A	7074061
22'3455'-HexaCB-(141)	ng/g	0.0312	0.00053	0.0050	0.012	N/A	N/A	N/A	7074061
22'3456-HexaCB-(142)	ng/g	0.00060 U	0.00060	0.0050	0.0088	N/A	N/A	N/A	7074061
22'345'6-HexaCB-(144)	ng/g	0.0065	0.0024	0.0050	0.0072	N/A	N/A	N/A	7074061
22'3466'-HexaCB-(145)	ng/g	0.0017 U	0.0017	0.0050	0.0082	N/A	N/A	N/A	7074061
22'34'55'-HexaCB-(146)	ng/g	0.0294	0.00051	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(147)+(149)	ng/g	0.160	0.00056	0.010	0.019	N/A	N/A	N/A	7074061
22'34'56'-HexaCB-(148)	ng/g	0.0023 U	0.0023	0.0050	0.0084	N/A	N/A	N/A	7074061
22'34'66'-HexaCB-(150)	ng/g	0.0016 U	0.0016	0.0050	0.0061	N/A	N/A	N/A	7074061
22'3566'-HexaCB-(152)	ng/g	0.0016 U	0.0016	0.0050	0.013	N/A	N/A	N/A	7074061
HexaCB-(153)+(168)	ng/g	0.170	0.00047	0.010	0.013	N/A	N/A	N/A	7074061
22'44'56'-HexaCB-(154)	ng/g	0.0024 J	0.0019	0.0050	0.012	N/A	N/A	N/A	7074061
22'44'66'-HexaCB-(155)	ng/g	0.0012 U	0.0012	0.0050	0.0087	N/A	N/A	N/A	7074061
HexaCB-(156)+(157)	ng/g	0.0171	0.00070	0.010	0.0086	0.0000300	0.000000513	N/A	7074061
233'44'6-HexaCB-(158)	ng/g	0.013 U (1)	0.013	0.0050	0.0072	N/A	N/A	N/A	7074061
233'455'-HexaCB-(159)	ng/g	0.00207 J	0.00046	0.0050	0.0082	N/A	N/A	N/A	7074061
233'456-HexaCB-(160)	ng/g	0.00047 U	0.00047	0.0050	0.017	N/A	N/A	N/A	7074061
233'45'6-HexaCB-(161)	ng/g	0.00043 U	0.00043	0.0050	0.011	N/A	N/A	N/A	7074061

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'55'-HexaCB-(162)	ng/g	0.00045 J	0.00043	0.0050	0.0083	N/A	N/A	N/A	7074061
233'4'5'6-HexaCB-(164)	ng/g	0.0119	0.00042	0.0050	0.017	N/A	N/A	N/A	7074061
233'55'6-HexaCB-(165)	ng/g	0.00046 U	0.00046	0.0050	0.010	N/A	N/A	N/A	7074061
23'44'55'-HexaCB-(167)	ng/g	0.00648	0.00067	0.0050	0.0056	0.0000300	0.000000194	N/A	7074061
33'44'55'-HexaCB-(169)	ng/g	0.00070 U	0.00070	0.0050	0.024	0.0300	0.0000210	N/A	7074061
22'33'44'5-HeptaCB-(170)	ng/g	0.0548	0.00064	0.0050	0.0042	N/A	N/A	N/A	7074061
HeptaCB-(171)+(173)	ng/g	0.0156	0.00065	0.010	0.011	N/A	N/A	N/A	7074061
22'33'455'-HeptaCB-(172)	ng/g	0.00994	0.00075	0.0050	0.0080	N/A	N/A	N/A	7074061
22'33'456'-HeptaCB-(174)	ng/g	0.0576	0.00058	0.0050	0.014	N/A	N/A	N/A	7074061
22'33'45'6-HeptaCB-(175)	ng/g	0.00197 J	0.00099	0.0050	0.0092	N/A	N/A	N/A	7074061
22'33'466'-HeptaCB-(176)	ng/g	0.00612	0.00070	0.0050	0.0098	N/A	N/A	N/A	7074061
22'33'45'6'-HeptaCB-(177)	ng/g	0.0362	0.00068	0.0050	0.0078	N/A	N/A	N/A	7074061
22'33'55'6-HeptaCB-(178)	ng/g	0.0107	0.0010	0.0050	0.010	N/A	N/A	N/A	7074061
22'33'566'-HeptaCB-(179)	ng/g	0.0194	0.00067	0.0050	0.0086	N/A	N/A	N/A	7074061
HeptaCB-(180)+(193)	ng/g	0.138	0.00061	0.010	0.0085	N/A	N/A	N/A	7074061
22'344'56-HeptaCB-(181)	ng/g	0.00064 U	0.00064	0.0050	0.0080	N/A	N/A	N/A	7074061
22'344'56'-HeptaCB-(182)	ng/g	0.00094 U	0.00094	0.0050	0.0092	N/A	N/A	N/A	7074061
22'344'5'6-HeptaCB-(183)	ng/g	0.0411	0.00060	0.0050	0.028	N/A	N/A	N/A	7074061
22'344'66'-HeptaCB-(184)	ng/g	0.00063 U	0.00063	0.0050	0.010	N/A	N/A	N/A	7074061
22'3455'6-HeptaCB-(185)	ng/g	0.00058 U	0.00058	0.0050	0.022	N/A	N/A	N/A	7074061
22'34566'-HeptaCB-(186)	ng/g	0.00072 U	0.00072	0.0050	0.0086	N/A	N/A	N/A	7074061
22'34'55'6-HeptaCB-(187)	ng/g	0.0568	0.00091	0.0050	0.011	N/A	N/A	N/A	7074061
22'34'566'-HeptaCB-(188)	ng/g	0.00072 U	0.00072	0.0050	0.0047	N/A	N/A	N/A	7074061
233'44'55'-HeptaCB-(189)	ng/g	0.00217 J	0.00041	0.0050	0.0041	0.0000300	0.0000000651	N/A	7074061
233'44'56-HeptaCB-(190)	ng/g	0.0119	0.00069	0.0050	0.0041	N/A	N/A	N/A	7074061
233'44'5'6-HeptaCB-(191)	ng/g	0.00261 J	0.00056	0.0050	0.0045	N/A	N/A	N/A	7074061
233'455'6-HeptaCB-(192)	ng/g	0.00058 U	0.00058	0.0050	0.0090	N/A	N/A	N/A	7074061
22'33'44'55'-OctaCB-(194)	ng/g	0.0293	0.0010	0.0050	0.0095	N/A	N/A	N/A	7074061
22'33'44'56-OctaCB-(195)	ng/g	0.0112	0.00095	0.0050	0.0094	N/A	N/A	N/A	7074061
22'33'44'56'-OctaCB-(196)	ng/g	0.0158	0.0011	0.0050	0.016	N/A	N/A	N/A	7074061
22'33'44'66'OctaCB-(197)	ng/g	0.00090 J	0.00061	0.0050	0.044	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
OctaCB-(198)+(199)	ng/g	0.0332	0.00096	0.010	0.014	N/A	N/A	N/A	7074061
22'33'4566'-OctaCB-(200)	ng/g	0.00294 J	0.00058	0.0050	0.032	N/A	N/A	N/A	7074061
22'33'45'66'-OctaCB-(201)	ng/g	0.00348 J	0.00058	0.0050	0.017	N/A	N/A	N/A	7074061
22'33'55'66'-OctaCB-(202)	ng/g	0.00735 J	0.00064	0.010	0.0081	N/A	N/A	N/A	7074061
22'344'55'6-OctaCB-(203)	ng/g	0.0184	0.00093	0.0050	0.011	N/A	N/A	N/A	7074061
22'344'566'-OctaCB-(204)	ng/g	0.00060 U	0.00060	0.0050	0.021	N/A	N/A	N/A	7074061
233'44'55'6-OctaCB-(205)	ng/g	0.00166 J	0.00095	0.0050	0.0096	N/A	N/A	N/A	7074061
22'33'44'55'6-NonaCB-(206)	ng/g	0.0411	0.00089	0.0050	0.0077	N/A	N/A	N/A	7074061
22'33'44'566'-NonaCB-(207)	ng/g	0.00302 J	0.00071	0.0050	0.0081	N/A	N/A	N/A	7074061
22'33'455'66'-NonaCB-(208)	ng/g	0.0155	0.00093	0.0050	0.0073	N/A	N/A	N/A	7074061
DecaCB-(209)	ng/g	0.0497	0.0021	0.0050	0.012	N/A	N/A	N/A	7074061
Total PCB	ng/g	2.46	N/A	N/A	N/A	N/A	N/A	N/A	7074061
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.0000772	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'55'6-NonaCB-(206)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'5-HeptaCB-(170)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'455'66'-NonaCB-(208)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'66'-OctaCB-(202)	%	79	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'6-HeptaCB-(178)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'344'55'-HeptaCB-(180)	%	86	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'34'566'-HeptaCB-(188)	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'44'66'-HexaCB-(155)	%	53	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'466'-PentaCB-(104)	%	49	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'66'-TetraCB-(54)	%	55	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'6-TriCB-(19)	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'-DiCB-(4)	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'6-OctaCB-(205)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'-HeptaCB-(189)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'-PentaCB-(105)	%	132	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'55'-PentaCB-(111)	%	105	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ506							
Sampling Date		2020/10/16 00:00							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	DUP-6	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-23'44'55'-HexaCB-(167)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2344'5-PentaCB-(114)	%	140	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'5-PentaCB-(118)	%	136	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2'344'5-PentaCB-(123)	%	141	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2-MonoCB-(1)	%	100	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'55'-HexaCB-(169)	%	113	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'5-PentaCB-(126)	%	155 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'-TetraCB-(77)	%	200 (2)	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'5-TetraCB-(81)	%	191 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'-TriCB-(37)	%	144	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-44'-DiCB-(15)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-4-MonoCB-(3)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-DecaCB-(209)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-HexaCB-(156)+(157)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7074061

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QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Recovery outside method acceptance criteria due to matrix effects
Minimal impact on data

(2) Recovery outside method acceptance criteria due to matrix effects

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.00146 J	0.000083	0.0020	0.0026	N/A	N/A	N/A	7074061
3-MonoCB-(2)	ng/g	0.00113 J	0.000074	0.0020	0.0038	N/A	N/A	N/A	7074061
4-MonoCB-(3)	ng/g	0.00111 J	0.000082	0.0050	0.0035	N/A	N/A	N/A	7074061
22'-DiCB-(4)	ng/g	0.0027 U	0.0027	0.0050	0.0040	N/A	N/A	N/A	7074061
2,3-DiCB-(5)	ng/g	0.000070 U	0.000070	0.0050	0.015	N/A	N/A	N/A	7074061
2,3'-DiCB-(6)	ng/g	0.000241 J	0.000066	0.0020	0.0034	N/A	N/A	N/A	7074061
2,4-DiCB-(7)	ng/g	0.000063 U	0.000063	0.0020	0.0064	N/A	N/A	N/A	7074061
2,4'-DiCB-(8)	ng/g	0.000358 J	0.000065	0.0050	0.016	N/A	N/A	N/A	7074061
2,5-DiCB-(9)	ng/g	0.000075 U	0.000075	0.0020	0.0019	N/A	N/A	N/A	7074061
2,6-DiCB-(10)	ng/g	0.0041 U	0.0041	0.0050	0.0042	N/A	N/A	N/A	7074061
3,3'-DiCB-(11)	ng/g	0.00124 J	0.000071	0.010	0.034	N/A	N/A	N/A	7074061
DiCB-(12)+(13)	ng/g	0.00047 U (1)	0.00047	0.0050	0.011	N/A	N/A	N/A	7074061
3,5-DiCB-(14)	ng/g	0.000067 U	0.000067	0.0020	0.0033	N/A	N/A	N/A	7074061
4,4'-DiCB-(15)	ng/g	0.00039 U (1)	0.00039	0.0050	0.0039	N/A	N/A	N/A	7074061
22'3-TriCB-(16)	ng/g	0.00026 U	0.00026	0.0050	0.013	N/A	N/A	N/A	7074061
22'4-TriCB-(17)	ng/g	0.00016 U	0.00016	0.0020	0.0040	N/A	N/A	N/A	7074061
TriCB-(18)+(30)	ng/g	0.00023 J	0.00013	0.0050	0.0052	N/A	N/A	N/A	7074061
22'6-TriCB-(19)	ng/g	0.00010 U	0.00010	0.0020	0.0052	N/A	N/A	N/A	7074061
TriCB-(20) + (28)	ng/g	0.00041 J	0.00011	0.0050	0.0090	N/A	N/A	N/A	7074061
TriCB-(21)+(33)	ng/g	0.00021 J	0.00011	0.0050	0.011	N/A	N/A	N/A	7074061
234'-TriCB-(22)	ng/g	0.00011 U	0.00011	0.0020	0.0049	N/A	N/A	N/A	7074061
235-TriCB-(23)	ng/g	0.00011 U	0.00011	0.0020	0.0046	N/A	N/A	N/A	7074061
236-TriCB-(24)	ng/g	0.000099 U	0.000099	0.0020	0.0090	N/A	N/A	N/A	7074061
23'4-TriCB-(25)	ng/g	0.000099 U	0.000099	0.0020	0.0064	N/A	N/A	N/A	7074061
TriCB-(26)+(29)	ng/g	0.00011 U	0.00011	0.0050	0.0087	N/A	N/A	N/A	7074061
23'6-TriCB-(27)	ng/g	0.00011 U	0.00011	0.0020	0.0065	N/A	N/A	N/A	7074061
24'5-TriCB-(31)	ng/g	0.00034 J	0.00010	0.0050	0.0038	N/A	N/A	N/A	7074061
24'6-TriCB-(32)	ng/g	0.00010 U	0.00010	0.0020	0.0024	N/A	N/A	N/A	7074061
23'5'-TriCB-(34)	ng/g	0.00011 U	0.00011	0.0020	0.0060	N/A	N/A	N/A	7074061
33'4-TriCB-(35)	ng/g	0.00012 U	0.00012	0.0020	0.0042	N/A	N/A	N/A	7074061

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N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.000099 U	0.000099	0.0020	0.0029	N/A	N/A	N/A	7074061
344'-TriCB-(37)	ng/g	0.00022 U	0.00022	0.0020	0.0029	N/A	N/A	N/A	7074061
345-TriCB-(38)	ng/g	0.00012 U	0.00012	0.0020	0.0038	N/A	N/A	N/A	7074061
34'5-TriCB-(39)	ng/g	0.00011 U	0.00011	0.0020	0.0052	N/A	N/A	N/A	7074061
TetraCB-(40)+(41)+(71)	ng/g	0.00029 U	0.00029	0.010	0.016	N/A	N/A	N/A	7074061
22'34'-TetraCB-(42)	ng/g	0.00030 U	0.00030	0.0050	0.014	N/A	N/A	N/A	7074061
22'35-TetraCB-(43)	ng/g	0.00032 U	0.00032	0.0050	0.019	N/A	N/A	N/A	7074061
TetraCB-(44)+(47)+(65)	ng/g	0.00080 J	0.00027	0.010	0.041	N/A	N/A	N/A	7074061
TetraCB-(45)+(51)	ng/g	0.00029 U	0.00029	0.0050	0.018	N/A	N/A	N/A	7074061
22'36'-TetraCB-(46)	ng/g	0.00032 U	0.00032	0.0020	0.0090	N/A	N/A	N/A	7074061
22'45-TetraCB-(48)	ng/g	0.00028 U	0.00028	0.0050	0.0042	N/A	N/A	N/A	7074061
TetraCB-(49)+TetraCB-(69)	ng/g	0.00026 U	0.00026	0.010	0.010	N/A	N/A	N/A	7074061
TetraCB-(50)+(53)	ng/g	0.00027 U	0.00027	0.010	0.013	N/A	N/A	N/A	7074061
22'55'-TetraCB-(52)	ng/g	0.00057 J	0.00027	0.0050	0.016	N/A	N/A	N/A	7074061
22'66'-TetraCB-(54)	ng/g	0.00036 U	0.00036	0.0050	0.0096	N/A	N/A	N/A	7074061
233'4-TetraCB-(55)	ng/g	0.00018 U	0.00018	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'-Tetra CB(56)	ng/g	0.00021 U	0.00021	0.0050	0.0051	N/A	N/A	N/A	7074061
233'5-TetraCB-(57)	ng/g	0.00019 U	0.00019	0.0050	0.0056	N/A	N/A	N/A	7074061
233'5'-TetraCB-(58)	ng/g	0.00019 U	0.00019	0.0050	0.011	N/A	N/A	N/A	7074061
TetraCB-(59)+(62)+(75)	ng/g	0.00022 U	0.00022	0.010	0.014	N/A	N/A	N/A	7074061
2344'-TetraCB -(60)	ng/g	0.00021 U	0.00021	0.0050	0.0053	N/A	N/A	N/A	7074061
TetraCB-(61)+(70)+(74)+(76)	ng/g	0.00052 J	0.00019	0.020	0.022	N/A	N/A	N/A	7074061
234'5-TetraCB-(63)	ng/g	0.00018 U	0.00018	0.0050	0.0071	N/A	N/A	N/A	7074061
234'6-TetraCB-(64)	ng/g	0.00026 J	0.00023	0.0050	0.0047	N/A	N/A	N/A	7074061
23'44'-TetraCB-(66)	ng/g	0.00028 J	0.00019	0.0050	0.099	N/A	N/A	N/A	7074061
23'45-TetraCB-(67)	ng/g	0.00017 U	0.00017	0.0050	0.011	N/A	N/A	N/A	7074061
23'45'-TetraCB-(68)	ng/g	0.00017 U	0.00017	0.0050	0.0088	N/A	N/A	N/A	7074061
23'55'-TetraCB-(72)	ng/g	0.00018 U	0.00018	0.0050	0.0086	N/A	N/A	N/A	7074061
23'5'6-TetraCB-(73)	ng/g	0.00023 U	0.00023	0.0050	0.019	N/A	N/A	N/A	7074061
33'44'-TetraCB-(77)	ng/g	0.00034 U	0.00034	0.0050	0.0063	0.000100	0.0000000340	N/A	7074061
33'45-TetraCB-(78)	ng/g	0.00022 U	0.00022	0.0050	0.0065	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/g	0.00019 U	0.00019	0.0050	0.0058	N/A	N/A	N/A	7074061
33'55'-TetraCB-(80)	ng/g	0.00016 U	0.00016	0.0050	0.0061	N/A	N/A	N/A	7074061
344'5-TetraCB-(81)	ng/g	0.00034 U	0.00034	0.0050	0.0058	0.000300	0.000000102	N/A	7074061
22'33'4-PentaCB-(82)	ng/g	0.00042 U	0.00042	0.0050	0.0048	N/A	N/A	N/A	7074061
PentaCB-(83)+(99)	ng/g	0.00040 U	0.00040	0.010	0.016	N/A	N/A	N/A	7074061
22'33'6-PentaCB-(84)	ng/g	0.00047 J	0.00040	0.0020	0.0077	N/A	N/A	N/A	7074061
PentaCB-(85)+(116)+(117)	ng/g	0.00032 U	0.00032	0.010	0.027	N/A	N/A	N/A	7074061
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	0.00033 U	0.00033	0.020	0.029	N/A	N/A	N/A	7074061
PentaCB-(88)+(91)	ng/g	0.00037 U	0.00037	0.0050	0.013	N/A	N/A	N/A	7074061
22'346'-PentaCB-(89)	ng/g	0.00040 U	0.00040	0.0050	0.0080	N/A	N/A	N/A	7074061
PentaCB-(90)+(101)+(113)	ng/g	0.00099 J	0.00033	0.020	0.011	N/A	N/A	N/A	7074061
22'355'-PentaCB-(92)	ng/g	0.00038 U	0.00038	0.0050	0.0044	N/A	N/A	N/A	7074061
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.00036 U	0.00036	0.020	0.024	N/A	N/A	N/A	7074061
22'356'-PentaCB-(94)	ng/g	0.00039 U	0.00039	0.0050	0.0063	N/A	N/A	N/A	7074061
22'35'6-PentaCB-(95)	ng/g	0.00154 J	0.00036	0.0050	0.0088	N/A	N/A	N/A	7074061
22'366'-PentaCB-(96)	ng/g	0.00056 U	0.00056	0.0050	0.010	N/A	N/A	N/A	7074061
22'45'6-PentaCB-(103)	ng/g	0.00033 U	0.00033	0.0050	0.0061	N/A	N/A	N/A	7074061
22'466'-PentaCB-(104)	ng/g	0.00026 U	0.00026	0.0050	0.0056	N/A	N/A	N/A	7074061
233'44'-PentaCB-(105)	ng/g	0.00054 J	0.00017	0.0050	0.0044	0.0000300	0.0000000162	N/A	7074061
233'45-PentaCB-(106)	ng/g	0.00011 U	0.00011	0.0050	0.0036	N/A	N/A	N/A	7074061
233'4'5-PentaCB-(107)	ng/g	0.00012 U	0.00012	0.0050	0.017	N/A	N/A	N/A	7074061
PentaCB-(108)+(124)	ng/g	0.00012 U	0.00012	0.010	0.011	N/A	N/A	N/A	7074061
PentaCB-(110)+(115)	ng/g	0.00256 J	0.00031	0.010	0.012	N/A	N/A	N/A	7074061
233'55'-PentaCB-(111)	ng/g	0.00029 U	0.00029	0.0050	0.0056	N/A	N/A	N/A	7074061
233'56-PentaCB-(112)	ng/g	0.00026 U	0.00026	0.0050	0.0078	N/A	N/A	N/A	7074061
2344'5-PentaCB-(114)	ng/g	0.00017 U	0.00017	0.0050	0.0042	0.0000300	0.00000000510	N/A	7074061
23'44'5-PentaCB-(118)	ng/g	0.00109	0.00017	0.0010	0.0066	0.0000300	0.0000000327	N/A	7074061
23'455'-PentaCB-(120)	ng/g	0.00029 U	0.00029	0.0050	0.0064	N/A	N/A	N/A	7074061
23'45'6-PentaCB-(121)	ng/g	0.00027 U	0.00027	0.0050	0.0063	N/A	N/A	N/A	7074061
233'4'5'-PentaCB-(122)	ng/g	0.00014 U	0.00014	0.0050	0.0066	N/A	N/A	N/A	7074061
23'44'5'-PentaCB-(123)	ng/g	0.00018 U	0.00018	0.0050	0.014	0.0000300	0.00000000540	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'44'5-PentaCB-(126)	ng/g	0.00016 U	0.00016	0.0050	0.0030	0.100	0.0000160	N/A	7074061
33'455'-PentaCB-(127)	ng/g	0.00014 U	0.00014	0.0050	0.0032	N/A	N/A	N/A	7074061
HexaCB-(128)+(166)	ng/g	0.00059 J	0.00032	0.010	0.021	N/A	N/A	N/A	7074061
HexaCB-(129)+(138)+(163)	ng/g	0.00372 J	0.00033	0.020	0.037	N/A	N/A	N/A	7074061
22'33'45'-HexaCB-(130)	ng/g	0.00039 U	0.00039	0.0050	0.0051	N/A	N/A	N/A	7074061
22'33'46-HexaCB-(131)	ng/g	0.00036 U	0.00036	0.0050	0.0099	N/A	N/A	N/A	7074061
22'33'46'-HexaCB-(132)	ng/g	0.00133 J	0.00034	0.0050	0.0087	N/A	N/A	N/A	7074061
22'33'55'-HexaCB-(133)	ng/g	0.00032 U	0.00032	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(134)+(143)	ng/g	0.00038 U	0.00038	0.010	0.017	N/A	N/A	N/A	7074061
HexaCB-(135)+(151)	ng/g	0.00109 J	0.00068	0.020	0.014	N/A	N/A	N/A	7074061
22'33'66'-HexaCB-(136)	ng/g	0.00050 U	0.00050	0.0050	0.0083	N/A	N/A	N/A	7074061
22'344'5-HexaCB-(137)	ng/g	0.00038 U	0.00038	0.010	0.030	N/A	N/A	N/A	7074061
HexaCB-(139)+(140)	ng/g	0.00028 U	0.00028	0.010	0.016	N/A	N/A	N/A	7074061
22'3455'-HexaCB-(141)	ng/g	0.00050 J	0.00029	0.0050	0.012	N/A	N/A	N/A	7074061
22'3456-HexaCB-(142)	ng/g	0.00033 U	0.00033	0.0050	0.0088	N/A	N/A	N/A	7074061
22'345'6-HexaCB-(144)	ng/g	0.00070 U	0.00070	0.0050	0.0072	N/A	N/A	N/A	7074061
22'3466'-HexaCB-(145)	ng/g	0.00049 U	0.00049	0.0050	0.0082	N/A	N/A	N/A	7074061
22'34'55'-HexaCB-(146)	ng/g	0.00050 J	0.00028	0.0050	0.010	N/A	N/A	N/A	7074061
HexaCB-(147)+(149)	ng/g	0.00312 J	0.00031	0.010	0.019	N/A	N/A	N/A	7074061
22'34'56'-HexaCB-(148)	ng/g	0.00066 U	0.00066	0.0050	0.0084	N/A	N/A	N/A	7074061
22'34'66'-HexaCB-(150)	ng/g	0.00047 U	0.00047	0.0050	0.0061	N/A	N/A	N/A	7074061
22'3566'-HexaCB-(152)	ng/g	0.00046 U	0.00046	0.0050	0.013	N/A	N/A	N/A	7074061
HexaCB-(153)+(168)	ng/g	0.00207 J	0.00026	0.010	0.013	N/A	N/A	N/A	7074061
22'44'56'-HexaCB-(154)	ng/g	0.00056 U	0.00056	0.0050	0.012	N/A	N/A	N/A	7074061
22'44'66'-HexaCB-(155)	ng/g	0.00034 U	0.00034	0.0050	0.0087	N/A	N/A	N/A	7074061
HexaCB-(156)+(157)	ng/g	0.00041 J	0.00040	0.010	0.0086	0.0000300	0.0000000123	N/A	7074061
233'44'6-HexaCB-(158)	ng/g	0.00036 J	0.00023	0.0050	0.0072	N/A	N/A	N/A	7074061
233'455'-HexaCB-(159)	ng/g	0.00026 U	0.00026	0.0050	0.0082	N/A	N/A	N/A	7074061
233'456-HexaCB-(160)	ng/g	0.00026 U	0.00026	0.0050	0.017	N/A	N/A	N/A	7074061
233'45'6-HexaCB-(161)	ng/g	0.00023 U	0.00023	0.0050	0.011	N/A	N/A	N/A	7074061
233'4'55'-HexaCB-(162)	ng/g	0.00025 U	0.00025	0.0050	0.0083	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'5'6-HexaCB-(164)	ng/g	0.00041 J	0.00023	0.0050	0.017	N/A	N/A	N/A	7074061
233'55'6-HexaCB-(165)	ng/g	0.00025 U	0.00025	0.0050	0.010	N/A	N/A	N/A	7074061
23'44'55'-HexaCB-(167)	ng/g	0.00038 U	0.00038	0.0050	0.0056	0.0000300	0.0000000114	N/A	7074061
33'44'55'-HexaCB-(169)	ng/g	0.00040 U	0.00040	0.0050	0.024	0.0300	0.0000120	N/A	7074061
22'33'44'5-HeptaCB-(170)	ng/g	0.00119 J	0.00045	0.0050	0.0042	N/A	N/A	N/A	7074061
HeptaCB-(171)+(173)	ng/g	0.00046 U	0.00046	0.010	0.011	N/A	N/A	N/A	7074061
22'33'455'-HeptaCB-(172)	ng/g	0.00053 U	0.00053	0.0050	0.0080	N/A	N/A	N/A	7074061
22'33'456'-HeptaCB-(174)	ng/g	0.00100 J	0.00041	0.0050	0.014	N/A	N/A	N/A	7074061
22'33'45'6-HeptaCB-(175)	ng/g	0.00052 U	0.00052	0.0050	0.0092	N/A	N/A	N/A	7074061
22'33'466'-HeptaCB-(176)	ng/g	0.00036 U	0.00036	0.0050	0.0098	N/A	N/A	N/A	7074061
22'33'45'6'-HeptaCB-(177)	ng/g	0.00080 J	0.00048	0.0050	0.0078	N/A	N/A	N/A	7074061
22'33'55'6-HeptaCB-(178)	ng/g	0.00052 U	0.00052	0.0050	0.010	N/A	N/A	N/A	7074061
22'33'566'-HeptaCB-(179)	ng/g	0.00042 J	0.00035	0.0050	0.0086	N/A	N/A	N/A	7074061
HeptaCB-(180)+(193)	ng/g	0.00293 J	0.00043	0.010	0.0085	N/A	N/A	N/A	7074061
22'344'56-HeptaCB-(181)	ng/g	0.00045 U	0.00045	0.0050	0.0080	N/A	N/A	N/A	7074061
22'344'56'-HeptaCB-(182)	ng/g	0.00049 U	0.00049	0.0050	0.0092	N/A	N/A	N/A	7074061
22'344'5'6-HeptaCB-(183)	ng/g	0.00077 J	0.00042	0.0050	0.028	N/A	N/A	N/A	7074061
22'344'66'-HeptaCB-(184)	ng/g	0.00033 U	0.00033	0.0050	0.010	N/A	N/A	N/A	7074061
22'3455'6-HeptaCB-(185)	ng/g	0.00041 U	0.00041	0.0050	0.022	N/A	N/A	N/A	7074061
22'34566'-HeptaCB-(186)	ng/g	0.00037 U	0.00037	0.0050	0.0086	N/A	N/A	N/A	7074061
22'34'55'6-HeptaCB-(187)	ng/g	0.00143 J	0.00047	0.0050	0.011	N/A	N/A	N/A	7074061
22'34'566'-HeptaCB-(188)	ng/g	0.00038 U	0.00038	0.0050	0.0047	N/A	N/A	N/A	7074061
233'44'55'-HeptaCB-(189)	ng/g	0.00028 U	0.00028	0.0050	0.0041	0.0000300	0.00000000840	N/A	7074061
233'44'56-HeptaCB-(190)	ng/g	0.00049 U	0.00049	0.0050	0.0041	N/A	N/A	N/A	7074061
233'44'5'6-HeptaCB-(191)	ng/g	0.00039 U	0.00039	0.0050	0.0045	N/A	N/A	N/A	7074061
233'455'6-HeptaCB-(192)	ng/g	0.00041 U	0.00041	0.0050	0.0090	N/A	N/A	N/A	7074061
22'33'44'55'-OctaCB-(194)	ng/g	0.00080 J	0.00050	0.0050	0.0095	N/A	N/A	N/A	7074061
22'33'44'56-OctaCB-(195)	ng/g	0.00047 U	0.00047	0.0050	0.0094	N/A	N/A	N/A	7074061
22'33'44'56'-OctaCB-(196)	ng/g	0.00091 U	0.00091	0.0050	0.016	N/A	N/A	N/A	7074061
22'33'44'66'OctaCB-(197)	ng/g	0.00051 U	0.00051	0.0050	0.044	N/A	N/A	N/A	7074061
OctaCB-(198)+(199)	ng/g	0.00084 J	0.00081	0.010	0.014	N/A	N/A	N/A	7074061

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'4566'-OctaCB-(200)	ng/g	0.00049 U	0.00049	0.0050	0.032	N/A	N/A	N/A	7074061
22'33'45'66'-OctaCB-(201)	ng/g	0.00049 U	0.00049	0.0050	0.017	N/A	N/A	N/A	7074061
22'33'55'66'-OctaCB-(202)	ng/g	0.00054 U	0.00054	0.010	0.0081	N/A	N/A	N/A	7074061
22'344'55'6-OctaCB-(203)	ng/g	0.00078 U	0.00078	0.0050	0.011	N/A	N/A	N/A	7074061
22'344'566'-OctaCB-(204)	ng/g	0.00050 U	0.00050	0.0050	0.021	N/A	N/A	N/A	7074061
233'44'55'6-OctaCB-(205)	ng/g	0.00047 U	0.00047	0.0050	0.0096	N/A	N/A	N/A	7074061
22'33'44'55'6-NonaCB-(206)	ng/g	0.00062 U	0.00062	0.0050	0.0077	N/A	N/A	N/A	7074061
22'33'44'566'-NonaCB-(207)	ng/g	0.00049 U	0.00049	0.0050	0.0081	N/A	N/A	N/A	7074061
22'33'455'66'-NonaCB-(208)	ng/g	0.00065 U	0.00065	0.0050	0.0073	N/A	N/A	N/A	7074061
DecaCB-(209)	ng/g	0.0016 U	0.0016	0.0050	0.012	N/A	N/A	N/A	7074061
Total PCB	ng/g	0.0406	N/A	N/A	N/A	N/A	N/A	N/A	7074061
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.0000282	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'55'6-NonaCB-(206)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'44'5-HeptaCB-(170)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'455'66'-NonaCB-(208)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'66'-OctaCB-(202)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'33'55'6-HeptaCB-(178)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'344'55'-HeptaCB-(180)	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'34'566'-HeptaCB-(188)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'44'66'-HexaCB-(155)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'466'-PentaCB-(104)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'66'-TetraCB-(54)	%	91	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'6-TriCB-(19)	%	83	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-22'-DiCB-(4)	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'6-OctaCB-(205)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'55'-HeptaCB-(189)	%	110	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'44'-PentaCB-(105)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-233'55'-PentaCB-(111)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'55'-HexaCB-(167)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7074061

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable

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SEMI-VOLATILE ORGANICS BY HRMS (SEDIMENT)

BV Labs ID		NYQ507							
Sampling Date		2020/10/16 15:50							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-18L-OM	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-2344'5-PentaCB-(114)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-23'44'5-PentaCB-(118)	%	107	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2'344'5-PentaCB-(123)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-2-MonoCB-(1)	%	60	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'55'-HexaCB-(169)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'5-PentaCB-(126)	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-33'44'-TetraCB-(77)	%	111	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'5-TetraCB-(81)	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-344'-TriCB-(37)	%	108	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-44'-DiCB-(15)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-4-MonoCB-(3)	%	69	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-DecaCB-(209)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7074061
C13-HexaCB-(156)+(157)	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7074061

EDL = Estimated Detection Limit
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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.73 U	1.73	9.66	4.00	1.00	1.73	N/A	7030307
1,2,3,7,8-Penta CDD *	pg/L	0.982 U	0.982	48.3	4.00	1.00	0.982	N/A	7030307
1,2,3,4,7,8-Hexa CDD *	pg/L	0.986 U	0.986	48.3	4.00	0.100	0.0986	N/A	7030307
1,2,3,6,7,8-Hexa CDD *	pg/L	0.991 U	0.991	48.3	4.00	0.100	0.0991	N/A	7030307
1,2,3,7,8,9-Hexa CDD *	pg/L	1.05 U	1.05	48.3	4.00	0.100	0.105	N/A	7030307
1,2,3,4,6,7,8-Hepta CDD *	pg/L	1.41 U	1.41	48.3	4.00	0.0100	0.0141	N/A	7030307
Octa CDD *	pg/L	1.31 U	1.31	96.6	8.00	0.000300	0.000393	N/A	7030307
Total Tetra CDD *	pg/L	1.73 U	1.73	9.66	4.00	N/A	N/A	0	7030307
Total Penta CDD *	pg/L	0.982 U	0.982	48.3	4.00	N/A	N/A	0	7030307
Total Hexa CDD *	pg/L	1.02 U	1.02	48.3	4.00	N/A	N/A	0	7030307
Total Hepta CDD *	pg/L	1.41 U	1.41	48.3	4.00	N/A	N/A	0	7030307
2,3,7,8-Tetra CDF **	pg/L	0.870 U	0.870	9.66	4.00	0.100	0.0870	N/A	7030307
1,2,3,7,8-Penta CDF **	pg/L	1.29 U	1.29	48.3	4.00	0.0300	0.0387	N/A	7030307
2,3,4,7,8-Penta CDF **	pg/L	1.18 U	1.18	48.3	4.00	0.300	0.354	N/A	7030307
1,2,3,4,7,8-Hexa CDF **	pg/L	0.679 U	0.679	48.3	4.00	0.100	0.0679	N/A	7030307
1,2,3,6,7,8-Hexa CDF **	pg/L	0.697 U	0.697	48.3	4.00	0.100	0.0697	N/A	7030307
2,3,4,6,7,8-Hexa CDF **	pg/L	0.658 U	0.658	48.3	4.00	0.100	0.0658	N/A	7030307
1,2,3,7,8,9-Hexa CDF **	pg/L	0.703 U	0.703	48.3	4.00	0.100	0.0703	N/A	7030307
1,2,3,4,6,7,8-Hepta CDF **	pg/L	0.948 U	0.948	48.3	4.00	0.0100	0.00948	N/A	7030307
1,2,3,4,7,8,9-Hepta CDF **	pg/L	0.916 U	0.916	48.3	4.00	0.0100	0.00916	N/A	7030307
Octa CDF **	pg/L	1.86 U	1.86	96.6	8.00	0.000300	0.000558	N/A	7030307
Total Tetra CDF **	pg/L	0.870 U	0.870	9.66	4.00	N/A	N/A	0	7030307
Total Penta CDF **	pg/L	1.24 U	1.24	48.3	4.00	N/A	N/A	0	7030307
Total Hexa CDF **	pg/L	0.683 U	0.683	48.3	4.00	N/A	N/A	0	7030307
Total Hepta CDF **	pg/L	0.932 U	0.932	48.3	4.00	N/A	N/A	0	7030307
TOTAL TOXIC EQUIVALENCY	pg/L	N/A	N/A	N/A	N/A	N/A	3.80	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7030307

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDD *	%	118	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-1234678 HeptaCDF **	%	136	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123478 HexaCDD *	%	104	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123478 HexaCDF **	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-1234789 HeptaCDF **	%	141 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123678 HexaCDD *	%	114	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123678 HexaCDF **	%	115	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-12378 PentaCDD *	%	94	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-12378 PentaCDF **	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-123789 HexaCDF **	%	132	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-234678 HexaCDF **	%	119	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-23478 PentaCDF **	%	112	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-2378 TetraCDD *	%	82	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-2378 TetraCDF **	%	98	N/A	N/A	N/A	N/A	N/A	N/A	7030307
C13-OCDD *	%	121	N/A	N/A	N/A	N/A	N/A	N/A	7030307

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RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Internal standard recovery outside method criteria. No positive hits are detected corresponding to this internal

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.00404 J	0.00092	0.021	0.0098	N/A	N/A	N/A	7065127
3-MonoCB-(2)	ng/L	0.00395 J	0.00082	0.021	0.0079	N/A	N/A	N/A	7065127
4-MonoCB-(3)	ng/L	0.0031 U (1)	0.0031	0.053	0.0071	N/A	N/A	N/A	7065127
22'-DiCB-(4)	ng/L	0.022 U	0.022	0.053	0.017	N/A	N/A	N/A	7065127
2,3-DiCB-(5)	ng/L	0.0067 U	0.0067	0.053	0.012	N/A	N/A	N/A	7065127
2,3'-DiCB-(6)	ng/L	0.0057 U	0.0057	0.021	0.0053	N/A	N/A	N/A	7065127
2,4-DiCB-(7)	ng/L	0.0056 U	0.0056	0.021	0.0056	N/A	N/A	N/A	7065127
2,4'-DiCB-(8)	ng/L	0.0050 U	0.0050	0.053	0.017	N/A	N/A	N/A	7065127
2,5-DiCB-(9)	ng/L	0.0058 U	0.0058	0.021	0.0044	N/A	N/A	N/A	7065127
2,6-DiCB-(10)	ng/L	0.031 U	0.031	0.053	0.0052	N/A	N/A	N/A	7065127
3,3'-DiCB-(11)	ng/L	0.019 U (1)	0.019	0.11	0.061	N/A	N/A	N/A	7065127
DiCB-(12)+(13)	ng/L	0.0058 U	0.0058	0.053	0.015	N/A	N/A	N/A	7065127
3,5-DiCB-(14)	ng/L	0.0056 U	0.0056	0.021	0.0051	N/A	N/A	N/A	7065127
4,4'-DiCB-(15)	ng/L	0.011 U	0.011	0.053	0.011	N/A	N/A	N/A	7065127
22'3-TriCB-(16)	ng/L	0.011 U	0.011	0.053	0.019	N/A	N/A	N/A	7065127
22'4-TriCB-(17)	ng/L	0.0083 U	0.0083	0.021	0.0091	N/A	N/A	N/A	7065127
TriCB-(18)+(30)	ng/L	0.0067 U	0.0067	0.053	0.017	N/A	N/A	N/A	7065127
22'6-TriCB-(19)	ng/L	0.0062 U	0.0062	0.021	0.0061	N/A	N/A	N/A	7065127
TriCB-(20) + (28)	ng/L	0.0038 J	0.0028	0.053	0.010	N/A	N/A	N/A	7065127
TriCB-(21)+(33)	ng/L	0.0027 U	0.0027	0.053	0.011	N/A	N/A	N/A	7065127
234'-TriCB-(22)	ng/L	0.0029 U	0.0029	0.021	0.0065	N/A	N/A	N/A	7065127
235-TriCB-(23)	ng/L	0.0027 U	0.0027	0.021	0.0072	N/A	N/A	N/A	7065127
236-TriCB-(24)	ng/L	0.0055 U	0.0055	0.021	0.014	N/A	N/A	N/A	7065127
23'4-TriCB-(25)	ng/L	0.0026 U	0.0026	0.021	0.0054	N/A	N/A	N/A	7065127
TriCB-(26)+(29)	ng/L	0.0026 U	0.0026	0.053	0.013	N/A	N/A	N/A	7065127
23'6-TriCB-(27)	ng/L	0.0059 U	0.0059	0.021	0.0082	N/A	N/A	N/A	7065127
24'5-TriCB-(31)	ng/L	0.0029 U (1)	0.0029	0.053	0.0078	N/A	N/A	N/A	7065127
24'6-TriCB-(32)	ng/L	0.0054 U	0.0054	0.021	0.0087	N/A	N/A	N/A	7065127
23'5'-TriCB-(34)	ng/L	0.0028 U	0.0028	0.021	0.0061	N/A	N/A	N/A	7065127
33'4-TriCB-(35)	ng/L	0.0030 U	0.0030	0.021	0.0042	N/A	N/A	N/A	7065127

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/L	0.0023 U	0.0023	0.021	0.0052	N/A	N/A	N/A	7065127
344'-TriCB-(37)	ng/L	0.0054 U	0.0054	0.021	0.0041	N/A	N/A	N/A	7065127
345-TriCB-(38)	ng/L	0.0028 U	0.0028	0.021	0.0047	N/A	N/A	N/A	7065127
34'5-TriCB-(39)	ng/L	0.0027 U	0.0027	0.021	0.0059	N/A	N/A	N/A	7065127
TetraCB-(40)+(41)+(71)	ng/L	0.0023 U	0.0023	0.11	0.035	N/A	N/A	N/A	7065127
22'34'-TetraCB-(42)	ng/L	0.0028 U	0.0028	0.053	0.011	N/A	N/A	N/A	7065127
22'35-TetraCB-(43)	ng/L	0.0030 U	0.0030	0.053	0.035	N/A	N/A	N/A	7065127
TetraCB-(44)+(47)+(65)	ng/L	0.0029 U (1)	0.0029	0.11	0.059	N/A	N/A	N/A	7065127
TetraCB-(45)+(51)	ng/L	0.0023 U	0.0023	0.053	0.030	N/A	N/A	N/A	7065127
22'36'-TetraCB-(46)	ng/L	0.0026 U	0.0026	0.021	0.014	N/A	N/A	N/A	7065127
22'45-TetraCB-(48)	ng/L	0.0022 U	0.0022	0.053	0.017	N/A	N/A	N/A	7065127
TetraCB-(49)+TetraCB-(69)	ng/L	0.0020 U	0.0020	0.11	0.023	N/A	N/A	N/A	7065127
TetraCB-(50)+(53)	ng/L	0.0021 U	0.0021	0.11	0.027	N/A	N/A	N/A	7065127
22'55'-TetraCB-(52)	ng/L	0.0027 J	0.0024	0.053	0.019	N/A	N/A	N/A	7065127
22'66'-TetraCB-(54)	ng/L	0.0013 U	0.0013	0.053	0.020	N/A	N/A	N/A	7065127
233'4-TetraCB-(55)	ng/L	0.0023 U	0.0023	0.053	0.015	N/A	N/A	N/A	7065127
233'4'-Tetra CB(56)	ng/L	0.0023 U	0.0023	0.053	0.018	N/A	N/A	N/A	7065127
233'5-TetraCB-(57)	ng/L	0.0020 U	0.0020	0.053	0.0097	N/A	N/A	N/A	7065127
233'5'-TetraCB-(58)	ng/L	0.0021 U	0.0021	0.053	0.020	N/A	N/A	N/A	7065127
TetraCB-(59)+(62)+(75)	ng/L	0.0017 U	0.0017	0.11	0.038	N/A	N/A	N/A	7065127
2344'-TetraCB -(60)	ng/L	0.0024 U	0.0024	0.053	0.011	N/A	N/A	N/A	7065127
TetraCB-(61)+(70)+(74)+(76)	ng/L	0.0021 U	0.0021	0.21	0.035	N/A	N/A	N/A	7065127
234'5-TetraCB-(63)	ng/L	0.0020 U	0.0020	0.053	0.0080	N/A	N/A	N/A	7065127
234'6-TetraCB-(64)	ng/L	0.0019 U	0.0019	0.053	0.0089	N/A	N/A	N/A	7065127
23'44'-TetraCB-(66)	ng/L	0.0022 U	0.0022	0.053	0.011	N/A	N/A	N/A	7065127
23'45-TetraCB-(67)	ng/L	0.0019 U	0.0019	0.053	0.011	N/A	N/A	N/A	7065127
23'45'-TetraCB-(68)	ng/L	0.0020 U	0.0020	0.053	0.014	N/A	N/A	N/A	7065127
23'55'-TetraCB-(72)	ng/L	0.0023 U	0.0023	0.053	0.0082	N/A	N/A	N/A	7065127
23'5'6-TetraCB-(73)	ng/L	0.0015 U	0.0015	0.053	0.023	N/A	N/A	N/A	7065127
33'44'-TetraCB-(77)	ng/L	0.0038 U	0.0038	0.053	0.011	0.000100	0.000000380	N/A	7065127

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45-TetraCB-(78)	ng/L	0.0025 U	0.0025	0.053	0.013	N/A	N/A	N/A	7065127
33'45'-TetraCB(79)	ng/L	0.0020 U	0.0020	0.053	0.0088	N/A	N/A	N/A	7065127
33'55'-TetraCB-(80)	ng/L	0.0020 U	0.0020	0.053	0.0087	N/A	N/A	N/A	7065127
344'5-TetraCB-(81)	ng/L	0.0037 U	0.0037	0.053	0.0079	0.000300	0.00000111	N/A	7065127
22'33'4-PentaCB-(82)	ng/L	0.0028 U	0.0028	0.053	0.014	N/A	N/A	N/A	7065127
PentaCB-(83)+(99)	ng/L	0.0023 U	0.0023	0.11	0.033	N/A	N/A	N/A	7065127
22'33'6-PentaCB-(84)	ng/L	0.0024 U	0.0024	0.021	0.013	N/A	N/A	N/A	7065127
PentaCB-(85)+(116)+(117)	ng/L	0.0019 U	0.0019	0.11	0.040	N/A	N/A	N/A	7065127
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	0.0019 U	0.0019	0.21	0.080	N/A	N/A	N/A	7065127
PentaCB-(88)+(91)	ng/L	0.0021 U	0.0021	0.053	0.025	N/A	N/A	N/A	7065127
22'346'-PentaCB-(89)	ng/L	0.0023 U	0.0023	0.053	0.016	N/A	N/A	N/A	7065127
PentaCB-(90)+(101)+(113)	ng/L	0.0019 U	0.0019	0.21	0.037	N/A	N/A	N/A	7065127
22'355'-PentaCB-(92)	ng/L	0.0023 U	0.0023	0.053	0.010	N/A	N/A	N/A	7065127
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.0021 U	0.0021	0.21	0.051	N/A	N/A	N/A	7065127
22'356'-PentaCB-(94)	ng/L	0.0022 U	0.0022	0.053	0.017	N/A	N/A	N/A	7065127
22'35'6-PentaCB-(95)	ng/L	0.0020 U	0.0020	0.053	0.011	N/A	N/A	N/A	7065127
22'366'-PentaCB-(96)	ng/L	0.0013 U	0.0013	0.053	0.014	N/A	N/A	N/A	7065127
22'45'6-PentaCB-(103)	ng/L	0.0018 U	0.0018	0.053	0.012	N/A	N/A	N/A	7065127
22'466'-PentaCB-(104)	ng/L	0.00082 U	0.00082	0.053	0.022	N/A	N/A	N/A	7065127
233'44'-PentaCB-(105)	ng/L	0.0020 U	0.0020	0.053	0.0052	0.0000300	0.0000000600	N/A	7065127
233'45-PentaCB-(106)	ng/L	0.0014 U	0.0014	0.053	0.018	N/A	N/A	N/A	7065127
233'4'5-PentaCB-(107)	ng/L	0.0014 U	0.0014	0.053	0.014	N/A	N/A	N/A	7065127
PentaCB-(108)+(124)	ng/L	0.0015 U	0.0015	0.11	0.023	N/A	N/A	N/A	7065127
PentaCB-(110)+(115)	ng/L	0.0018 U	0.0018	0.11	0.022	N/A	N/A	N/A	7065127
233'55'-PentaCB-(111)	ng/L	0.0017 U	0.0017	0.053	0.012	N/A	N/A	N/A	7065127
233'56-PentaCB-(112)	ng/L	0.0016 U	0.0016	0.053	0.018	N/A	N/A	N/A	7065127
2344'5-PentaCB-(114)	ng/L	0.0020 U	0.0020	0.053	0.0084	0.0000300	0.0000000600	N/A	7065127
23'44'5-PentaCB-(118)	ng/L	0.0021 U	0.0021	0.011	0.0071	0.0000300	0.0000000630	N/A	7065127
23'455'-PentaCB-(120)	ng/L	0.0018 U	0.0018	0.053	0.014	N/A	N/A	N/A	7065127
23'45'6-PentaCB-(121)	ng/L	0.0016 U	0.0016	0.053	0.013	N/A	N/A	N/A	7065127
233'4'5'-PentaCB-(122)	ng/L	0.0017 U	0.0017	0.053	0.011	N/A	N/A	N/A	7065127

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5'-PentaCB-(123)	ng/L	0.0022 U	0.0022	0.053	0.014	0.0000300	0.0000000660	N/A	7065127
33'44'5-PentaCB-(126)	ng/L	0.0019 U	0.0019	0.053	0.0061	0.100	0.000190	N/A	7065127
33'455'-PentaCB-(127)	ng/L	0.0018 U	0.0018	0.053	0.017	N/A	N/A	N/A	7065127
HexaCB-(128)+(166)	ng/L	0.0028 U	0.0028	0.11	0.026	N/A	N/A	N/A	7065127
HexaCB-(129)+(138)+(163)	ng/L	0.0028 U	0.0028	0.21	0.060	N/A	N/A	N/A	7065127
22'33'45'-HexaCB-(130)	ng/L	0.0033 U	0.0033	0.053	0.020	N/A	N/A	N/A	7065127
22'33'46-HexaCB-(131)	ng/L	0.0030 U	0.0030	0.053	0.019	N/A	N/A	N/A	7065127
22'33'46'-HexaCB-(132)	ng/L	0.0028 U	0.0028	0.053	0.019	N/A	N/A	N/A	7065127
22'33'55'-HexaCB-(133)	ng/L	0.0027 U	0.0027	0.053	0.017	N/A	N/A	N/A	7065127
HexaCB-(134)+(143)	ng/L	0.0030 U	0.0030	0.11	0.028	N/A	N/A	N/A	7065127
HexaCB-(135)+(151)	ng/L	0.0014 U	0.0014	0.11	0.038	N/A	N/A	N/A	7065127
22'33'66'-HexaCB-(136)	ng/L	0.00092 U	0.00092	0.053	0.014	N/A	N/A	N/A	7065127
22'344'5-HexaCB-(137)	ng/L	0.0033 U	0.0033	0.11	0.014	N/A	N/A	N/A	7065127
HexaCB-(139)+(140)	ng/L	0.0022 U	0.0022	0.11	0.032	N/A	N/A	N/A	7065127
22'3455'-HexaCB-(141)	ng/L	0.0028 U	0.0028	0.053	0.018	N/A	N/A	N/A	7065127
22'3456-HexaCB-(142)	ng/L	0.0028 U	0.0028	0.053	0.018	N/A	N/A	N/A	7065127
22'345'6-HexaCB-(144)	ng/L	0.0015 U	0.0015	0.053	0.011	N/A	N/A	N/A	7065127
22'3466'-HexaCB-(145)	ng/L	0.00092 U	0.00092	0.053	0.022	N/A	N/A	N/A	7065127
22'34'55'-HexaCB-(146)	ng/L	0.0024 U	0.0024	0.053	0.014	N/A	N/A	N/A	7065127
HexaCB-(147)+(149)	ng/L	0.0022 U	0.0022	0.11	0.027	N/A	N/A	N/A	7065127
22'34'56'-HexaCB-(148)	ng/L	0.0013 U	0.0013	0.053	0.013	N/A	N/A	N/A	7065127
22'34'66'-HexaCB-(150)	ng/L	0.00084 U	0.00084	0.053	0.022	N/A	N/A	N/A	7065127
22'3566'-HexaCB-(152)	ng/L	0.00091 U	0.00091	0.053	0.020	N/A	N/A	N/A	7065127
HexaCB-(153)+(168)	ng/L	0.0022 J	0.0021	0.11	0.028	N/A	N/A	N/A	7065127
22'44'56'-HexaCB-(154)	ng/L	0.0011 U	0.0011	0.053	0.014	N/A	N/A	N/A	7065127
22'44'66'-HexaCB-(155)	ng/L	0.00082 U	0.00082	0.053	0.013	N/A	N/A	N/A	7065127
HexaCB-(156)+(157)	ng/L	0.0018 U	0.0018	0.11	0.015	0.0000300	0.0000000540	N/A	7065127
233'44'6-HexaCB-(158)	ng/L	0.0021 U	0.0021	0.053	0.017	N/A	N/A	N/A	7065127
233'455'-HexaCB-(159)	ng/L	0.0013 U	0.0013	0.053	0.015	N/A	N/A	N/A	7065127
233'456-HexaCB-(160)	ng/L	0.0024 U	0.0024	0.053	0.013	N/A	N/A	N/A	7065127
233'45'6-HexaCB-(161)	ng/L	0.0020 U	0.0020	0.053	0.022	N/A	N/A	N/A	7065127

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'55'-HexaCB-(162)	ng/L	0.0012 U	0.0012	0.053	0.016	N/A	N/A	N/A	7065127
233'4'5'6-HexaCB-(164)	ng/L	0.0020 U	0.0020	0.053	0.020	N/A	N/A	N/A	7065127
233'55'6-HexaCB-(165)	ng/L	0.0021 U	0.0021	0.053	0.022	N/A	N/A	N/A	7065127
23'44'55'-HexaCB-(167)	ng/L	0.0017 U	0.0017	0.053	0.0096	0.0000300	0.0000000510	N/A	7065127
33'44'55'-HexaCB-(169)	ng/L	0.0018 U	0.0018	0.053	0.0092	0.0300	0.0000540	N/A	7065127
22'33'44'5-HeptaCB-(170)	ng/L	0.0044 U	0.0044	0.053	0.011	N/A	N/A	N/A	7065127
HeptaCB-(171)+(173)	ng/L	0.0046 U	0.0046	0.11	0.027	N/A	N/A	N/A	7065127
22'33'455'-HeptaCB-(172)	ng/L	0.0053 U	0.0053	0.053	0.012	N/A	N/A	N/A	7065127
22'33'456'-HeptaCB-(174)	ng/L	0.0038 U	0.0038	0.053	0.017	N/A	N/A	N/A	7065127
22'33'45'6-HeptaCB-(175)	ng/L	0.0012 U	0.0012	0.053	0.0064	N/A	N/A	N/A	7065127
22'33'466'-HeptaCB-(176)	ng/L	0.00078 U	0.00078	0.053	0.0079	N/A	N/A	N/A	7065127
22'33'45'6'-HeptaCB-(177)	ng/L	0.0044 U	0.0044	0.053	0.013	N/A	N/A	N/A	7065127
22'33'55'6-HeptaCB-(178)	ng/L	0.0012 U	0.0012	0.053	0.0071	N/A	N/A	N/A	7065127
22'33'566'-HeptaCB-(179)	ng/L	0.00073 U	0.00073	0.053	0.010	N/A	N/A	N/A	7065127
HeptaCB-(180)+(193)	ng/L	0.0043 U	0.0043	0.11	0.018	N/A	N/A	N/A	7065127
22'344'56-HeptaCB-(181)	ng/L	0.0042 U	0.0042	0.053	0.015	N/A	N/A	N/A	7065127
22'344'56'-HeptaCB-(182)	ng/L	0.0011 U	0.0011	0.053	0.0066	N/A	N/A	N/A	7065127
22'344'5'6-HeptaCB-(183)	ng/L	0.0036 U	0.0036	0.053	0.017	N/A	N/A	N/A	7065127
22'344'66'-HeptaCB-(184)	ng/L	0.00069 U	0.00069	0.053	0.0065	N/A	N/A	N/A	7065127
22'3455'6-HeptaCB-(185)	ng/L	0.0041 U	0.0041	0.053	0.017	N/A	N/A	N/A	7065127
22'34566'-HeptaCB-(186)	ng/L	0.00079 U	0.00079	0.053	0.0095	N/A	N/A	N/A	7065127
22'34'55'6-HeptaCB-(187)	ng/L	0.0011 U	0.0011	0.053	0.0047	N/A	N/A	N/A	7065127
22'34'566'-HeptaCB-(188)	ng/L	0.00092 U	0.00092	0.053	0.015	N/A	N/A	N/A	7065127
233'44'55'-HeptaCB-(189)	ng/L	0.0060 U	0.0060	0.053	0.014	0.0000300	0.000000180	N/A	7065127
233'44'56-HeptaCB-(190)	ng/L	0.0050 U	0.0050	0.053	0.016	N/A	N/A	N/A	7065127
233'44'5'6-HeptaCB-(191)	ng/L	0.0041 U	0.0041	0.053	0.014	N/A	N/A	N/A	7065127
233'455'6-HeptaCB-(192)	ng/L	0.0041 U	0.0041	0.053	0.0088	N/A	N/A	N/A	7065127
22'33'44'55'-OctaCB-(194)	ng/L	0.0052 U	0.0052	0.053	0.024	N/A	N/A	N/A	7065127
22'33'44'56-OctaCB-(195)	ng/L	0.0048 U	0.0048	0.053	0.019	N/A	N/A	N/A	7065127
22'33'44'56'-OctaCB-(196)	ng/L	0.0046 U	0.0046	0.053	0.017	N/A	N/A	N/A	7065127
22'33'44'66'OctaCB-(197)	ng/L	0.0022 U	0.0022	0.053	0.033	N/A	N/A	N/A	7065127

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
OctaCB-(198)+(199)	ng/L	0.0042 U	0.0042	0.11	0.028	N/A	N/A	N/A	7065127
22'33'4566'-OctaCB-(200)	ng/L	0.0026 U	0.0026	0.053	0.031	N/A	N/A	N/A	7065127
22'33'45'66'-OctaCB-(201)	ng/L	0.0023 U	0.0023	0.053	0.014	N/A	N/A	N/A	7065127
22'33'55'66'-OctaCB-(202)	ng/L	0.0027 U	0.0027	0.11	0.013	N/A	N/A	N/A	7065127
22'344'55'6-OctaCB-(203)	ng/L	0.0042 U	0.0042	0.053	0.021	N/A	N/A	N/A	7065127
22'344'566'-OctaCB-(204)	ng/L	0.0024 U	0.0024	0.053	0.018	N/A	N/A	N/A	7065127
233'44'55'6-OctaCB-(205)	ng/L	0.0042 U	0.0042	0.053	0.014	N/A	N/A	N/A	7065127
22'33'44'55'6-NonaCB-(206)	ng/L	0.0027 U	0.0027	0.053	0.020	N/A	N/A	N/A	7065127
22'33'44'566'-NonaCB-(207)	ng/L	0.0021 U	0.0021	0.053	0.018	N/A	N/A	N/A	7065127
22'33'455'66'-NonaCB-(208)	ng/L	0.0029 U	0.0029	0.053	0.021	N/A	N/A	N/A	7065127
DecaCB-(209)	ng/L	0.013 U	0.013	0.053	0.015	N/A	N/A	N/A	7065127
Total PCB	ng/L	0.0167	N/A	N/A	N/A	N/A	N/A	N/A	7065127
TOTAL TOXIC EQUIVALENCY	ng/L	N/A	N/A	N/A	N/A	N/A	0.000246	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	57	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'33'44'55'6-NonaCB-(206)	%	62	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'33'44'5-HeptaCB-(170)	%	116	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'33'455'66'-NonaCB-(208)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'33'55'66'-OctaCB-(202)	%	153 (1)	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'33'55'6-HeptaCB-(178)	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'344'55'-HeptaCB-(180)	%	130	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'34'566'-HeptaCB-(188)	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'44'66'-HexaCB-(155)	%	78	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'466'-PentaCB-(104)	%	61	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'66'-TetraCB-(54)	%	48	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'6-TriCB-(19)	%	42	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-22'-DiCB-(4)	%	35	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-233'44'55'6-OctaCB-(205)	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-233'44'55'-HeptaCB-(189)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-233'44'-PentaCB-(105)	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7065127

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RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Internal standard recovery is outside method limits.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

BV Labs ID		NYQ505							
Sampling Date		2020/10/16 17:10							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	EB SEDIMENT	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'55'-PentaCB-(111)	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-23'44'55'-HexaCB-(167)	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-2344'5-PentaCB-(114)	%	62	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-23'44'5-PentaCB-(118)	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-2'344'5-PentaCB-(123)	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-2-MonoCB-(1)	%	28	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-33'44'55'-HexaCB-(169)	%	45	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-33'44'5-PentaCB-(126)	%	58	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-33'44'-TetraCB-(77)	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-344'5-TetraCB-(81)	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-344'-TriCB-(37)	%	59	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-44'-DiCB-(15)	%	47	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-4-MonoCB-(3)	%	30	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-DecaCB-(209)	%	55	N/A	N/A	N/A	N/A	N/A	N/A	7065127
C13-HexaCB-(156)+(157)	%	57	N/A	N/A	N/A	N/A	N/A	N/A	7065127

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
N/A = Not Applicable

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TEST SUMMARY

BV Labs ID: NYQ501
Sample ID: SG04
Matrix: Sediment

Collected: 2020/10/15
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero
Moisture	BAL	7017887	N/A	2020/10/23	Min Yang
PCB Congeners in Soil (1668C)	HRMS/MS	7074061	2020/11/24	2020/11/25	Cathy Xu

BV Labs ID: NYQ502
Sample ID: SG05
Matrix: Sediment

Collected: 2020/10/15
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7017887	N/A	2020/10/23	Min Yang
PCB Congeners in Soil (1668C)	HRMS/MS	7074061	2020/11/24	2020/11/25	Cathy Xu

BV Labs ID: NYQ503
Sample ID: SG06
Matrix: Sediment

Collected: 2020/10/15
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	7017887	N/A	2020/10/23	Min Yang
PCB Congeners in Soil (1668C)	HRMS/MS	7074061	2020/11/24	2020/11/25	Cathy Xu

BV Labs ID: NYQ504
Sample ID: SG07
Matrix: Sediment

Collected: 2020/10/15
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero
Moisture	BAL	7017887	N/A	2020/10/23	Min Yang
PCB Congeners in Soil (1668C)	HRMS/MS	7074061	2020/11/24	2020/11/25	Cathy Xu

BV Labs ID: NYQ505
Sample ID: EB SEDIMENT
Matrix: Water

Collected: 2020/10/16
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (1613B)	HRMS/MS	7030307	2020/10/27	2020/11/06	Angel Guerrero
PCB Congeners in Water (1668C)	HRMS/MS	7065127	2020/10/28	2020/11/20	Cathy Xu

BV Labs ID: NYQ506
Sample ID: DUP-6
Matrix: Sediment

Collected: 2020/10/16
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero
Moisture	BAL	7017887	N/A	2020/10/23	Min Yang
PCB Congeners in Soil (1668C)	HRMS/MS	7074061	2020/11/24	2020/11/25	Cathy Xu

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TEST SUMMARY

BV Labs ID: NYQ507
Sample ID: T4RB-18L-OM
Matrix: Sediment

Collected: 2020/10/16
Shipped:
Received: 2020/10/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7055856	2020/11/09	2020/11/15	Angel Guerrero
Moisture	BAL	7017887	N/A	2020/10/23	Min Yang
PCB Congeners in Soil (1668C)	HRMS/MS	7074061	2020/11/24	2020/11/25	Cathy Xu

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.5°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7017887	KJP	RPD - Sample/Sample Dup	Moisture	2020/10/23	0.90		%	20
7030307	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/11/05		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/05		124	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/05		149 (1)	%	28 - 143
			C13-123478 HexaCDD	2020/11/05		103	%	32 - 141
			C13-123478 HexaCDF	2020/11/05		116	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/05		138	%	28 - 138
			C13-123678 HexaCDD	2020/11/05		119	%	28 - 130
			C13-123678 HexaCDF	2020/11/05		120	%	26 - 123
			C13-12378 PentaCDD	2020/11/05		100	%	25 - 181
			C13-12378 PentaCDF	2020/11/05		111	%	24 - 185
			C13-123789 HexaCDF	2020/11/05		131	%	29 - 147
			C13-234678 HexaCDF	2020/11/05		123	%	28 - 136
			C13-23478 PentaCDF	2020/11/05		120	%	21 - 178
			C13-2378 TetraCDD	2020/11/05		89	%	25 - 164
			C13-2378 TetraCDF	2020/11/05		107	%	24 - 169
			C13-OCDD	2020/11/05		125	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/05		108	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/05		114	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/05		114	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/05		108	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/05		117	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05		115	%	70 - 140
			Octa CDD	2020/11/05		111	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/05		109	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/05		110	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/05		107	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/05		114	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/05		110	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/05		114	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/05		112	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05		103	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05		118	%	78 - 138
			Octa CDF	2020/11/05		122	%	63 - 170
7030307	AGU	Spiked Blank DUP	37CL4 2378 Tetra CDD	2020/11/05		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/05		123	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/05		148 (1)	%	28 - 143
			C13-123478 HexaCDD	2020/11/05		103	%	32 - 141
			C13-123478 HexaCDF	2020/11/05		118	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/05		148 (1)	%	28 - 138
			C13-123678 HexaCDD	2020/11/05		120	%	28 - 130
			C13-123678 HexaCDF	2020/11/05		123	%	26 - 123
			C13-12378 PentaCDD	2020/11/05		101	%	25 - 181
			C13-12378 PentaCDF	2020/11/05		107	%	24 - 185
			C13-123789 HexaCDF	2020/11/05		136	%	29 - 147
			C13-234678 HexaCDF	2020/11/05		123	%	28 - 136
			C13-23478 PentaCDF	2020/11/05		122	%	21 - 178
			C13-2378 TetraCDD	2020/11/05		87	%	25 - 164
			C13-2378 TetraCDF	2020/11/05		102	%	24 - 169
			C13-OCDD	2020/11/05		127	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/05		109	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/05		115	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/05		120	%	70 - 164

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/11/05		107	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/05		118	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05		114	%	70 - 140
			Octa CDD	2020/11/05		110	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/05		113	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/05		114	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/05		105	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/05		114	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/05		108	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/05		122	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/05		107	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05		108	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05		110	%	78 - 138
			Octa CDF	2020/11/05		122	%	63 - 170
7030307	AGU	RPD	2,3,7,8-Tetra CDD	2020/11/05	0.92		%	25
			1,2,3,7,8-Penta CDD	2020/11/05	0.87		%	25
			1,2,3,4,7,8-Hexa CDD	2020/11/05	5.1		%	25
			1,2,3,6,7,8-Hexa CDD	2020/11/05	0.93		%	25
			1,2,3,7,8,9-Hexa CDD	2020/11/05	0.85		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05	0.87		%	25
			Octa CDD	2020/11/05	0.90		%	25
			2,3,7,8-Tetra CDF	2020/11/05	3.6		%	25
			1,2,3,7,8-Penta CDF	2020/11/05	3.6		%	25
			2,3,4,7,8-Penta CDF	2020/11/05	1.9		%	25
			1,2,3,4,7,8-Hexa CDF	2020/11/05	0		%	25
			1,2,3,6,7,8-Hexa CDF	2020/11/05	1.8		%	25
			2,3,4,6,7,8-Hexa CDF	2020/11/05	6.8		%	25
			1,2,3,7,8,9-Hexa CDF	2020/11/05	4.6		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05	4.7		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05	7.0		%	25
			Octa CDF	2020/11/05	0		%	25
7030307	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/11/05		87	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/05		117	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/05		146 (2)	%	28 - 143
			C13-123478 HexaCDD	2020/11/05		95	%	32 - 141
			C13-123478 HexaCDF	2020/11/05		105	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/05		134	%	28 - 138
			C13-123678 HexaCDD	2020/11/05		108	%	28 - 130
			C13-123678 HexaCDF	2020/11/05		110	%	26 - 123
			C13-12378 PentaCDD	2020/11/05		84	%	25 - 181
			C13-12378 PentaCDF	2020/11/05		89	%	24 - 185
			C13-123789 HexaCDF	2020/11/05		117	%	29 - 147
			C13-234678 HexaCDF	2020/11/05		113	%	28 - 136
			C13-23478 PentaCDF	2020/11/05		96	%	21 - 178
			C13-2378 TetraCDD	2020/11/05		69	%	25 - 164
			C13-2378 TetraCDF	2020/11/05		88	%	24 - 169
			C13-OCDD	2020/11/05		113	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/05	1.47 U, EDL=1.47		pg/L	
			1,2,3,7,8-Penta CDD	2020/11/05	1.45 U, EDL=1.45		pg/L	
			1,2,3,4,7,8-Hexa CDD	2020/11/05	1.07 U, EDL=1.07		pg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2020/11/05	1.08 U, EDL=1.08		pg/L	
			1,2,3,7,8,9-Hexa CDD	2020/11/05	1.14 U, EDL=1.14		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2020/11/05	1.26 U, EDL=1.26		pg/L	
			Octa CDD	2020/11/05	1.84 U, EDL=1.84		pg/L	
			Total Tetra CDD	2020/11/05	1.47 U, EDL=1.47		pg/L	
			Total Penta CDD	2020/11/05	1.45 U, EDL=1.45		pg/L	
			Total Hexa CDD	2020/11/05	1.11 U, EDL=1.11		pg/L	
			Total Hepta CDD	2020/11/05	1.26 U, EDL=1.26		pg/L	
			2,3,7,8-Tetra CDF	2020/11/05	1.40 U, EDL=1.40		pg/L	
			1,2,3,7,8-Penta CDF	2020/11/05	1.80 U, EDL=1.80		pg/L	
			2,3,4,7,8-Penta CDF	2020/11/05	1.65 U, EDL=1.65		pg/L	
			1,2,3,4,7,8-Hexa CDF	2020/11/05	1.52 U, EDL=1.52		pg/L	
			1,2,3,6,7,8-Hexa CDF	2020/11/05	1.56 U, EDL=1.56		pg/L	
			2,3,4,6,7,8-Hexa CDF	2020/11/05	1.47 U, EDL=1.47		pg/L	
			1,2,3,7,8,9-Hexa CDF	2020/11/05	1.58 U, EDL=1.58		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2020/11/05	1.26 U, EDL=1.26		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2020/11/05	1.22 U, EDL=1.22		pg/L	
			Octa CDF	2020/11/05	1.58 U, EDL=1.58		pg/L	
			Total Tetra CDF	2020/11/05	1.40 U, EDL=1.40		pg/L	
			Total Penta CDF	2020/11/05	1.72 U, EDL=1.72		pg/L	
			Total Hexa CDF	2020/11/05	1.53 U, EDL=1.53		pg/L	
			Total Hepta CDF	2020/11/05	1.24 U, EDL=1.24		pg/L	
7055856	AGU	Matrix Spike	37CL4 2378 Tetra CDD	2020/11/14		102	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/14		117	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/14		125	%	28 - 143
			C13-123478 HexaCDD	2020/11/14		118	%	32 - 141
			C13-123478 HexaCDF	2020/11/14		126	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/14		124	%	26 - 138
			C13-123678 HexaCDD	2020/11/14		129	%	28 - 130
			C13-123678 HexaCDF	2020/11/14		115	%	26 - 123
			C13-12378 PentaCDD	2020/11/14		102	%	25 - 181
			C13-12378 PentaCDF	2020/11/14		93	%	24 - 185

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-123789 HexaCDF	2020/11/14		128	%	29 - 147
			C13-234678 HexaCDF	2020/11/14		124	%	28 - 136
			C13-23478 PentaCDF	2020/11/14		108	%	21 - 178
			C13-2378 TetraCDD	2020/11/14		87	%	25 - 164
			C13-2378 TetraCDF	2020/11/14		93	%	24 - 169
			C13-OCDD	2020/11/14		97	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/14		92	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/14		102	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/14		99	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/14		100	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/14		90	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/14		146 (3)	%	70 - 140
			Octa CDD	2020/11/14		191 (3)	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/14		97	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/14		104	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/14		96	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/14		100	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/14		103	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/14		102	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/14		95	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2020/11/14		93	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/14		101	%	78 - 138
			Octa CDF	2020/11/14		106	%	63 - 170
7055856	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2020/11/14		112	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/14		111	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/14		119	%	28 - 143
			C13-123478 HexaCDD	2020/11/14		111	%	32 - 141
			C13-123478 HexaCDF	2020/11/14		117	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/14		119	%	26 - 138
			C13-123678 HexaCDD	2020/11/14		124	%	28 - 130
			C13-123678 HexaCDF	2020/11/14		110	%	26 - 123
			C13-12378 PentaCDD	2020/11/14		111	%	25 - 181
			C13-12378 PentaCDF	2020/11/14		103	%	24 - 185
			C13-123789 HexaCDF	2020/11/14		127	%	29 - 147
			C13-234678 HexaCDF	2020/11/14		118	%	28 - 136
			C13-23478 PentaCDF	2020/11/14		118	%	21 - 178
			C13-2378 TetraCDD	2020/11/14		96	%	25 - 164
			C13-2378 TetraCDF	2020/11/14		93	%	24 - 169
			C13-OCDD	2020/11/14		89	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/14		89	%	67 - 158
			1,2,3,7,8-Penta CDD	2020/11/14		101	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2020/11/14		100	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2020/11/14		92	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2020/11/14		99	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2020/11/14		102	%	70 - 140
			Octa CDD	2020/11/14		97	%	78 - 144
			2,3,7,8-Tetra CDF	2020/11/14		97	%	75 - 158
			1,2,3,7,8-Penta CDF	2020/11/14		100	%	80 - 134
			2,3,4,7,8-Penta CDF	2020/11/14		94	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2020/11/14		97	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2020/11/14		98	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2020/11/14		100	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2020/11/14		94	%	78 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,4,6,7,8-Hepta CDF	2020/11/14		90	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2020/11/14		96	%	78 - 138
			Octa CDF	2020/11/14		103	%	63 - 170
7055856	AGU	Method Blank	37CL4 2378 Tetra CDD	2020/11/15		89	%	35 - 197
			C13-1234678 HeptaCDD	2020/11/15		108	%	23 - 140
			C13-1234678 HeptaCDF	2020/11/15		115	%	28 - 143
			C13-123478 HexaCDD	2020/11/15		106	%	32 - 141
			C13-123478 HexaCDF	2020/11/15		115	%	26 - 152
			C13-1234789 HeptaCDF	2020/11/15		114	%	26 - 138
			C13-123678 HexaCDD	2020/11/15		122	%	28 - 130
			C13-123678 HexaCDF	2020/11/15		108	%	26 - 123
			C13-12378 PentaCDD	2020/11/15		95	%	25 - 181
			C13-12378 PentaCDF	2020/11/15		88	%	24 - 185
			C13-123789 HexaCDF	2020/11/15		122	%	29 - 147
			C13-234678 HexaCDF	2020/11/15		117	%	28 - 136
			C13-23478 PentaCDF	2020/11/15		104	%	21 - 178
			C13-2378 TetraCDD	2020/11/15		78	%	25 - 164
			C13-2378 TetraCDF	2020/11/15		82	%	24 - 169
			C13-OCDD	2020/11/15		82	%	17 - 157
			2,3,7,8-Tetra CDD	2020/11/15	0.116 U, EDL=0.116		pg/g	
			1,2,3,7,8-Penta CDD	2020/11/15	0.104 U, EDL=0.104		pg/g	
			1,2,3,4,7,8-Hexa CDD	2020/11/15	0.113 U, EDL=0.113		pg/g	
			1,2,3,6,7,8-Hexa CDD	2020/11/15	0.113 U, EDL=0.113		pg/g	
			1,2,3,7,8,9-Hexa CDD	2020/11/15	0.120 U, EDL=0.120		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2020/11/15	0.106 U, EDL=0.106		pg/g	
			Octa CDD	2020/11/15	0.130 U, EDL=0.130		pg/g	
			Total Tetra CDD	2020/11/15	0.116 U, EDL=0.116		pg/g	
			Total Penta CDD	2020/11/15	0.104 U, EDL=0.104		pg/g	
			Total Hexa CDD	2020/11/15	0.117 U, EDL=0.117		pg/g	
			Total Hepta CDD	2020/11/15	0.106 U, EDL=0.106		pg/g	
			2,3,7,8-Tetra CDF	2020/11/15	0.119 U, EDL=0.119		pg/g	
			1,2,3,7,8-Penta CDF	2020/11/15	0.111 U, EDL=0.111		pg/g	
			2,3,4,7,8-Penta CDF	2020/11/15	0.101 U, EDL=0.101		pg/g	
			1,2,3,4,7,8-Hexa CDF	2020/11/15	0.104 U, EDL=0.104		pg/g	
			1,2,3,6,7,8-Hexa CDF	2020/11/15	0.106 U, EDL=0.106		pg/g	
			2,3,4,6,7,8-Hexa CDF	2020/11/15	0.100 U, EDL=0.100		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8,9-Hexa CDF	2020/11/15	0.107 U, EDL=0.107		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2020/11/15	0.109 U, EDL=0.109		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2020/11/15	0.105 U, EDL=0.105		pg/g	
			Octa CDF	2020/11/15	0.205 U, EDL=0.205		pg/g	
			Total Tetra CDF	2020/11/15	0.119 U, EDL=0.119		pg/g	
			Total Penta CDF	2020/11/15	0.106 U, EDL=0.106		pg/g	
			Total Hexa CDF	2020/11/15	0.104 U, EDL=0.104		pg/g	
			Total Hepta CDF	2020/11/15	0.107 U, EDL=0.107		pg/g	
7055856	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2020/11/15	NC		%	25
			1,2,3,7,8-Penta CDD	2020/11/15	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2020/11/15	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2020/11/15	NC		%	25
			1,2,3,7,8,9-Hexa CDD	2020/11/15	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2020/11/15	NC		%	25
			Octa CDD	2020/11/15	NC		%	25
			Total Tetra CDD	2020/11/15	NC		%	25
			Total Penta CDD	2020/11/15	NC		%	25
			Total Hexa CDD	2020/11/15	NC		%	25
			Total Hepta CDD	2020/11/15	NC		%	25
			2,3,7,8-Tetra CDF	2020/11/15	NC		%	25
			1,2,3,7,8-Penta CDF	2020/11/15	NC		%	25
			2,3,4,7,8-Penta CDF	2020/11/15	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2020/11/15	NC		%	25
			1,2,3,6,7,8-Hexa CDF	2020/11/15	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2020/11/15	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2020/11/15	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2020/11/15	NC		%	25
			1,2,3,4,7,8,9-Hepta CDF	2020/11/15	NC		%	25
			Octa CDF	2020/11/15	NC (4)		%	25
			Total Tetra CDF	2020/11/15	NC		%	25
			Total Penta CDF	2020/11/15	NC		%	25
			Total Hexa CDF	2020/11/15	NC		%	25
			Total Hepta CDF	2020/11/15	NC		%	25
7065127	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2020/11/20		54	%	30 - 170
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/20		71	%	40 - 145
			C13-22'33'44'5-HeptaCB-(170)	2020/11/20		131	%	40 - 145
			C13-22'33'455'66'-NonaCB-(208)	2020/11/20		100	%	40 - 145
			C13-22'33'55'66'-OctaCB-(202)	2020/11/20		168 (5)	%	40 - 145
			C13-22'33'55'6-HeptaCB-(178)	2020/11/20		83	%	40 - 145
			C13-22'344'55'-HeptaCB-(180)	2020/11/20		148 (5)	%	40 - 145
			C13-22'34'566'-HeptaCB-(188)	2020/11/20		73	%	40 - 145
			C13-22'44'66'-HexaCB-(155)	2020/11/20		62	%	40 - 145
			C13-22'466'-PentaCB-(104)	2020/11/20		32 (5)	%	40 - 145
			C13-22'66'-TetraCB-(54)	2020/11/20		22	%	15 - 145
			C13-22'6-TriCB-(19)	2020/11/20		20 (5)	%	40 - 145
			C13-22'-DiCB-(4)	2020/11/20		16	%	15 - 145

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-233'44'55'6-OctaCB-(205)	2020/11/20		83	%	40 - 145
			C13-233'44'55'-HeptaCB-(189)	2020/11/20		102	%	40 - 145
			C13-233'44'-PentaCB-(105)	2020/11/20		71	%	40 - 145
			C13-233'55'-PentaCB-(111)	2020/11/20		76	%	30 - 170
			C13-23'44'55'-HexaCB-(167)	2020/11/20		65	%	40 - 145
			C13-2344'5-PentaCB-(114)	2020/11/20		62	%	40 - 145
			C13-23'44'5-PentaCB-(118)	2020/11/20		66	%	40 - 145
			C13-2'344'5-PentaCB-(123)	2020/11/20		65	%	40 - 145
			C13-2-MonoCB-(1)	2020/11/20		14 (5)	%	15 - 145
			C13-33'44'55'-HexaCB-(169)	2020/11/20		45	%	40 - 145
			C13-33'44'5-PentaCB-(126)	2020/11/20		59	%	40 - 145
			C13-33'44'-TetraCB-(77)	2020/11/20		67	%	40 - 145
			C13-344'5-TetraCB-(81)	2020/11/20		61	%	40 - 145
			C13-344'-TriCB-(37)	2020/11/20		49	%	40 - 145
			C13-44'-DiCB-(15)	2020/11/20		28	%	15 - 145
			C13-4-MonoCB-(3)	2020/11/20		16	%	15 - 145
			C13-DecaCB-(209)	2020/11/20		56	%	40 - 145
			C13-HexaCB-(156)+(157)	2020/11/20		60	%	40 - 145
			2-MonoCB-(1)	2020/11/20		115	%	50 - 150
			4-MonoCB-(3)	2020/11/20		108	%	50 - 150
			22'-DiCB-(4)	2020/11/20		108	%	50 - 150
			4,4'-DiCB-(15)	2020/11/20		106	%	50 - 150
			22'6-TriCB-(19)	2020/11/20		108	%	50 - 150
			344'-TriCB-(37)	2020/11/20		114	%	50 - 150
			22'66'-TetraCB-(54)	2020/11/20		112	%	50 - 150
			33'44'-TetraCB-(77)	2020/11/20		113	%	50 - 150
			344'5-TetraCB-(81)	2020/11/20		115	%	50 - 150
			22'466'-PentaCB-(104)	2020/11/20		139	%	50 - 150
			233'44'-PentaCB-(105)	2020/11/20		108	%	50 - 150
			2344'5-PentaCB-(114)	2020/11/20		112	%	50 - 150
			23'44'5-PentaCB-(118)	2020/11/20		110	%	50 - 150
			23'44'5'-PentaCB-(123)	2020/11/20		110	%	50 - 150
			33'44'5-PentaCB-(126)	2020/11/20		109	%	50 - 150
			22'44'66'-HexaCB-(155)	2020/11/20		131	%	50 - 150
			HexaCB-(156)+(157)	2020/11/20		108	%	50 - 150
			23'44'55'-HexaCB-(167)	2020/11/20		108	%	50 - 150
			33'44'55'-HexaCB-(169)	2020/11/20		109	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2020/11/20		107	%	50 - 150
			HeptaCB-(180)+(193)	2020/11/20		85	%	50 - 150
			22'34'566'-HeptaCB-(188)	2020/11/20		115	%	50 - 150
			233'44'55'-HeptaCB-(189)	2020/11/20		107	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2020/11/20		107	%	50 - 150
			233'44'55'6-OctaCB-(205)	2020/11/20		103	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2020/11/20		103	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2020/11/20		109	%	50 - 150
			DecaCB-(209)	2020/11/20		111	%	50 - 150
7065127	CXU	Spiked Blank DUP	C13-2,44'-TriCB-(28)	2020/11/20		60	%	30 - 170
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/20		74	%	40 - 145
			C13-22'33'44'5-HeptaCB-(170)	2020/11/20		122	%	40 - 145
			C13-22'33'455'66'-NonaCB-(208)	2020/11/20		99	%	40 - 145
			C13-22'33'55'66'-OctaCB-(202)	2020/11/20		145	%	40 - 145
			C13-22'33'55'6-HeptaCB-(178)	2020/11/20		80	%	40 - 145
			C13-22'344'55'-HeptaCB-(180)	2020/11/20		130	%	40 - 145

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'34'566'-HeptaCB-(188)	2020/11/20		66	%	40 - 145
			C13-22'44'66'-HexaCB-(155)	2020/11/20		55	%	40 - 145
			C13-22'466'-PentaCB-(104)	2020/11/20		23 (1)	%	40 - 145
			C13-22'66'-TetraCB-(54)	2020/11/20		18	%	15 - 145
			C13-22'6-TriCB-(19)	2020/11/20		15 (1)	%	40 - 145
			C13-22'-DiCB-(4)	2020/11/20		10 (1)	%	15 - 145
			C13-233'44'55'6-OctaCB-(205)	2020/11/20		82	%	40 - 145
			C13-233'44'55'-HeptaCB-(189)	2020/11/20		97	%	40 - 145
			C13-233'44'-PentaCB-(105)	2020/11/20		52	%	40 - 145
			C13-233'55'-PentaCB-(111)	2020/11/20		69	%	30 - 170
			C13-23'44'55'-HexaCB-(167)	2020/11/20		60	%	40 - 145
			C13-2344'5-PentaCB-(114)	2020/11/20		46	%	40 - 145
			C13-23'44'5-PentaCB-(118)	2020/11/20		49	%	40 - 145
			C13-2'344'5-PentaCB-(123)	2020/11/20		48	%	40 - 145
			C13-2-MonoCB-(1)	2020/11/20		6.0 (1)	%	15 - 145
			C13-33'44'55'-HexaCB-(169)	2020/11/20		42	%	40 - 145
			C13-33'44'5-PentaCB-(126)	2020/11/20		42	%	40 - 145
			C13-33'44'-TetraCB-(77)	2020/11/20		47	%	40 - 145
			C13-344'5-TetraCB-(81)	2020/11/20		42	%	40 - 145
			C13-344'-TriCB-(37)	2020/11/20		42	%	40 - 145
			C13-44'-DiCB-(15)	2020/11/20		27	%	15 - 145
			C13-4-MonoCB-(3)	2020/11/20		10 (1)	%	15 - 145
			C13-DecaCB-(209)	2020/11/20		66	%	40 - 145
			C13-HexaCB-(156)+(157)	2020/11/20		55	%	40 - 145
			2-MonoCB-(1)	2020/11/20		95	%	50 - 150
			4-MonoCB-(3)	2020/11/20		96	%	50 - 150
			22'-DiCB-(4)	2020/11/20		95	%	50 - 150
			4,4'-DiCB-(15)	2020/11/20		91	%	50 - 150
			22'6-TriCB-(19)	2020/11/20		89	%	50 - 150
			344'-TriCB-(37)	2020/11/20		115	%	50 - 150
			22'66'-TetraCB-(54)	2020/11/20		96	%	50 - 150
			33'44'-TetraCB-(77)	2020/11/20		114	%	50 - 150
			344'5-TetraCB-(81)	2020/11/20		117	%	50 - 150
			22'466'-PentaCB-(104)	2020/11/20		169 (6)	%	50 - 150
			233'44'-PentaCB-(105)	2020/11/20		114	%	50 - 150
			2344'5-PentaCB-(114)	2020/11/20		115	%	50 - 150
			23'44'5-PentaCB-(118)	2020/11/20		118	%	50 - 150
			23'44'5'-PentaCB-(123)	2020/11/20		121	%	50 - 150
			33'44'5-PentaCB-(126)	2020/11/20		110	%	50 - 150
			22'44'66'-HexaCB-(155)	2020/11/20		166 (1)	%	50 - 150
			HexaCB-(156)+(157)	2020/11/20		112	%	50 - 150
			23'44'55'-HexaCB-(167)	2020/11/20		111	%	50 - 150
			33'44'55'-HexaCB-(169)	2020/11/20		108	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2020/11/20		107	%	50 - 150
			HeptaCB-(180)+(193)	2020/11/20		89	%	50 - 150
			22'34'566'-HeptaCB-(188)	2020/11/20		128	%	50 - 150
			233'44'55'-HeptaCB-(189)	2020/11/20		108	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2020/11/20		117	%	50 - 150
			233'44'55'6-OctaCB-(205)	2020/11/20		109	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2020/11/20		110	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2020/11/20		106	%	50 - 150
			DecaCB-(209)	2020/11/20		109	%	50 - 150
7065127	CXU	Spiked Blank DUP 2	C13-2,44'-TriCB-(28)	2020/11/20		63	%	30 - 170

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/20		71	%	40 - 145
			C13-22'33'44'5-HeptaCB-(170)	2020/11/20		122	%	40 - 145
			C13-22'33'455'66'-NonaCB-(208)	2020/11/20		98	%	40 - 145
			C13-22'33'55'66'-OctaCB-(202)	2020/11/20		142	%	40 - 145
			C13-22'33'55'6-HeptaCB-(178)	2020/11/20		85	%	40 - 145
			C13-22'344'55'-HeptaCB-(180)	2020/11/20		134	%	40 - 145
			C13-22'34'566'-HeptaCB-(188)	2020/11/20		56	%	40 - 145
			C13-22'44'66'-HexaCB-(155)	2020/11/20		36 (1)	%	40 - 145
			C13-22'466'-PentaCB-(104)	2020/11/20		13 (1)	%	40 - 145
			C13-22'66'-TetraCB-(54)	2020/11/20		14 (1)	%	15 - 145
			C13-22'6-TriCB-(19)	2020/11/20		13 (1)	%	40 - 145
			C13-22'-DiCB-(4)	2020/11/20		8.0 (1)	%	15 - 145
			C13-233'44'55'6-OctaCB-(205)	2020/11/20		79	%	40 - 145
			C13-233'44'55'-HeptaCB-(189)	2020/11/20		98	%	40 - 145
			C13-233'44'-PentaCB-(105)	2020/11/20		51	%	40 - 145
			C13-233'55'-PentaCB-(111)	2020/11/20		76	%	30 - 170
			C13-23'44'55'-HexaCB-(167)	2020/11/20		60	%	40 - 145
			C13-2344'5-PentaCB-(114)	2020/11/20		44	%	40 - 145
			C13-23'44'5-PentaCB-(118)	2020/11/20		48	%	40 - 145
			C13-2'344'5-PentaCB-(123)	2020/11/20		46	%	40 - 145
			C13-2-MonoCB-(1)	2020/11/20		6.0 (1)	%	15 - 145
			C13-33'44'55'-HexaCB-(169)	2020/11/20		44	%	40 - 145
			C13-33'44'5-PentaCB-(126)	2020/11/20		44	%	40 - 145
			C13-33'44'-TetraCB-(77)	2020/11/20		53	%	40 - 145
			C13-344'5-TetraCB-(81)	2020/11/20		47	%	40 - 145
			C13-344'-TriCB-(37)	2020/11/20		40	%	40 - 145
			C13-44'-DiCB-(15)	2020/11/20		25	%	15 - 145
			C13-4-MonoCB-(3)	2020/11/20		8.0 (1)	%	15 - 145
			C13-DecaCB-(209)	2020/11/20		65	%	40 - 145
			C13-HexaCB-(156)+(157)	2020/11/20		52	%	40 - 145
			2-MonoCB-(1)	2020/11/20		114	%	50 - 150
			3-MonoCB-(2)	2020/11/20		136	%	N/A
			4-MonoCB-(3)	2020/11/20		120	%	50 - 150
			22'-DiCB-(4)	2020/11/20		127	%	50 - 150
			2,3-DiCB-(5)	2020/11/20		79	%	N/A
			2,3'-DiCB-(6)	2020/11/20		62	%	N/A
			2,4-DiCB-(7)	2020/11/20		51	%	N/A
			2,4'-DiCB-(8)	2020/11/20		61	%	N/A
			2,5-DiCB-(9)	2020/11/20		53	%	N/A
			2,6-DiCB-(10)	2020/11/20		43	%	N/A
			3,3'-DiCB-(11)	2020/11/20		105	%	N/A
			DiCB-(12)+(13)	2020/11/20		102	%	N/A
			3,5-DiCB-(14)	2020/11/20		68	%	N/A
			4,4'-DiCB-(15)	2020/11/20		125	%	50 - 150
			22'3-TriCB-(16)	2020/11/20		71	%	N/A
			22'4-TriCB-(17)	2020/11/20		42	%	N/A
			TriCB-(18)+(30)	2020/11/20		39	%	N/A
			22'6-TriCB-(19)	2020/11/20		119	%	50 - 150
			TriCB-(20) + (28)	2020/11/20		75	%	N/A
			TriCB-(21)+(33)	2020/11/20		73	%	N/A
			234'-TriCB-(22)	2020/11/20		88	%	N/A
			235-TriCB-(23)	2020/11/20		49	%	N/A
			236-TriCB-(24)	2020/11/20		43	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'4-TriCB-(25)	2020/11/20		58	%	N/A
			TriCB-(26)+(29)	2020/11/20		59	%	N/A
			23'6-TriCB-(27)	2020/11/20		54	%	N/A
			24'5-TriCB-(31)	2020/11/20		68	%	N/A
			24'6-TriCB-(32)	2020/11/20		53	%	N/A
			23'5'-TriCB-(34)	2020/11/20		51	%	N/A
			33'4-TriCB-(35)	2020/11/20		112	%	N/A
			33'5-TriCB-(36)	2020/11/20		75	%	N/A
			344'-TriCB-(37)	2020/11/20		111	%	50 - 150
			345-TriCB-(38)	2020/11/20		88	%	N/A
			34'5-TriCB-(39)	2020/11/20		82	%	N/A
			TetraCB-(40)+(41)+(71)	2020/11/20		69	%	N/A
			22'34'-TetraCB-(42)	2020/11/20		63	%	N/A
			22'35-TetraCB-(43)	2020/11/20		55	%	N/A
			TetraCB-(44)+(47)+(65)	2020/11/20		51	%	N/A
			TetraCB-(45)+(51)	2020/11/20		43	%	N/A
			22'36'-TetraCB-(46)	2020/11/20		54	%	N/A
			22'45-TetraCB-(48)	2020/11/20		48	%	N/A
			TetraCB-(49)+TetraCB-(69)	2020/11/20		45	%	N/A
			TetraCB-(50)+(53)	2020/11/20		35	%	N/A
			22'55'-TetraCB-(52)	2020/11/20		58	%	N/A
			22'66'-TetraCB-(54)	2020/11/20		119	%	50 - 150
			233'4-TetraCB-(55)	2020/11/20		86	%	N/A
			233'4'-Tetra CB(56)	2020/11/20		92	%	N/A
			233'5-TetraCB-(57)	2020/11/20		64	%	N/A
			233'5'-TetraCB-(58)	2020/11/20		70	%	N/A
			TetraCB-(59)+(62)+(75)	2020/11/20		50	%	N/A
			2344'-TetraCB -(60)	2020/11/20		86	%	N/A
			TetraCB-(61)+(70)+(74)+(76)	2020/11/20		71	%	N/A
			234'5-TetraCB-(63)	2020/11/20		69	%	N/A
			234'6-TetraCB-(64)	2020/11/20		65	%	N/A
			23'44'-TetraCB-(66)	2020/11/20		78	%	N/A
			23'45-TetraCB-(67)	2020/11/20		62	%	N/A
			23'45'-TetraCB-(68)	2020/11/20		55	%	N/A
			23'55'-TetraCB-(72)	2020/11/20		64	%	N/A
			23'5'6-TetraCB-(73)	2020/11/20		40	%	N/A
			33'44'-TetraCB-(77)	2020/11/20		100	%	50 - 150
			33'45-TetraCB-(78)	2020/11/20		99	%	N/A
			33'45'-TetraCB(79)	2020/11/20		93	%	N/A
			33'55'-TetraCB-(80)	2020/11/20		75	%	N/A
			344'5-TetraCB-(81)	2020/11/20		107	%	50 - 150
			22'33'4-PentaCB-(82)	2020/11/20		99	%	N/A
			PentaCB-(83)+(99)	2020/11/20		72	%	N/A
			22'33'6-PentaCB-(84)	2020/11/20		73	%	N/A
			PentaCB-(85)+(116)+(117)	2020/11/20		75	%	N/A
			PentaCB-(86)(87)(97)(109)(119)(125)	2020/11/20		81	%	N/A
			PentaCB-(88)+(91)	2020/11/20		54	%	N/A
			22'346'-PentaCB-(89)	2020/11/20		71	%	N/A
			PentaCB-(90)+(101)+(113)	2020/11/20		75	%	N/A
			22'355'-PentaCB-(92)	2020/11/20		73	%	N/A
			PentaCB-(93)+(98)+(100)+(102)	2020/11/20		49	%	N/A
			22'356'-PentaCB-(94)	2020/11/20		52	%	N/A
			22'35'6-PentaCB-(95)	2020/11/20		63	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'366'-PentaCB-(96)	2020/11/20		44	%	N/A
			22'45'6-PentaCB-(103)	2020/11/20		42	%	N/A
			22'466'-PentaCB-(104)	2020/11/20		92	%	50 - 150
			233'44'-PentaCB-(105)	2020/11/20		111	%	50 - 150
			233'45-PentaCB-(106)	2020/11/20		88	%	N/A
			233'4'5-PentaCB-(107)	2020/11/20		102	%	N/A
			PentaCB-(108)+(124)	2020/11/20		98	%	N/A
			PentaCB-(110)+(115)	2020/11/20		87	%	N/A
			233'55'-PentaCB-(111)	2020/11/20		85	%	N/A
			233'56-PentaCB-(112)	2020/11/20		79	%	N/A
			2344'5-PentaCB-(114)	2020/11/20		110	%	50 - 150
			23'44'5-PentaCB-(118)	2020/11/20		101	%	50 - 150
			23'455'-PentaCB-(120)	2020/11/20		89	%	N/A
			23'45'6-PentaCB-(121)	2020/11/20		58	%	N/A
			233'4'5'-PentaCB-(122)	2020/11/20		106	%	N/A
			23'44'5'-PentaCB-(123)	2020/11/20		99	%	50 - 150
			33'44'5-PentaCB-(126)	2020/11/20		117	%	50 - 150
			33'455'-PentaCB-(127)	2020/11/20		102	%	N/A
			HexaCB-(128)+(166)	2020/11/20		115	%	N/A
			HexaCB-(129)+(138)+(163)	2020/11/20		118	%	N/A
			22'33'45'-HexaCB-(130)	2020/11/20		121	%	N/A
			22'33'46-HexaCB-(131)	2020/11/20		111	%	N/A
			22'33'46'-HexaCB-(132)	2020/11/20		118	%	N/A
			22'33'55'-HexaCB-(133)	2020/11/20		119	%	N/A
			HexaCB-(134)+(143)	2020/11/20		119	%	N/A
			HexaCB-(135)+(151)	2020/11/20		103	%	N/A
			22'33'66'-HexaCB-(136)	2020/11/20		80	%	N/A
			22'344'5-HexaCB-(137)	2020/11/20		109	%	N/A
			HexaCB-(139)+(140)	2020/11/20		100	%	N/A
			22'3455'-HexaCB-(141)	2020/11/20		120	%	N/A
			22'3456-HexaCB-(142)	2020/11/20		102	%	N/A
			22'345'6-HexaCB-(144)	2020/11/20		104	%	N/A
			22'3466'-HexaCB-(145)	2020/11/20		68	%	N/A
			22'34'55'-HexaCB-(146)	2020/11/20		129	%	N/A
			HexaCB-(147)+(149)	2020/11/20		101	%	N/A
			22'34'56'-HexaCB-(148)	2020/11/20		91	%	N/A
			22'34'66'-HexaCB-(150)	2020/11/20		57	%	N/A
			22'3566'-HexaCB-(152)	2020/11/20		71	%	N/A
			HexaCB-(153)+(168)	2020/11/20		117	%	N/A
			22'44'56'-HexaCB-(154)	2020/11/20		91	%	N/A
			22'44'66'-HexaCB-(155)	2020/11/20		74	%	50 - 150
			HexaCB-(156)+(157)	2020/11/20		108	%	50 - 150
			233'44'6-HexaCB-(158)	2020/11/20		115	%	N/A
			233'455'-HexaCB-(159)	2020/11/20		119	%	N/A
			233'456-HexaCB-(160)	2020/11/20		115	%	N/A
			233'45'6-HexaCB-(161)	2020/11/20		115	%	N/A
			233'4'55'-HexaCB-(162)	2020/11/20		115	%	N/A
			233'4'5'6-HexaCB-(164)	2020/11/20		127	%	N/A
			233'55'6-HexaCB-(165)	2020/11/20		122	%	N/A
			23'44'55'-HexaCB-(167)	2020/11/20		110	%	50 - 150
			33'44'55'-HexaCB-(169)	2020/11/20		110	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2020/11/20		94	%	50 - 150
			HeptaCB-(171)+(173)	2020/11/20		109	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'455'-HeptaCB-(172)	2020/11/20		111	%	N/A
			22'33'456'-HeptaCB-(174)	2020/11/20		115	%	N/A
			22'33'45'6-HeptaCB-(175)	2020/11/20		115	%	N/A
			22'33'466'-HeptaCB-(176)	2020/11/20		113	%	N/A
			22'33'45'6'-HeptaCB-(177)	2020/11/20		116	%	N/A
			22'33'55'6-HeptaCB-(178)	2020/11/20		119	%	N/A
			22'33'566'-HeptaCB-(179)	2020/11/20		106	%	N/A
			HeptaCB-(180)+(193)	2020/11/20		96	%	50 - 150
			22'344'56-HeptaCB-(181)	2020/11/20		104	%	N/A
			22'344'56'-HeptaCB-(182)	2020/11/20		116	%	N/A
			22'344'5'6-HeptaCB-(183)	2020/11/20		130	%	N/A
			22'344'66'-HeptaCB-(184)	2020/11/20		103	%	N/A
			22'3455'6-HeptaCB-(185)	2020/11/20		91	%	N/A
			22'34566'-HeptaCB-(186)	2020/11/20		106	%	N/A
			22'34'55'6-HeptaCB-(187)	2020/11/20		122	%	N/A
			22'34'566'-HeptaCB-(188)	2020/11/20		92	%	50 - 150
			233'44'55'-HeptaCB-(189)	2020/11/20		105	%	50 - 150
			233'44'56-HeptaCB-(190)	2020/11/20		93	%	N/A
			233'44'5'6-HeptaCB-(191)	2020/11/20		101	%	N/A
			233'455'6-HeptaCB-(192)	2020/11/20		100	%	N/A
			22'33'44'55'-OctaCB-(194)	2020/11/20		75	%	N/A
			22'33'44'56-OctaCB-(195)	2020/11/20		88	%	N/A
			22'33'44'56'-OctaCB-(196)	2020/11/20		99	%	N/A
			22'33'44'66'OctaCB-(197)	2020/11/20		106	%	N/A
			OctaCB-(198)+(199)	2020/11/20		95	%	N/A
			22'33'4566'-OctaCB-(200)	2020/11/20		120	%	N/A
			22'33'45'66'-OctaCB-(201)	2020/11/20		117	%	N/A
			22'33'55'66'-OctaCB-(202)	2020/11/20		99	%	50 - 150
			22'344'55'6-OctaCB-(203)	2020/11/20		93	%	N/A
			22'344'566'-OctaCB-(204)	2020/11/20		112	%	N/A
			233'44'55'6-OctaCB-(205)	2020/11/20		101	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2020/11/20		99	%	50 - 150
			22'33'44'566'-NonaCB-(207)	2020/11/20		101	%	N/A
			22'33'455'66'-NonaCB-(208)	2020/11/20		99	%	50 - 150
			DecaCB-(209)	2020/11/20		112	%	50 - 150
7065127	CXU	RPD	2-MonoCB-(1)	2020/11/20	19		%	30
			4-MonoCB-(3)	2020/11/20	12		%	30
			22'-DiCB-(4)	2020/11/20	13		%	30
			4,4'-DiCB-(15)	2020/11/20	15		%	30
			22'6-TriCB-(19)	2020/11/20	19		%	30
			344'-TriCB-(37)	2020/11/20	1.3		%	30
			22'66'-TetraCB-(54)	2020/11/20	15		%	30
			33'44'-TetraCB-(77)	2020/11/20	0.86		%	30
			344'5-TetraCB-(81)	2020/11/20	1.3		%	30
			22'466'-PentaCB-(104)	2020/11/20	19 (6)		%	30
			233'44'-PentaCB-(105)	2020/11/20	5.1		%	30
			2344'5-PentaCB-(114)	2020/11/20	3.1		%	30
			23'44'5-PentaCB-(118)	2020/11/20	6.2		%	30
			23'44'5'-PentaCB-(123)	2020/11/20	9.0		%	30
			33'44'5-PentaCB-(126)	2020/11/20	1.6		%	30
			22'44'66'-HexaCB-(155)	2020/11/20	24		%	30
			HexaCB-(156)+(157)	2020/11/20	3.7		%	30
			23'44'55'-HexaCB-(167)	2020/11/20	2.3		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'44'55'-HexaCB-(169)	2020/11/20	0.95		%	30
			22'33'44'5-HeptaCB-(170)	2020/11/20	0.36		%	30
			HeptaCB-(180)+(193)	2020/11/20	4.1		%	30
			22'34'566'-HeptaCB-(188)	2020/11/20	11		%	30
			233'44'55'-HeptaCB-(189)	2020/11/20	1.5		%	30
			22'33'55'66'-OctaCB-(202)	2020/11/20	8.4		%	30
			233'44'55'6-OctaCB-(205)	2020/11/20	5.9		%	30
			22'33'44'55'6-NonaCB-(206)	2020/11/20	6.9		%	30
			22'33'455'66'-NonaCB-(208)	2020/11/20	3.2		%	30
			DecaCB-(209)	2020/11/20	2.1		%	30
7065127	CXU	Method Blank	C13-2,44'-TriCB-(28)	2020/11/20		70	%	30 - 170
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/20		71	%	40 - 145
			C13-22'33'44'5-HeptaCB-(170)	2020/11/20		134	%	40 - 145
			C13-22'33'455'66'-NonaCB-(208)	2020/11/20		105	%	40 - 145
			C13-22'33'55'66'-OctaCB-(202)	2020/11/20		176 (5)	%	40 - 145
			C13-22'33'55'6-HeptaCB-(178)	2020/11/20		84	%	40 - 145
			C13-22'344'55'-HeptaCB-(180)	2020/11/20		149 (5)	%	40 - 145
			C13-22'34'566'-HeptaCB-(188)	2020/11/20		73	%	40 - 145
			C13-22'44'66'-HexaCB-(155)	2020/11/20		63	%	40 - 145
			C13-22'466'-PentaCB-(104)	2020/11/20		31 (1)	%	40 - 145
			C13-22'66'-TetraCB-(54)	2020/11/20		21	%	15 - 145
			C13-22'6-TriCB-(19)	2020/11/20		19 (5)	%	40 - 145
			C13-22'-DiCB-(4)	2020/11/20		16	%	15 - 145
			C13-233'44'55'6-OctaCB-(205)	2020/11/20		80	%	40 - 145
			C13-233'44'55'-HeptaCB-(189)	2020/11/20		101	%	40 - 145
			C13-233'44'-PentaCB-(105)	2020/11/20		64	%	40 - 145
			C13-233'55'-PentaCB-(111)	2020/11/20		78	%	30 - 170
			C13-23'44'55'-HexaCB-(167)	2020/11/20		64	%	40 - 145
			C13-2344'5-PentaCB-(114)	2020/11/20		58	%	40 - 145
			C13-23'44'5-PentaCB-(118)	2020/11/20		62	%	40 - 145
			C13-2'344'5-PentaCB-(123)	2020/11/20		63	%	40 - 145
			C13-2-MonoCB-(1)	2020/11/20		13 (5)	%	15 - 145
			C13-33'44'55'-HexaCB-(169)	2020/11/20		41	%	40 - 145
			C13-33'44'5-PentaCB-(126)	2020/11/20		54	%	40 - 145
			C13-33'44'-TetraCB-(77)	2020/11/20		62	%	40 - 145
			C13-344'5-TetraCB-(81)	2020/11/20		57	%	40 - 145
			C13-344'-TriCB-(37)	2020/11/20		49	%	40 - 145
			C13-44'-DiCB-(15)	2020/11/20		31	%	15 - 145
			C13-4-MonoCB-(3)	2020/11/20		16	%	15 - 145
			C13-DecaCB-(209)	2020/11/20		58	%	40 - 145
			C13-HexaCB-(156)+(157)	2020/11/20		57	%	40 - 145
			2-MonoCB-(1)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			3-MonoCB-(2)	2020/11/20	0.0025 U, EDL=0.0025		ng/L	
			4-MonoCB-(3)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			22'-DiCB-(4)	2020/11/20	0.048 U, EDL=0.048		ng/L	
			2,3-DiCB-(5)	2020/11/20	0.024 U, EDL=0.024		ng/L	
			2,3'-DiCB-(6)	2020/11/20	0.021 U, EDL=0.021		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2,4-DiCB-(7)	2020/11/20	0.020 U, EDL=0.020		ng/L	
			2,4'-DiCB-(8)	2020/11/20	0.018 U, EDL=0.018		ng/L	
			2,5-DiCB-(9)	2020/11/20	0.021 U, EDL=0.021		ng/L	
			2,6-DiCB-(10)	2020/11/20	0.067 U, EDL=0.067		ng/L	
			3,3'-DiCB-(11)	2020/11/20	0.030 J, EDL=0.022		ng/L	
			DiCB-(12)+(13)	2020/11/20	0.021 U, EDL=0.021		ng/L	
			3,5-DiCB-(14)	2020/11/20	0.020 U, EDL=0.020		ng/L	
			4,4'-DiCB-(15)	2020/11/20	0.039 U, EDL=0.039		ng/L	
			22'3-TriCB-(16)	2020/11/20	0.029 U, EDL=0.029		ng/L	
			22'4-TriCB-(17)	2020/11/20	0.021 U, EDL=0.021		ng/L	
			TriCB-(18)+(30)	2020/11/20	0.017 U, EDL=0.017		ng/L	
			22'6-TriCB-(19)	2020/11/20	0.016 U, EDL=0.016		ng/L	
			TriCB-(20) + (28)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	
			TriCB-(21)+(33)	2020/11/20	0.0034 U, EDL=0.0034		ng/L	
			234'-TriCB-(22)	2020/11/20	0.0037 U, EDL=0.0037		ng/L	
			235-TriCB-(23)	2020/11/20	0.0034 U, EDL=0.0034		ng/L	
			236-TriCB-(24)	2020/11/20	0.014 U, EDL=0.014		ng/L	
			23'4-TriCB-(25)	2020/11/20	0.0032 U, EDL=0.0032		ng/L	
			TriCB-(26)+(29)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			23'6-TriCB-(27)	2020/11/20	0.015 U, EDL=0.015		ng/L	
			24'5-TriCB-(31)	2020/11/20	0.0032 U, EDL=0.0032		ng/L	
			24'6-TriCB-(32)	2020/11/20	0.014 U, EDL=0.014		ng/L	
			23'5'-TriCB-(34)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	
			33'4-TriCB-(35)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			33'5-TriCB-(36)	2020/11/20	0.0030 U, EDL=0.0030		ng/L	
			344'-TriCB-(37)	2020/11/20	0.0068 U, EDL=0.0068		ng/L	
			345-TriCB-(38)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			34'5-TriCB-(39)	2020/11/20	0.0034 U, EDL=0.0034		ng/L	
			TetraCB-(40)+(41)+(71)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			22'34'-TetraCB-(42)	2020/11/20	0.0047 U, EDL=0.0047		ng/L	
			22'35-TetraCB-(43)	2020/11/20	0.0051 U, EDL=0.0051		ng/L	
			TetraCB-(44)+(47)+(65)	2020/11/20	0.0038 J, EDL=0.0035		ng/L	
			TetraCB-(45)+(51)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			22'36'-TetraCB-(46)	2020/11/20	0.0043 U, EDL=0.0043		ng/L	
			22'45-TetraCB-(48)	2020/11/20	0.0037 U, EDL=0.0037		ng/L	
			TetraCB-(49)+TetraCB-(69)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			TetraCB-(50)+(53)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	
			22'55'-TetraCB-(52)	2020/11/20	0.0039 U, EDL=0.0039		ng/L	
			22'66'-TetraCB-(54)	2020/11/20	0.0051 U, EDL=0.0051		ng/L	
			233'4-TetraCB-(55)	2020/11/20	0.0030 U, EDL=0.0030		ng/L	
			233'4'-Tetra CB(56)	2020/11/20	0.0031 U, EDL=0.0031		ng/L	
			233'5-TetraCB-(57)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			233'5'-TetraCB-(58)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			TetraCB-(59)+(62)+(75)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			2344'-TetraCB -(60)	2020/11/20	0.0032 U, EDL=0.0032		ng/L	
			TetraCB-(61)+(70)+(74)+(76)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			234'5-TetraCB-(63)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			234'6-TetraCB-(64)	2020/11/20	0.0031 U, EDL=0.0031		ng/L	
			23'44'-TetraCB-(66)	2020/11/20	0.0029 U, EDL=0.0029		ng/L	
			23'45-TetraCB-(67)	2020/11/20	0.0025 U, EDL=0.0025		ng/L	
			23'45'-TetraCB-(68)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			23'55'-TetraCB-(72)	2020/11/20	0.0031 U, EDL=0.0031		ng/L	
			23'5'6-TetraCB-(73)	2020/11/20	0.0025 U, EDL=0.0025		ng/L	
			33'44'-TetraCB-(77)	2020/11/20	0.0051 U, EDL=0.0051		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'45-TetraCB-(78)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			33'45'-TetraCB(79)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			33'55'-TetraCB-(80)	2020/11/20	0.0026 U, EDL=0.0026		ng/L	
			344'5-TetraCB-(81)	2020/11/20	0.0049 U, EDL=0.0049		ng/L	
			22'33'4-PentaCB-(82)	2020/11/20	0.0051 U, EDL=0.0051		ng/L	
			PentaCB-(83)+(99)	2020/11/20	0.0042 U, EDL=0.0042		ng/L	
			22'33'6-PentaCB-(84)	2020/11/20	0.0044 U, EDL=0.0044		ng/L	
			PentaCB-(85)+(116)+(117)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	
			PentaCB-(86)(87)(97)(109)(119)(125)	2020/11/20	0.0036 U, EDL=0.0036		ng/L	
			PentaCB-(88)+(91)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			22'346'-PentaCB-(89)	2020/11/20	0.0042 U, EDL=0.0042		ng/L	
			PentaCB-(90)+(101)+(113)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	
			22'355'-PentaCB-(92)	2020/11/20	0.0042 U, EDL=0.0042		ng/L	
			PentaCB-(93)+(98)+(100)+(102)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			22'356'-PentaCB-(94)	2020/11/20	0.0040 U, EDL=0.0040		ng/L	
			22'35'6-PentaCB-(95)	2020/11/20	0.0037 U, EDL=0.0037		ng/L	
			22'366'-PentaCB-(96)	2020/11/20	0.0053 U, EDL=0.0053		ng/L	
			22'45'6-PentaCB-(103)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			22'466'-PentaCB-(104)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			233'44'-PentaCB-(105)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			233'45-PentaCB-(106)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			233'4'5-PentaCB-(107)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			PentaCB-(108)+(124)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			PentaCB-(110)+(115)	2020/11/20	0.0034 U, EDL=0.0034		ng/L	
			233'55'-PentaCB-(111)	2020/11/20	0.0031 U, EDL=0.0031		ng/L	
			233'56-PentaCB-(112)	2020/11/20	0.0030 U, EDL=0.0030		ng/L	
			2344'5-PentaCB-(114)	2020/11/20	0.0037 U, EDL=0.0037		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'44'5-PentaCB-(118)	2020/11/20	0.0039 U, EDL=0.0039		ng/L	
			23'455'-PentaCB-(120)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			23'45'6-PentaCB-(121)	2020/11/20	0.0029 U, EDL=0.0029		ng/L	
			233'4'5'-PentaCB-(122)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			23'44'5'-PentaCB-(123)	2020/11/20	0.0041 U, EDL=0.0041		ng/L	
			33'44'5-PentaCB-(126)	2020/11/20	0.0035 U, EDL=0.0035		ng/L	
			33'455'-PentaCB-(127)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			HexaCB-(128)+(166)	2020/11/20	0.0089 U, EDL=0.0089		ng/L	
			HexaCB-(129)+(138)+(163)	2020/11/20	0.0090 U, EDL=0.0090		ng/L	
			22'33'45'-HexaCB-(130)	2020/11/20	0.011 U, EDL=0.011		ng/L	
			22'33'46-HexaCB-(131)	2020/11/20	0.0095 U, EDL=0.0095		ng/L	
			22'33'46'-HexaCB-(132)	2020/11/20	0.0089 U, EDL=0.0089		ng/L	
			22'33'55'-HexaCB-(133)	2020/11/20	0.0086 U, EDL=0.0086		ng/L	
			HexaCB-(134)+(143)	2020/11/20	0.0097 U, EDL=0.0097		ng/L	
			HexaCB-(135)+(151)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			22'33'66'-HexaCB-(136)	2020/11/20	0.0019 U, EDL=0.0019		ng/L	
			22'344'5-HexaCB-(137)	2020/11/20	0.011 U, EDL=0.011		ng/L	
			HexaCB-(139)+(140)	2020/11/20	0.0072 U, EDL=0.0072		ng/L	
			22'3455'-HexaCB-(141)	2020/11/20	0.0089 U, EDL=0.0089		ng/L	
			22'3456-HexaCB-(142)	2020/11/20	0.0090 U, EDL=0.0090		ng/L	
			22'345'6-HexaCB-(144)	2020/11/20	0.0030 U, EDL=0.0030		ng/L	
			22'3466'-HexaCB-(145)	2020/11/20	0.0019 U, EDL=0.0019		ng/L	
			22'34'55'-HexaCB-(146)	2020/11/20	0.0078 U, EDL=0.0078		ng/L	
			HexaCB-(147)+(149)	2020/11/20	0.0070 U, EDL=0.0070		ng/L	
			22'34'56'-HexaCB-(148)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			22'34'66'-HexaCB-(150)	2020/11/20	0.0017 U, EDL=0.0017		ng/L	
			22'3566'-HexaCB-(152)	2020/11/20	0.0018 U, EDL=0.0018		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			HexaCB-(153)+(168)	2020/11/20	0.0067 U, EDL=0.0067		ng/L	
			22'44'56'-HexaCB-(154)	2020/11/20	0.0023 U, EDL=0.0023		ng/L	
			22'44'66'-HexaCB-(155)	2020/11/20	0.0017 U, EDL=0.0017		ng/L	
			HexaCB-(156)+(157)	2020/11/20	0.0056 U, EDL=0.0056		ng/L	
			233'44'6-HexaCB-(158)	2020/11/20	0.0066 U, EDL=0.0066		ng/L	
			233'455'-HexaCB-(159)	2020/11/20	0.0038 U, EDL=0.0038		ng/L	
			233'456-HexaCB-(160)	2020/11/20	0.0077 U, EDL=0.0077		ng/L	
			233'45'6-HexaCB-(161)	2020/11/20	0.0063 U, EDL=0.0063		ng/L	
			233'4'55'-HexaCB-(162)	2020/11/20	0.0037 U, EDL=0.0037		ng/L	
			233'4'5'6-HexaCB-(164)	2020/11/20	0.0063 U, EDL=0.0063		ng/L	
			233'55'6-HexaCB-(165)	2020/11/20	0.0067 U, EDL=0.0067		ng/L	
			23'44'55'-HexaCB-(167)	2020/11/20	0.0052 U, EDL=0.0052		ng/L	
			33'44'55'-HexaCB-(169)	2020/11/20	0.0055 U, EDL=0.0055		ng/L	
			22'33'44'5-HeptaCB-(170)	2020/11/20	0.0071 U, EDL=0.0071		ng/L	
			HeptaCB-(171)+(173)	2020/11/20	0.0074 U, EDL=0.0074		ng/L	
			22'33'455'-HeptaCB-(172)	2020/11/20	0.0086 U, EDL=0.0086		ng/L	
			22'33'456'-HeptaCB-(174)	2020/11/20	0.0062 U, EDL=0.0062		ng/L	
			22'33'45'6-HeptaCB-(175)	2020/11/20	0.0043 U, EDL=0.0043		ng/L	
			22'33'466'-HeptaCB-(176)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			22'33'45'6'-HeptaCB-(177)	2020/11/20	0.0072 U, EDL=0.0072		ng/L	
			22'33'55'6-HeptaCB-(178)	2020/11/20	0.0044 U, EDL=0.0044		ng/L	
			22'33'566'-HeptaCB-(179)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			HeptaCB-(180)+(193)	2020/11/20	0.0070 U, EDL=0.0070		ng/L	
			22'344'56-HeptaCB-(181)	2020/11/20	0.0068 U, EDL=0.0068		ng/L	
			22'344'56'-HeptaCB-(182)	2020/11/20	0.0041 U, EDL=0.0041		ng/L	
			22'344'5'6-HeptaCB-(183)	2020/11/20	0.0058 U, EDL=0.0058		ng/L	
			22'344'66'-HeptaCB-(184)	2020/11/20	0.0025 U, EDL=0.0025		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'3455'6-HeptaCB-(185)	2020/11/20	0.0067 U, EDL=0.0067		ng/L	
			22'34566'-HeptaCB-(186)	2020/11/20	0.0029 U, EDL=0.0029		ng/L	
			22'34'55'6-HeptaCB-(187)	2020/11/20	0.0040 U, EDL=0.0040		ng/L	
			22'34'566'-HeptaCB-(188)	2020/11/20	0.0033 U, EDL=0.0033		ng/L	
			233'44'55'-HeptaCB-(189)	2020/11/20	0.012 U, EDL=0.012		ng/L	
			233'44'56-HeptaCB-(190)	2020/11/20	0.0081 U, EDL=0.0081		ng/L	
			233'44'5'6-HeptaCB-(191)	2020/11/20	0.0067 U, EDL=0.0067		ng/L	
			233'455'6-HeptaCB-(192)	2020/11/20	0.0067 U, EDL=0.0067		ng/L	
			22'33'44'55'-OctaCB-(194)	2020/11/20	0.0071 U, EDL=0.0071		ng/L	
			22'33'44'56-OctaCB-(195)	2020/11/20	0.0066 U, EDL=0.0066		ng/L	
			22'33'44'56'-OctaCB-(196)	2020/11/20	0.0053 U, EDL=0.0053		ng/L	
			22'33'44'66'OctaCB-(197)	2020/11/20	0.0026 U, EDL=0.0026		ng/L	
			OctaCB-(198)+(199)	2020/11/20	0.0049 U, EDL=0.0049		ng/L	
			22'33'4566'-OctaCB-(200)	2020/11/20	0.0030 U, EDL=0.0030		ng/L	
			22'33'45'66'-OctaCB-(201)	2020/11/20	0.0027 U, EDL=0.0027		ng/L	
			22'33'55'66'-OctaCB-(202)	2020/11/20	0.0031 U, EDL=0.0031		ng/L	
			22'344'55'6-OctaCB-(203)	2020/11/20	0.0048 U, EDL=0.0048		ng/L	
			22'344'566'-OctaCB-(204)	2020/11/20	0.0028 U, EDL=0.0028		ng/L	
			233'44'55'6-OctaCB-(205)	2020/11/20	0.0058 U, EDL=0.0058		ng/L	
			22'33'44'55'6-NonaCB-(206)	2020/11/20	0.0074 U, EDL=0.0074		ng/L	
			22'33'44'566'-NonaCB-(207)	2020/11/20	0.0058 U, EDL=0.0058		ng/L	
			22'33'455'66'-NonaCB-(208)	2020/11/20	0.0078 U, EDL=0.0078		ng/L	
			DecaCB-(209)	2020/11/20	0.035 U, EDL=0.035		ng/L	
			Total PCB	2020/11/20	0.0335		ng/L	
7074061	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2020/11/25		72	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/25		89	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2020/11/25		142	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2020/11/25		119	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2020/11/25		177 (7)	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2020/11/25		97	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2020/11/25		149 (8)	%	30 - 135

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QUALITY ASSURANCE REPORT(CONT'D)

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			C13-22'34'566'-HeptaCB-(188)	2020/11/25		110	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2020/11/25		130	%	25 - 150
			C13-22'466'-PentaCB-(104)	2020/11/25		94	%	25 - 150
			C13-22'66'-TetraCB-(54)	2020/11/25		77	%	25 - 150
			C13-22'6-TriCB-(19)	2020/11/25		64	%	25 - 150
			C13-22'-DiCB-(4)	2020/11/25		52	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2020/11/25		98	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2020/11/25		118	%	25 - 150
			C13-233'44'-PentaCB-(105)	2020/11/25		77	%	25 - 150
			C13-233'55'-PentaCB-(111)	2020/11/25		89	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2020/11/25		81	%	25 - 150
			C13-2344'5-PentaCB-(114)	2020/11/25		77	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2020/11/25		79	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2020/11/25		80	%	25 - 150
			C13-2-MonoCB-(1)	2020/11/25		40	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2020/11/25		58	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2020/11/25		67	%	25 - 150
			C13-33'44'-TetraCB-(77)	2020/11/25		79	%	25 - 150
			C13-344'5-TetraCB-(81)	2020/11/25		80	%	25 - 150
			C13-344'-TriCB-(37)	2020/11/25		85	%	25 - 150
			C13-44'-DiCB-(15)	2020/11/25		69	%	25 - 150
			C13-4-MonoCB-(3)	2020/11/25		47	%	15 - 150
			C13-DecaCB-(209)	2020/11/25		85	%	25 - 150
			C13-HexaCB-(156)+(157)	2020/11/25		78	%	25 - 150
			2-MonoCB-(1)	2020/11/25		113	%	50 - 150
			4-MonoCB-(3)	2020/11/25		118	%	50 - 150
			22'-DiCB-(4)	2020/11/25		116	%	50 - 150
			4,4'-DiCB-(15)	2020/11/25		111	%	50 - 150
			22'6-TriCB-(19)	2020/11/25		113	%	50 - 150
			344'-TriCB-(37)	2020/11/25		108	%	50 - 150
			22'66'-TetraCB-(54)	2020/11/25		112	%	50 - 150
			33'44'-TetraCB-(77)	2020/11/25		108	%	50 - 150
			344'5-TetraCB-(81)	2020/11/25		109	%	50 - 150
			22'466'-PentaCB-(104)	2020/11/25		113	%	50 - 150
			233'44'-PentaCB-(105)	2020/11/25		115	%	50 - 150
			2344'5-PentaCB-(114)	2020/11/25		112	%	50 - 150
			23'44'5-PentaCB-(118)	2020/11/25		115	%	50 - 150
			23'44'5'-PentaCB-(123)	2020/11/25		116	%	50 - 150
			33'44'5-PentaCB-(126)	2020/11/25		115	%	50 - 150
			22'44'66'-HexaCB-(155)	2020/11/25		113	%	50 - 150
			HexaCB-(156)+(157)	2020/11/25		105	%	50 - 150
			23'44'55'-HexaCB-(167)	2020/11/25		106	%	50 - 150
			33'44'55'-HexaCB-(169)	2020/11/25		107	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2020/11/25		110	%	50 - 150
			HeptaCB-(180)+(193)	2020/11/25		86	%	50 - 150
			22'34'566'-HeptaCB-(188)	2020/11/25		111	%	50 - 150
			233'44'55'-HeptaCB-(189)	2020/11/25		102	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2020/11/25		110	%	50 - 150
			233'44'55'6-OctaCB-(205)	2020/11/25		111	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2020/11/25		101	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2020/11/25		108	%	50 - 150
			DecaCB-(209)	2020/11/25		104	%	50 - 150
7074061	CXU	Spiked Blank DUP	C13-2,44'-TriCB-(28)	2020/11/25		63	%	30 - 135

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/25		81	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2020/11/25		130	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2020/11/25		104	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2020/11/25		154 (7)	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2020/11/25		82	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2020/11/25		130	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2020/11/25		96	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2020/11/25		116	%	25 - 150
			C13-22'466'-PentaCB-(104)	2020/11/25		84	%	25 - 150
			C13-22'66'-TetraCB-(54)	2020/11/25		68	%	25 - 150
			C13-22'6-TriCB-(19)	2020/11/25		56	%	25 - 150
			C13-22'-DiCB-(4)	2020/11/25		48	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2020/11/25		87	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2020/11/25		103	%	25 - 150
			C13-233'44'-PentaCB-(105)	2020/11/25		66	%	25 - 150
			C13-233'55'-PentaCB-(111)	2020/11/25		74	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2020/11/25		69	%	25 - 150
			C13-2344'5-PentaCB-(114)	2020/11/25		67	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2020/11/25		68	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2020/11/25		70	%	25 - 150
			C13-2-MonoCB-(1)	2020/11/25		37	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2020/11/25		52	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2020/11/25		59	%	25 - 150
			C13-33'44'-TetraCB-(77)	2020/11/25		68	%	25 - 150
			C13-344'5-TetraCB-(81)	2020/11/25		69	%	25 - 150
			C13-344'-TriCB-(37)	2020/11/25		76	%	25 - 150
			C13-44'-DiCB-(15)	2020/11/25		61	%	25 - 150
			C13-4-MonoCB-(3)	2020/11/25		42	%	15 - 150
			C13-DecaCB-(209)	2020/11/25		72	%	25 - 150
			C13-HexaCB-(156)+(157)	2020/11/25		67	%	25 - 150
			2-MonoCB-(1)	2020/11/25		112	%	50 - 150
			4-MonoCB-(3)	2020/11/25		118	%	50 - 150
			22'-DiCB-(4)	2020/11/25		114	%	50 - 150
			4,4'-DiCB-(15)	2020/11/25		110	%	50 - 150
			22'6-TriCB-(19)	2020/11/25		114	%	50 - 150
			344'-TriCB-(37)	2020/11/25		107	%	50 - 150
			22'66'-TetraCB-(54)	2020/11/25		111	%	50 - 150
			33'44'-TetraCB-(77)	2020/11/25		108	%	50 - 150
			344'5-TetraCB-(81)	2020/11/25		107	%	50 - 150
			22'466'-PentaCB-(104)	2020/11/25		110	%	50 - 150
			233'44'-PentaCB-(105)	2020/11/25		111	%	50 - 150
			2344'5-PentaCB-(114)	2020/11/25		110	%	50 - 150
			23'44'5-PentaCB-(118)	2020/11/25		111	%	50 - 150
			23'44'5'-PentaCB-(123)	2020/11/25		114	%	50 - 150
			33'44'5-PentaCB-(126)	2020/11/25		109	%	50 - 150
			22'44'66'-HexaCB-(155)	2020/11/25		114	%	50 - 150
			HexaCB-(156)+(157)	2020/11/25		104	%	50 - 150
			23'44'55'-HexaCB-(167)	2020/11/25		105	%	50 - 150
			33'44'55'-HexaCB-(169)	2020/11/25		104	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2020/11/25		105	%	50 - 150
			HeptaCB-(180)+(193)	2020/11/25		86	%	50 - 150
			22'34'566'-HeptaCB-(188)	2020/11/25		111	%	50 - 150
			233'44'55'-HeptaCB-(189)	2020/11/25		105	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'55'66'-OctaCB-(202)	2020/11/25		111	%	50 - 150
			233'44'55'6-OctaCB-(205)	2020/11/25		111	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2020/11/25		95	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2020/11/25		103	%	50 - 150
			DecaCB-(209)	2020/11/25		108	%	50 - 150
7074061	CXU	Spiked Blank DUP 2	C13-2,44'-TriCB-(28)	2020/11/25		64	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/25		83	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2020/11/25		147	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2020/11/25		115	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2020/11/25		194 (7)	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2020/11/25		91	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2020/11/25		160 (8)	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2020/11/25		102	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2020/11/25		110	%	25 - 150
			C13-22'466'-PentaCB-(104)	2020/11/25		78	%	25 - 150
			C13-22'66'-TetraCB-(54)	2020/11/25		64	%	25 - 150
			C13-22'6-TriCB-(19)	2020/11/25		55	%	25 - 150
			C13-22'-DiCB-(4)	2020/11/25		45	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2020/11/25		87	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2020/11/25		112	%	25 - 150
			C13-233'44'-PentaCB-(105)	2020/11/25		81	%	25 - 150
			C13-233'55'-PentaCB-(111)	2020/11/25		86	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2020/11/25		76	%	25 - 150
			C13-2344'5-PentaCB-(114)	2020/11/25		80	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2020/11/25		79	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2020/11/25		81	%	25 - 150
			C13-2-MonoCB-(1)	2020/11/25		34	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2020/11/25		52	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2020/11/25		71	%	25 - 150
			C13-33'44'-TetraCB-(77)	2020/11/25		87	%	25 - 150
			C13-344'5-TetraCB-(81)	2020/11/25		86	%	25 - 150
			C13-344'-TriCB-(37)	2020/11/25		80	%	25 - 150
			C13-44'-DiCB-(15)	2020/11/25		60	%	25 - 150
			C13-4-MonoCB-(3)	2020/11/25		40	%	15 - 150
			C13-DecaCB-(209)	2020/11/25		75	%	25 - 150
			C13-HexaCB-(156)+(157)	2020/11/25		74	%	25 - 150
			2-MonoCB-(1)	2020/11/25		104	%	50 - 150
			3-MonoCB-(2)	2020/11/25		105	%	N/A
			4-MonoCB-(3)	2020/11/25		103	%	50 - 150
			22'-DiCB-(4)	2020/11/25		111	%	50 - 150
			2,3-DiCB-(5)	2020/11/25		78	%	N/A
			2,3'-DiCB-(6)	2020/11/25		84	%	N/A
			2,4-DiCB-(7)	2020/11/25		71	%	N/A
			2,4'-DiCB-(8)	2020/11/25		86	%	N/A
			2,5-DiCB-(9)	2020/11/25		93	%	N/A
			2,6-DiCB-(10)	2020/11/25		70	%	N/A
			3,3'-DiCB-(11)	2020/11/25		100	%	N/A
			DiCB-(12)+(13)	2020/11/25		97	%	N/A
			3,5-DiCB-(14)	2020/11/25		91	%	N/A
			4,4'-DiCB-(15)	2020/11/25		110	%	50 - 150
			22'3-TriCB-(16)	2020/11/25		73	%	N/A
			22'4-TriCB-(17)	2020/11/25		69	%	N/A
			TriCB-(18)+(30)	2020/11/25		69	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'6-TriCB-(19)	2020/11/25		105	%	50 - 150
			TriCB-(20) + (28)	2020/11/25		87	%	N/A
			TriCB-(21)+(33)	2020/11/25		83	%	N/A
			234'-TriCB-(22)	2020/11/25		88	%	N/A
			235-TriCB-(23)	2020/11/25		78	%	50 - 150
			236-TriCB-(24)	2020/11/25		70	%	N/A
			23'4-TriCB-(25)	2020/11/25		81	%	N/A
			TriCB-(26)+(29)	2020/11/25		83	%	N/A
			23'6-TriCB-(27)	2020/11/25		73	%	N/A
			24'5-TriCB-(31)	2020/11/25		85	%	N/A
			24'6-TriCB-(32)	2020/11/25		75	%	N/A
			23'5'-TriCB-(34)	2020/11/25		78	%	50 - 150
			33'4-TriCB-(35)	2020/11/25		99	%	N/A
			33'5-TriCB-(36)	2020/11/25		93	%	N/A
			344'-TriCB-(37)	2020/11/25		103	%	50 - 150
			345-TriCB-(38)	2020/11/25		97	%	N/A
			34'5-TriCB-(39)	2020/11/25		93	%	N/A
			TetraCB-(40)+(41)+(71)	2020/11/25		85	%	N/A
			22'34'-TetraCB-(42)	2020/11/25		77	%	N/A
			22'35-TetraCB-(43)	2020/11/25		73	%	N/A
			TetraCB-(44)+(47)+(65)	2020/11/25		80	%	N/A
			TetraCB-(45)+(51)	2020/11/25		74	%	N/A
			22'36'-TetraCB-(46)	2020/11/25		72	%	N/A
			22'45-TetraCB-(48)	2020/11/25		79	%	N/A
			TetraCB-(49)+TetraCB-(69)	2020/11/25		81	%	N/A
			TetraCB-(50)+(53)	2020/11/25		72	%	N/A
			22'55'-TetraCB-(52)	2020/11/25		83	%	N/A
			22'66'-TetraCB-(54)	2020/11/25		111	%	50 - 150
			233'4-TetraCB-(55)	2020/11/25		84	%	N/A
			233'4'-Tetra CB(56)	2020/11/25		96	%	N/A
			233'5-TetraCB-(57)	2020/11/25		91	%	N/A
			233'5'-TetraCB-(58)	2020/11/25		87	%	N/A
			TetraCB-(59)+(62)+(75)	2020/11/25		82	%	N/A
			2344'-TetraCB -(60)	2020/11/25		93	%	N/A
			TetraCB-(61)+(70)+(74)+(76)	2020/11/25		90	%	N/A
			234'5-TetraCB-(63)	2020/11/25		91	%	N/A
			234'6-TetraCB-(64)	2020/11/25		87	%	N/A
			23'44'-TetraCB-(66)	2020/11/25		95	%	N/A
			23'45-TetraCB-(67)	2020/11/25		88	%	N/A
			23'45'-TetraCB-(68)	2020/11/25		86	%	N/A
			23'55'-TetraCB-(72)	2020/11/25		89	%	N/A
			23'5'6-TetraCB-(73)	2020/11/25		79	%	N/A
			33'44'-TetraCB-(77)	2020/11/25		101	%	50 - 150
			33'45-TetraCB-(78)	2020/11/25		99	%	N/A
			33'45'-TetraCB(79)	2020/11/25		97	%	N/A
			33'55'-TetraCB-(80)	2020/11/25		88	%	N/A
			344'5-TetraCB-(81)	2020/11/25		108	%	50 - 150
			22'33'4-PentaCB-(82)	2020/11/25		89	%	N/A
			PentaCB-(83)+(99)	2020/11/25		97	%	N/A
			22'33'6-PentaCB-(84)	2020/11/25		86	%	N/A
			PentaCB-(85)+(116)+(117)	2020/11/25		95	%	N/A
			PentaCB-(86)(87)(97)(109)(119)(125)	2020/11/25		93	%	N/A
			PentaCB-(88)+(91)	2020/11/25		89	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'346'-PentaCB-(89)	2020/11/25		92	%	N/A
			PentaCB-(90)+(101)+(113)	2020/11/25		93	%	N/A
			22'355'-PentaCB-(92)	2020/11/25		92	%	N/A
			PentaCB-(93)+(98)+(100)+(102)	2020/11/25		87	%	N/A
			22'356'-PentaCB-(94)	2020/11/25		86	%	N/A
			22'35'6-PentaCB-(95)	2020/11/25		90	%	N/A
			22'366'-PentaCB-(96)	2020/11/25		84	%	N/A
			22'45'6-PentaCB-(103)	2020/11/25		89	%	N/A
			22'466'-PentaCB-(104)	2020/11/25		98	%	50 - 150
			233'44'-PentaCB-(105)	2020/11/25		114	%	50 - 150
			233'45-PentaCB-(106)	2020/11/25		87	%	N/A
			233'4'5-PentaCB-(107)	2020/11/25		102	%	N/A
			PentaCB-(108)+(124)	2020/11/25		94	%	N/A
			PentaCB-(110)+(115)	2020/11/25		89	%	N/A
			233'55'-PentaCB-(111)	2020/11/25		90	%	N/A
			233'56-PentaCB-(112)	2020/11/25		83	%	N/A
			2344'5-PentaCB-(114)	2020/11/25		114	%	50 - 150
			23'44'5-PentaCB-(118)	2020/11/25		110	%	50 - 150
			23'455'-PentaCB-(120)	2020/11/25		94	%	N/A
			23'45'6-PentaCB-(121)	2020/11/25		89	%	N/A
			233'4'5'-PentaCB-(122)	2020/11/25		97	%	N/A
			23'44'5'-PentaCB-(123)	2020/11/25		107	%	50 - 150
			33'44'5-PentaCB-(126)	2020/11/25		110	%	50 - 150
			33'455'-PentaCB-(127)	2020/11/25		87	%	N/A
			HexaCB-(128)+(166)	2020/11/25		107	%	N/A
			HexaCB-(129)+(138)+(163)	2020/11/25		111	%	N/A
			22'33'45'-HexaCB-(130)	2020/11/25		111	%	N/A
			22'33'46-HexaCB-(131)	2020/11/25		122	%	N/A
			22'33'46'-HexaCB-(132)	2020/11/25		117	%	N/A
			22'33'55'-HexaCB-(133)	2020/11/25		115	%	N/A
			HexaCB-(134)+(143)	2020/11/25		124	%	N/A
			HexaCB-(135)+(151)	2020/11/25		121	%	N/A
			22'33'66'-HexaCB-(136)	2020/11/25		125	%	N/A
			22'344'5-HexaCB-(137)	2020/11/25		106	%	N/A
			HexaCB-(139)+(140)	2020/11/25		120	%	N/A
			22'3455'-HexaCB-(141)	2020/11/25		97	%	N/A
			22'3456-HexaCB-(142)	2020/11/25		114	%	N/A
			22'345'6-HexaCB-(144)	2020/11/25		124	%	N/A
			22'3466'-HexaCB-(145)	2020/11/25		119	%	N/A
			22'34'55'-HexaCB-(146)	2020/11/25		109	%	N/A
			HexaCB-(147)+(149)	2020/11/25		125	%	N/A
			22'34'56'-HexaCB-(148)	2020/11/25		119	%	N/A
			22'34'66'-HexaCB-(150)	2020/11/25		122	%	N/A
			22'3566'-HexaCB-(152)	2020/11/25		118	%	N/A
			HexaCB-(153)+(168)	2020/11/25		114	%	N/A
			22'44'56'-HexaCB-(154)	2020/11/25		113	%	N/A
			22'44'66'-HexaCB-(155)	2020/11/25		102	%	50 - 150
			HexaCB-(156)+(157)	2020/11/25		101	%	50 - 150
			233'44'6-HexaCB-(158)	2020/11/25		99	%	N/A
			233'455'-HexaCB-(159)	2020/11/25		100	%	N/A
			233'456-HexaCB-(160)	2020/11/25		102	%	N/A
			233'45'6-HexaCB-(161)	2020/11/25		118	%	N/A
			233'4'55'-HexaCB-(162)	2020/11/25		93	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'4'5'6-HexaCB-(164)	2020/11/25		106	%	N/A
			233'55'6-HexaCB-(165)	2020/11/25		116	%	N/A
			23'44'55'-HexaCB-(167)	2020/11/25		107	%	50 - 150
			33'44'55'-HexaCB-(169)	2020/11/25		103	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2020/11/25		91	%	50 - 150
			HeptaCB-(171)+(173)	2020/11/25		104	%	N/A
			22'33'455'-HeptaCB-(172)	2020/11/25		95	%	N/A
			22'33'456'-HeptaCB-(174)	2020/11/25		98	%	N/A
			22'33'45'6-HeptaCB-(175)	2020/11/25		118	%	N/A
			22'33'466'-HeptaCB-(176)	2020/11/25		131	%	N/A
			22'33'45'6'-HeptaCB-(177)	2020/11/25		111	%	N/A
			22'33'55'6-HeptaCB-(178)	2020/11/25		117	%	N/A
			22'33'566'-HeptaCB-(179)	2020/11/25		133	%	N/A
			HeptaCB-(180)+(193)	2020/11/25		90	%	50 - 150
			22'344'56-HeptaCB-(181)	2020/11/25		106	%	N/A
			22'344'56'-HeptaCB-(182)	2020/11/25		112	%	50 - 150
			22'344'5'6-HeptaCB-(183)	2020/11/25		122	%	N/A
			22'344'66'-HeptaCB-(184)	2020/11/25		128	%	N/A
			22'3455'6-HeptaCB-(185)	2020/11/25		99	%	N/A
			22'34566'-HeptaCB-(186)	2020/11/25		124	%	N/A
			22'34'55'6-HeptaCB-(187)	2020/11/25		114	%	50 - 150
			22'34'566'-HeptaCB-(188)	2020/11/25		100	%	50 - 150
			233'44'55'-HeptaCB-(189)	2020/11/25		102	%	50 - 150
			233'44'56-HeptaCB-(190)	2020/11/25		84	%	N/A
			233'44'5'6-HeptaCB-(191)	2020/11/25		87	%	N/A
			233'455'6-HeptaCB-(192)	2020/11/25		92	%	N/A
			22'33'44'55'-OctaCB-(194)	2020/11/25		69	%	N/A
			22'33'44'56-OctaCB-(195)	2020/11/25		84	%	N/A
			22'33'44'56'-OctaCB-(196)	2020/11/25		93	%	N/A
			22'33'44'66'OctaCB-(197)	2020/11/25		111	%	N/A
			OctaCB-(198)+(199)	2020/11/25		89	%	N/A
			22'33'4566'-OctaCB-(200)	2020/11/25		114	%	N/A
			22'33'45'66'-OctaCB-(201)	2020/11/25		119	%	N/A
			22'33'55'66'-OctaCB-(202)	2020/11/25		95	%	50 - 150
			22'344'55'6-OctaCB-(203)	2020/11/25		83	%	N/A
			22'344'566'-OctaCB-(204)	2020/11/25		115	%	N/A
			233'44'55'6-OctaCB-(205)	2020/11/25		107	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2020/11/25		95	%	50 - 150
			22'33'44'566'-NonaCB-(207)	2020/11/25		101	%	N/A
			22'33'455'66'-NonaCB-(208)	2020/11/25		98	%	50 - 150
			DecaCB-(209)	2020/11/25		111	%	50 - 150
7074061	CXU	RPD	2-MonoCB-(1)	2020/11/25	0.89		%	30
			4-MonoCB-(3)	2020/11/25	0		%	30
			22'-DiCB-(4)	2020/11/25	1.7		%	30
			4,4'-DiCB-(15)	2020/11/25	0.90		%	30
			22'6-TriCB-(19)	2020/11/25	0.88		%	30
			344'-TriCB-(37)	2020/11/25	0.93		%	30
			22'66'-TetraCB-(54)	2020/11/25	0.90		%	30
			33'44'-TetraCB-(77)	2020/11/25	0		%	30
			344'5-TetraCB-(81)	2020/11/25	1.9		%	30
			22'466'-PentaCB-(104)	2020/11/25	2.7		%	30
			233'44'-PentaCB-(105)	2020/11/25	3.5		%	30
			2344'5-PentaCB-(114)	2020/11/25	1.8		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'44'5-PentaCB-(118)	2020/11/25	3.5		%	30
			23'44'5'-PentaCB-(123)	2020/11/25	1.7		%	30
			33'44'5-PentaCB-(126)	2020/11/25	5.4		%	30
			22'44'66'-HexaCB-(155)	2020/11/25	0.88		%	30
			HexaCB-(156)+(157)	2020/11/25	0.96		%	30
			23'44'55'-HexaCB-(167)	2020/11/25	0.95		%	30
			33'44'55'-HexaCB-(169)	2020/11/25	2.8		%	30
			22'33'44'5-HeptaCB-(170)	2020/11/25	4.7		%	30
			HeptaCB-(180)+(193)	2020/11/25	0		%	30
			22'34'566'-HeptaCB-(188)	2020/11/25	0		%	30
			233'44'55'-HeptaCB-(189)	2020/11/25	2.9		%	30
			22'33'55'66'-OctaCB-(202)	2020/11/25	0.90		%	30
			233'44'55'6-OctaCB-(205)	2020/11/25	0		%	30
			22'33'44'55'6-NonaCB-(206)	2020/11/25	6.1		%	30
			22'33'455'66'-NonaCB-(208)	2020/11/25	4.7		%	30
			DecaCB-(209)	2020/11/25	3.8		%	30
7074061	CXU	Method Blank	C13-2,44'-TriCB-(28)	2020/11/25		66	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2020/11/25		83	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2020/11/25		146	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2020/11/25		121	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2020/11/25		208 (7)	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2020/11/25		101	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2020/11/25		167 (8)	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2020/11/25		99	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2020/11/25		96	%	25 - 150
			C13-22'466'-PentaCB-(104)	2020/11/25		75	%	25 - 150
			C13-22'66'-TetraCB-(54)	2020/11/25		64	%	25 - 150
			C13-22'6-TriCB-(19)	2020/11/25		59	%	25 - 150
			C13-22'-DiCB-(4)	2020/11/25		49	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2020/11/25		97	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2020/11/25		109	%	25 - 150
			C13-233'44'-PentaCB-(105)	2020/11/25		85	%	25 - 150
			C13-233'55'-PentaCB-(111)	2020/11/25		95	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2020/11/25		77	%	25 - 150
			C13-2344'5-PentaCB-(114)	2020/11/25		84	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2020/11/25		85	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2020/11/25		86	%	25 - 150
			C13-2-MonoCB-(1)	2020/11/25		40	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2020/11/25		54	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2020/11/25		76	%	25 - 150
			C13-33'44'-TetraCB-(77)	2020/11/25		86	%	25 - 150
			C13-344'5-TetraCB-(81)	2020/11/25		84	%	25 - 150
			C13-344'-TriCB-(37)	2020/11/25		74	%	25 - 150
			C13-44'-DiCB-(15)	2020/11/25		59	%	25 - 150
			C13-4-MonoCB-(3)	2020/11/25		45	%	15 - 150
			C13-DecaCB-(209)	2020/11/25		73	%	25 - 150
			C13-HexaCB-(156)+(157)	2020/11/25		76	%	25 - 150
			2-MonoCB-(1)	2020/11/25	0.00025 U, EDL=0.00025		ng/g	
			3-MonoCB-(2)	2020/11/25	0.00022 U, EDL=0.00022		ng/g	
			4-MonoCB-(3)	2020/11/25	0.00024 U, EDL=0.00024		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'-DiCB-(4)	2020/11/25	0.00047 U, EDL=0.00047		ng/g	
			2,3-DiCB-(5)	2020/11/25	0.00012 U, EDL=0.00012		ng/g	
			2,3'-DiCB-(6)	2020/11/25	0.00012 U, EDL=0.00012		ng/g	
			2,4-DiCB-(7)	2020/11/25	0.00011 U, EDL=0.00011		ng/g	
			2,4'-DiCB-(8)	2020/11/25	0.00011 U, EDL=0.00011		ng/g	
			2,5-DiCB-(9)	2020/11/25	0.00013 U, EDL=0.00013		ng/g	
			2,6-DiCB-(10)	2020/11/25	0.00072 U, EDL=0.00072		ng/g	
			3,3'-DiCB-(11)	2020/11/25	0.00086 J, EDL=0.00012		ng/g	
			DiCB-(12)+(13)	2020/11/25	0.00012 U, EDL=0.00012		ng/g	
			3,5-DiCB-(14)	2020/11/25	0.00012 U, EDL=0.00012		ng/g	
			4,4'-DiCB-(15)	2020/11/25	0.00023 U, EDL=0.00023		ng/g	
			22'3-TriCB-(16)	2020/11/25	0.00042 U, EDL=0.00042		ng/g	
			22'4-TriCB-(17)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			TriCB-(18)+(30)	2020/11/25	0.00021 U, EDL=0.00021		ng/g	
			22'6-TriCB-(19)	2020/11/25	0.00017 U, EDL=0.00017		ng/g	
			TriCB-(20) + (28)	2020/11/25	0.00014 U, EDL=0.00014		ng/g	
			TriCB-(21)+(33)	2020/11/25	0.00014 U, EDL=0.00014		ng/g	
			234'-TriCB-(22)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			235-TriCB-(23)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			236-TriCB-(24)	2020/11/25	0.00016 U, EDL=0.00016		ng/g	
			23'4-TriCB-(25)	2020/11/25	0.00013 U, EDL=0.00013		ng/g	
			TriCB-(26)+(29)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			23'6-TriCB-(27)	2020/11/25	0.00018 U, EDL=0.00018		ng/g	
			24'5-TriCB-(31)	2020/11/25	0.00014 U, EDL=0.00014		ng/g	
			24'6-TriCB-(32)	2020/11/25	0.00017 U, EDL=0.00017		ng/g	
			23'5'-TriCB-(34)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			33'4-TriCB-(35)	2020/11/25	0.00016 U, EDL=0.00016		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			33'5-TriCB-(36)	2020/11/25	0.00013 U, EDL=0.00013		ng/g	
			344'-TriCB-(37)	2020/11/25	0.00029 U, EDL=0.00029		ng/g	
			345-TriCB-(38)	2020/11/25	0.00016 U, EDL=0.00016		ng/g	
			34'5-TriCB-(39)	2020/11/25	0.00014 U, EDL=0.00014		ng/g	
			TetraCB-(40)+(41)+(71)	2020/11/25	0.00028 U, EDL=0.00028		ng/g	
			22'34'-TetraCB-(42)	2020/11/25	0.00029 U, EDL=0.00029		ng/g	
			22'35-TetraCB-(43)	2020/11/25	0.00031 U, EDL=0.00031		ng/g	
			TetraCB-(44)+(47)+(65)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			TetraCB-(45)+(51)	2020/11/25	0.00028 U, EDL=0.00028		ng/g	
			22'36'-TetraCB-(46)	2020/11/25	0.00031 U, EDL=0.00031		ng/g	
			22'45-TetraCB-(48)	2020/11/25	0.00027 U, EDL=0.00027		ng/g	
			TetraCB-(49)+TetraCB-(69)	2020/11/25	0.00025 U, EDL=0.00025		ng/g	
			TetraCB-(50)+(53)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			22'55'-TetraCB-(52)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			22'66'-TetraCB-(54)	2020/11/25	0.00057 U, EDL=0.00057		ng/g	
			233'4-TetraCB-(55)	2020/11/25	0.00014 U, EDL=0.00014		ng/g	
			233'4'-Tetra CB(56)	2020/11/25	0.00017 U, EDL=0.00017		ng/g	
			233'5-TetraCB-(57)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			233'5'-TetraCB-(58)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			TetraCB-(59)+(62)+(75)	2020/11/25	0.00021 U, EDL=0.00021		ng/g	
			2344'-TetraCB -(60)	2020/11/25	0.00017 U, EDL=0.00017		ng/g	
			TetraCB-(61)+(70)+(74)+(76)	2020/11/25	0.00016 U, EDL=0.00016		ng/g	
			234'5-TetraCB-(63)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			234'6-TetraCB-(64)	2020/11/25	0.00022 U, EDL=0.00022		ng/g	
			23'44'-TetraCB-(66)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			23'45-TetraCB-(67)	2020/11/25	0.00013 U, EDL=0.00013		ng/g	
			23'45'-TetraCB-(68)	2020/11/25	0.00014 U, EDL=0.00014		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'55'-TetraCB-(72)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			23'5'6-TetraCB-(73)	2020/11/25	0.00022 U, EDL=0.00022		ng/g	
			33'44'-TetraCB-(77)	2020/11/25	0.00028 U, EDL=0.00028		ng/g	
			33'45-TetraCB-(78)	2020/11/25	0.00018 U, EDL=0.00018		ng/g	
			33'45'-TetraCB(79)	2020/11/25	0.00015 U, EDL=0.00015		ng/g	
			33'55'-TetraCB-(80)	2020/11/25	0.00013 U, EDL=0.00013		ng/g	
			344'5-TetraCB-(81)	2020/11/25	0.00027 U, EDL=0.00027		ng/g	
			22'33'4-PentaCB-(82)	2020/11/25	0.00028 U, EDL=0.00028		ng/g	
			PentaCB-(83)+(99)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			22'33'6-PentaCB-(84)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			PentaCB-(85)+(116)+(117)	2020/11/25	0.00021 U, EDL=0.00021		ng/g	
			PentaCB-(86)(87)(97)(109)(119)(125)	2020/11/25	0.00022 U, EDL=0.00022		ng/g	
			PentaCB-(88)+(91)	2020/11/25	0.00024 U, EDL=0.00024		ng/g	
			22'346'-PentaCB-(89)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			PentaCB-(90)+(101)+(113)	2020/11/25	0.00021 U, EDL=0.00021		ng/g	
			22'355'-PentaCB-(92)	2020/11/25	0.00025 U, EDL=0.00025		ng/g	
			PentaCB-(93)+(98)+(100)+(102)	2020/11/25	0.00024 U, EDL=0.00024		ng/g	
			22'356'-PentaCB-(94)	2020/11/25	0.00025 U, EDL=0.00025		ng/g	
			22'35'6-PentaCB-(95)	2020/11/25	0.00023 U, EDL=0.00023		ng/g	
			22'366'-PentaCB-(96)	2020/11/25	0.00054 U, EDL=0.00054		ng/g	
			22'45'6-PentaCB-(103)	2020/11/25	0.00022 U, EDL=0.00022		ng/g	
			22'466'-PentaCB-(104)	2020/11/25	0.00025 U, EDL=0.00025		ng/g	
			233'44'-PentaCB-(105)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			233'45-PentaCB-(106)	2020/11/25	0.00017 U, EDL=0.00017		ng/g	
			233'4'5-PentaCB-(107)	2020/11/25	0.00018 U, EDL=0.00018		ng/g	
			PentaCB-(108)+(124)	2020/11/25	0.00018 U, EDL=0.00018		ng/g	
			PentaCB-(110)+(115)	2020/11/25	0.00020 U, EDL=0.00020		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'55'-PentaCB-(111)	2020/11/25	0.00019 U, EDL=0.00019		ng/g	
			233'56-PentaCB-(112)	2020/11/25	0.00017 U, EDL=0.00017		ng/g	
			2344'5-PentaCB-(114)	2020/11/25	0.00025 U, EDL=0.00025		ng/g	
			23'44'5-PentaCB-(118)	2020/11/25	0.00026 U, EDL=0.00026		ng/g	
			23'455'-PentaCB-(120)	2020/11/25	0.00019 U, EDL=0.00019		ng/g	
			23'45'6-PentaCB-(121)	2020/11/25	0.00018 U, EDL=0.00018		ng/g	
			233'4'5'-PentaCB-(122)	2020/11/25	0.00020 U, EDL=0.00020		ng/g	
			23'44'5'-PentaCB-(123)	2020/11/25	0.00027 U, EDL=0.00027		ng/g	
			33'44'5-PentaCB-(126)	2020/11/25	0.00024 U, EDL=0.00024		ng/g	
			33'455'-PentaCB-(127)	2020/11/25	0.00020 U, EDL=0.00020		ng/g	
			HexaCB-(128)+(166)	2020/11/25	0.00044 U, EDL=0.00044		ng/g	
			HexaCB-(129)+(138)+(163)	2020/11/25	0.00046 U, EDL=0.00046		ng/g	
			22'33'45'-HexaCB-(130)	2020/11/25	0.00054 U, EDL=0.00054		ng/g	
			22'33'46-HexaCB-(131)	2020/11/25	0.00050 U, EDL=0.00050		ng/g	
			22'33'46'-HexaCB-(132)	2020/11/25	0.00047 U, EDL=0.00047		ng/g	
			22'33'55'-HexaCB-(133)	2020/11/25	0.00044 U, EDL=0.00044		ng/g	
			HexaCB-(134)+(143)	2020/11/25	0.00052 U, EDL=0.00052		ng/g	
			HexaCB-(135)+(151)	2020/11/25	0.00091 U, EDL=0.00091		ng/g	
			22'33'66'-HexaCB-(136)	2020/11/25	0.00067 U, EDL=0.00067		ng/g	
			22'344'5-HexaCB-(137)	2020/11/25	0.00052 U, EDL=0.00052		ng/g	
			HexaCB-(139)+(140)	2020/11/25	0.00039 U, EDL=0.00039		ng/g	
			22'3455'-HexaCB-(141)	2020/11/25	0.00040 U, EDL=0.00040		ng/g	
			22'3456-HexaCB-(142)	2020/11/25	0.00046 U, EDL=0.00046		ng/g	
			22'345'6-HexaCB-(144)	2020/11/25	0.00092 U, EDL=0.00092		ng/g	
			22'3466'-HexaCB-(145)	2020/11/25	0.00065 U, EDL=0.00065		ng/g	
			22'34'55'-HexaCB-(146)	2020/11/25	0.00039 U, EDL=0.00039		ng/g	
			HexaCB-(147)+(149)	2020/11/25	0.00042 U, EDL=0.00042		ng/g	

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'34'56'-HexaCB-(148)	2020/11/25	0.00088 U, EDL=0.00088		ng/g	
			22'34'66'-HexaCB-(150)	2020/11/25	0.00063 U, EDL=0.00063		ng/g	
			22'3566'-HexaCB-(152)	2020/11/25	0.00061 U, EDL=0.00061		ng/g	
			HexaCB-(153)+(168)	2020/11/25	0.00036 U, EDL=0.00036		ng/g	
			22'44'56'-HexaCB-(154)	2020/11/25	0.00074 U, EDL=0.00074		ng/g	
			22'44'66'-HexaCB-(155)	2020/11/25	0.00045 U, EDL=0.00045		ng/g	
			HexaCB-(156)+(157)	2020/11/25	0.00051 U, EDL=0.00051		ng/g	
			233'44'6-HexaCB-(158)	2020/11/25	0.00032 U, EDL=0.00032		ng/g	
			233'455'-HexaCB-(159)	2020/11/25	0.00034 U, EDL=0.00034		ng/g	
			233'456-HexaCB-(160)	2020/11/25	0.00036 U, EDL=0.00036		ng/g	
			233'45'6-HexaCB-(161)	2020/11/25	0.00032 U, EDL=0.00032		ng/g	
			233'4'55'-HexaCB-(162)	2020/11/25	0.00032 U, EDL=0.00032		ng/g	
			233'4'5'6-HexaCB-(164)	2020/11/25	0.00032 U, EDL=0.00032		ng/g	
			233'55'6-HexaCB-(165)	2020/11/25	0.00035 U, EDL=0.00035		ng/g	
			23'44'55'-HexaCB-(167)	2020/11/25	0.00049 U, EDL=0.00049		ng/g	
			33'44'55'-HexaCB-(169)	2020/11/25	0.00051 U, EDL=0.00051		ng/g	
			22'33'44'5-HeptaCB-(170)	2020/11/25	0.00046 U, EDL=0.00046		ng/g	
			HeptaCB-(171)+(173)	2020/11/25	0.00047 U, EDL=0.00047		ng/g	
			22'33'455'-HeptaCB-(172)	2020/11/25	0.00054 U, EDL=0.00054		ng/g	
			22'33'456'-HeptaCB-(174)	2020/11/25	0.00041 U, EDL=0.00041		ng/g	
			22'33'45'6-HeptaCB-(175)	2020/11/25	0.00060 U, EDL=0.00060		ng/g	
			22'33'466'-HeptaCB-(176)	2020/11/25	0.00043 U, EDL=0.00043		ng/g	
			22'33'45'6'-HeptaCB-(177)	2020/11/25	0.00049 U, EDL=0.00049		ng/g	
			22'33'55'6-HeptaCB-(178)	2020/11/25	0.00062 U, EDL=0.00062		ng/g	
			22'33'566'-HeptaCB-(179)	2020/11/25	0.00041 U, EDL=0.00041		ng/g	
			HeptaCB-(180)+(193)	2020/11/25	0.00044 U, EDL=0.00044		ng/g	
			22'344'56-HeptaCB-(181)	2020/11/25	0.00046 U, EDL=0.00046		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'344'56'-HeptaCB-(182)	2020/11/25	0.00057 U, EDL=0.00057		ng/g	
			22'344'5'6-HeptaCB-(183)	2020/11/25	0.00043 U, EDL=0.00043		ng/g	
			22'344'66'-HeptaCB-(184)	2020/11/25	0.00038 U, EDL=0.00038		ng/g	
			22'3455'6-HeptaCB-(185)	2020/11/25	0.00042 U, EDL=0.00042		ng/g	
			22'34566'-HeptaCB-(186)	2020/11/25	0.00044 U, EDL=0.00044		ng/g	
			22'34'55'6-HeptaCB-(187)	2020/11/25	0.00055 U, EDL=0.00055		ng/g	
			22'34'566'-HeptaCB-(188)	2020/11/25	0.00044 U, EDL=0.00044		ng/g	
			233'44'55'-HeptaCB-(189)	2020/11/25	0.0015 U, EDL=0.0015		ng/g	
			233'44'56-HeptaCB-(190)	2020/11/25	0.00049 U, EDL=0.00049		ng/g	
			233'44'5'6-HeptaCB-(191)	2020/11/25	0.00040 U, EDL=0.00040		ng/g	
			233'455'6-HeptaCB-(192)	2020/11/25	0.00042 U, EDL=0.00042		ng/g	
			22'33'44'55'-OctaCB-(194)	2020/11/25	0.0011 U, EDL=0.0011		ng/g	
			22'33'44'56-OctaCB-(195)	2020/11/25	0.0010 U, EDL=0.0010		ng/g	
			22'33'44'56'-OctaCB-(196)	2020/11/25	0.0012 U, EDL=0.0012		ng/g	
			22'33'44'66'OctaCB-(197)	2020/11/25	0.00066 U, EDL=0.00066		ng/g	
			OctaCB-(198)+(199)	2020/11/25	0.0010 U, EDL=0.0010		ng/g	
			22'33'4566'-OctaCB-(200)	2020/11/25	0.00063 U, EDL=0.00063		ng/g	
			22'33'45'66'-OctaCB-(201)	2020/11/25	0.00063 U, EDL=0.00063		ng/g	
			22'33'55'66'-OctaCB-(202)	2020/11/25	0.00069 U, EDL=0.00069		ng/g	
			22'344'55'6-OctaCB-(203)	2020/11/25	0.0010 U, EDL=0.0010		ng/g	
			22'344'566'-OctaCB-(204)	2020/11/25	0.00064 U, EDL=0.00064		ng/g	
			233'44'55'6-OctaCB-(205)	2020/11/25	0.0010 U, EDL=0.0010		ng/g	
			22'33'44'55'6-NonaCB-(206)	2020/11/25	0.0017 U, EDL=0.0017		ng/g	
			22'33'44'566'-NonaCB-(207)	2020/11/25	0.0013 U, EDL=0.0013		ng/g	
			22'33'455'66'-NonaCB-(208)	2020/11/25	0.0017 U, EDL=0.0017		ng/g	
			DecaCB-(209)	2020/11/25	0.0081 U, EDL=0.0081		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Total PCB	2020/11/25	0.000861		ng/g	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Internal standard recovery outside method criteria. No positive hits are detected corresponding to this internal

(3) Recovery exceeds method criteria and is possibly due to sample heterogeneity

(4) RT>2 seconds - PCDD/DF analysis-Peak maxima of monitored ions exceeds 2 seconds

(5) Internal standard recovery is outside method limits.

(6) Native recovery is outside method limits.

(7) High PCB202L recovery due to suppression of its recovery standard PCB194L. No affect to native results.

(8) High PCB180L recovery due to suppression of its recovery standard PCB194L. No affect to native results.

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Cathy Xu, Scientific Specialist, Ultra Trace Analysis, HRMS

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Melissa DiGrazia, Operations Manager, HRMS Department

Owen Cosby, BSc.C.Chem, Scientific Specialist, Ultra Trace Analysis, HRMS

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

22-Oct-20 13:16

Lori Dufour

C0R8571

GID ENV-1394

SUBCONTRACT ORDER

Apex Laboratories

A0J0663

10/20/20

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

International Solid Sample
Heat Treat Required
High Risk material
Controlled Storage and Disposal

Tracking #: 771865216820 ERS 10/21/20

Sample Name: SG04 **Sedimen** **Sampled: 10/16/20 14:00** (A0J0663-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/30/20 17:00	04/13/21 14:00	BV/ Maxxam -- Level 4 Data package
1668C PCB Congeners (SUB)	10/30/20 17:00	10/29/20 14:00	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: SG05 **Sedimen** **Sampled: 10/15/20 16:55** (A0J0663-08)

Analysis	Due	Expires	Comments
1668C PCB Congeners (SUB)	10/30/20 17:00	10/29/20 16:55	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: SG06 **Sedimen** **Sampled: 10/16/20 12:20** (A0J0663-12)

Analysis	Due	Expires	Comments
1668C PCB Congeners (SUB)	10/30/20 17:00	10/30/20 12:20	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: SG07 **Sedimen** **Sampled: 10/16/20 14:45** (A0J0663-16)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/30/20 17:00	04/14/21 14:45	BV/ Maxxam -- Level 4 Data package
1668C PCB Congeners (SUB)	10/30/20 17:00	10/30/20 14:45	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(C)8 oz Glass Jar

Standard TAT

Released By	Date	Received By	Date
	10/21/20	Fed Ex (Shipper)	
Fed Ex (Shipper)			4.6/5.6/3.0
Released By	Date	Received By	Date 1316

SUBCONTRACT ORDER

Apex Laboratories

CD 10/20/20 **A0J0663**

Sample Name: EB Sediment **Water** **Sampled: 10/16/20 17:10** (A0J0663-17)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/30/20 17:00	04/14/21 17:10	BV/ Maxxam -- Level 4 Data package
1668C PCB Congeners (SUB)	10/30/20 17:00	10/23/20 17:10	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(B)1 L Amber Glass - Non Preserved
(C)1 L Amber Glass - Non Preserved

Sample Name: Dup-6 **Sedimen** **Sampled: 10/16/20 00:00** (A0J0663-18)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/30/20 17:00	04/14/21 00:00	BV/ Maxxam -- Level 4 Data package
1668C PCB Congeners (SUB)	10/30/20 17:00	10/30/20 00:00	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-18L-OM **Sedimen** **Sampled: 10/16/20 15:50** (A0J0663-19)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/30/20 17:00	04/14/21 15:50	BV/ Maxxam -- Level 4 Data package
1668C PCB Congeners (SUB)	10/30/20 17:00	10/30/20 15:50	BV/Maxxam--- 1668C method Level 4 Data Package

Containers Supplied:
(C)8 oz Glass Jar

Standard TAT

Released By	Date	Received By	Date
	10/21/20	Fed Ex (Shipper)	
Fed Ex (Shipper)			
Released By	Date	Received By	Date
			10/21/20 1316

4.8 | 5.8 | 3.0

Your Project #: A0J0312
Your C.O.C. #: n/a

Attention: Darrell Auvil

Apex Laboratories
6700 SW Sandburg St.
Tigard, OR
USA 97223

Report Date: 2021/02/25
Report #: R6533058
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C118615
Received: 2021/01/22, 12:30

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Dioxins/Furans in Soil (1613B) (1)	1	2021/02/01	2021/02/17	BRL SOP-00410	EPA 1613B m
2378TCDF Confirmation (M8290A/M1613)	1	2021/02/01	2021/02/18	BRL SOP-00406	EPA M8290A / M1613
Moisture	1	N/A	2021/01/26	CAM SOP-00445	Carter 2nd ed 51.2 m
PCB Congeners in Soil (1668C) (2)	1	2021/02/10	2021/02/22	BRL SOP-00408	EPA 1668C m

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Soils are reported on a dry weight basis unless otherwise specified.

Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.
(2) Soils are reported on a dry weight basis unless otherwise specified.
U = Undetected at the limit of quantitation.
J = Estimated concentration between the EDL & RDL.
B = Blank Contamination.
Q = One or more quality control criteria failed.
E = Analyte concentration exceeds the maximum concentration level.
K = Estimated maximum possible concentration due to ion abundance ratio failure.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Lori Dufour, Project Manager
Email: Lori.Dufour@bureauveritas.com
Phone# (905) 817-5700
==========
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF SOIL

BV Labs ID		ORB979			
Sampling Date		2020/10/08 10:25			
COC Number		n/a			
	UNITS	T4RB-17L	RDL	MDL	QC Batch
Moisture	%	38	1.0	0.50	7169520

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	1.46 U	1.46	9.99	0.0400	1.00	1.46	N/A	7190267
1,2,3,7,8-Penta CDD *	pg/g	6.47 J	1.36	50.0	0.0400	1.00	6.47	N/A	7190267
1,2,3,4,7,8-Hexa CDD *	pg/g	11.1 J	1.29	50.0	0.0400	0.100	1.11	N/A	7190267
1,2,3,6,7,8-Hexa CDD *	pg/g	45.5 J	1.29	50.0	0.0400	0.100	4.55	N/A	7190267
1,2,3,7,8,9-Hexa CDD *	pg/g	29.5 J	1.37	50.0	0.0400	0.100	2.95	N/A	7190267
1,2,3,4,6,7,8-Hepta CDD *	pg/g	1710	1.57	50.0	0.0400	0.0100	17.1	N/A	7190267
Octa CDD *	pg/g	15800	1.77	99.9	0.0799	0.000300	4.74	N/A	7190267
Total Tetra CDD *	pg/g	1.46 U	1.46	9.99	0.0400	N/A	N/A	0	7190267
Total Penta CDD *	pg/g	16.0 J	1.36	50.0	0.0400	N/A	N/A	3	7190267
Total Hexa CDD *	pg/g	357	1.33	50.0	0.0400	N/A	N/A	8	7190267
Total Hepta CDD *	pg/g	3890	1.57	50.0	0.0400	N/A	N/A	2	7190267
2,3,7,8-Tetra CDF **	pg/g	4.39 J	1.23	9.99	0.0400	0.100	0.439	N/A	7190267
1,2,3,7,8-Penta CDF **	pg/g	1.10 U	1.10	50.0	0.0400	0.0300	0.0330	N/A	7190267
2,3,4,7,8-Penta CDF **	pg/g	13.8 J	1.00	50.0	0.0400	0.300	4.14	N/A	7190267
1,2,3,4,7,8-Hexa CDF **	pg/g	68.0	1.11	50.0	0.0400	0.100	6.80	N/A	7190267
1,2,3,6,7,8-Hexa CDF **	pg/g	14.5 J	1.13	50.0	0.0400	0.100	1.45	N/A	7190267
2,3,4,6,7,8-Hexa CDF **	pg/g	8.27 J	1.07	50.0	0.0400	0.100	0.827	N/A	7190267
1,2,3,7,8,9-Hexa CDF **	pg/g	1.14 U	1.14	50.0	0.0400	0.100	0.114	N/A	7190267
1,2,3,4,6,7,8-Hepta CDF **	pg/g	282	1.35	50.0	0.0400	0.0100	2.82	N/A	7190267
1,2,3,4,7,8,9-Hepta CDF **	pg/g	26.6 J	1.30	50.0	0.0400	0.0100	0.266	N/A	7190267
Octa CDF **	pg/g	1250	1.72	99.9	0.0799	0.000300	0.375	N/A	7190267
Total Tetra CDF **	pg/g	15.4	1.23	9.99	0.0400	N/A	N/A	5	7190267
Total Penta CDF **	pg/g	175	1.05	50.0	0.0400	N/A	N/A	7	7190267
Total Hexa CDF **	pg/g	540	1.11	50.0	0.0400	N/A	N/A	9	7190267
Total Hepta CDF **	pg/g	1270	1.32	50.0	0.0400	N/A	N/A	3	7190267
Confirmation 2,3,7,8-Tetra CDF **	pg/g	2.45	0.10	1.0	0.18	0.100	0.245	N/A	7213064
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	55.5	N/A	N/A

EDL = Estimated Detection Limit
RDL = Reportable Detection Limit
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin
N/A = Not Applicable
** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	58	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234678 HeptaCDD *	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234678 HeptaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123478 HexaCDD *	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123478 HexaCDF **	%	72	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234789 HeptaCDF **	%	62	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123678 HexaCDD *	%	81	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123678 HexaCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-12378 PentaCDD *	%	55	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-12378 PentaCDF **	%	56	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123789 HexaCDF **	%	80	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-234678 HexaCDF **	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-23478 PentaCDF **	%	58	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-2378 TetraCDD *	%	58	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-2378 TetraCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-OCDD *	%	53	N/A	N/A	N/A	N/A	N/A	N/A	7190267
Confirmation C13-2378 TetraCDF **	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7213064

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TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/g	1.41 U	1.41	9.97	0.0399	1.00	1.41	N/A	7190267
1,2,3,7,8-Penta CDD *	pg/g	8.15 J	1.42	49.9	0.0399	1.00	8.15	N/A	7190267
1,2,3,4,7,8-Hexa CDD *	pg/g	16.8 J	0.993	49.9	0.0399	0.100	1.68	N/A	7190267
1,2,3,6,7,8-Hexa CDD *	pg/g	63.6	0.999	49.9	0.0399	0.100	6.36	N/A	7190267
1,2,3,7,8,9-Hexa CDD *	pg/g	42.5 J	1.06	49.9	0.0399	0.100	4.25	N/A	7190267
1,2,3,4,6,7,8-Hepta CDD *	pg/g	2450 (1)	1.44	49.9	0.0399	0.0100	24.5	N/A	7190267
Octa CDD *	pg/g	20700 (1)	2.21	99.7	0.0798	0.000300	6.21	N/A	7190267
Total Tetra CDD *	pg/g	1.83 U (2)	1.83	9.97	0.0399	N/A	N/A	0	7190267
Total Penta CDD *	pg/g	24.6 J	1.42	49.9	0.0399	N/A	N/A	4	7190267
Total Hexa CDD *	pg/g	464 (1)	1.03	49.9	0.0399	N/A	N/A	8	7190267
Total Hepta CDD *	pg/g	5500 (1)	1.44	49.9	0.0399	N/A	N/A	2	7190267
2,3,7,8-Tetra CDF **	pg/g	5.68 J	1.11	9.97	0.0399	0.100	0.568	N/A	7190267
1,2,3,7,8-Penta CDF **	pg/g	6.82 J	1.31	49.9	0.0399	0.0300	0.205	N/A	7190267
2,3,4,7,8-Penta CDF **	pg/g	16.2 J	1.20	49.9	0.0399	0.300	4.86	N/A	7190267
1,2,3,4,7,8-Hexa CDF **	pg/g	84.5	1.43	49.9	0.0399	0.100	8.45	N/A	7190267
1,2,3,6,7,8-Hexa CDF **	pg/g	17.0 J	1.47	49.9	0.0399	0.100	1.70	N/A	7190267
2,3,4,6,7,8-Hexa CDF **	pg/g	13.1 J	1.39	49.9	0.0399	0.100	1.31	N/A	7190267
1,2,3,7,8,9-Hexa CDF **	pg/g	1.48 U	1.48	49.9	0.0399	0.100	0.148	N/A	7190267
1,2,3,4,6,7,8-Hepta CDF **	pg/g	372	1.36	49.9	0.0399	0.0100	3.72	N/A	7190267
1,2,3,4,7,8,9-Hepta CDF **	pg/g	35.8 J	1.32	49.9	0.0399	0.0100	0.358	N/A	7190267
Octa CDF **	pg/g	1740 (1)	1.68	99.7	0.0798	0.000300	0.522	N/A	7190267
Total Tetra CDF **	pg/g	12.9	1.11	9.97	0.0399	N/A	N/A	4	7190267
Total Penta CDF **	pg/g	249	1.25	49.9	0.0399	N/A	N/A	7	7190267
Total Hexa CDF **	pg/g	740 (1)	1.44	49.9	0.0399	N/A	N/A	10	7190267
Total Hepta CDF **	pg/g	1670 (1)	1.34	49.9	0.0399	N/A	N/A	3	7190267
Confirmation 2,3,7,8-Tetra CDF **	pg/g	3.21	0.095	1.0	0.18	0.100	0.321	N/A	7213064

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Lab-Dup = Laboratory Initiated Duplicate

* CDD = Chloro Dibenzo-p-Dioxin

N/A = Not Applicable

** CDF = Chloro Dibenzo-p-Furan

(1) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L Lab-Dup	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
TOTAL TOXIC EQUIVALENCY	pg/g	N/A	N/A	N/A	N/A	N/A	74.2	N/A	N/A
Surrogate Recovery (%)									
37CL4 2378 Tetra CDD *	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234678 HeptaCDD *	%	53	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234678 HeptaCDF **	%	60	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123478 HexaCDD *	%	65	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123478 HexaCDF **	%	67	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-1234789 HeptaCDF **	%	60	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123678 HexaCDD *	%	76	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123678 HexaCDF **	%	64	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-12378 PentaCDD *	%	49	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-12378 PentaCDF **	%	51	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-123789 HexaCDF **	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-234678 HexaCDF **	%	63	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-23478 PentaCDF **	%	53	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-2378 TetraCDD *	%	55	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-2378 TetraCDF **	%	71	N/A	N/A	N/A	N/A	N/A	N/A	7190267
C13-OCDD *	%	43	N/A	N/A	N/A	N/A	N/A	N/A	7190267
Confirmation C13-2378 TetraCDF **	%	106	N/A	N/A	N/A	N/A	N/A	N/A	7213064

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/g	0.0326	0.00021	0.0020	0.0026	N/A	N/A	N/A	7210685
3-MonoCB-(2)	ng/g	0.0131	0.00019	0.0020	0.0038	N/A	N/A	N/A	7210685
4-MonoCB-(3)	ng/g	0.0273	0.00020	0.0050	0.0035	N/A	N/A	N/A	7210685
22'-DiCB-(4)	ng/g	0.168	0.00057	0.0050	0.0040	N/A	N/A	N/A	7210685
2,3-DiCB-(5)	ng/g	0.00030 U	0.00030	0.0050	0.015	N/A	N/A	N/A	7210685
2,3'-DiCB-(6)	ng/g	0.0939	0.00029	0.0020	0.0034	N/A	N/A	N/A	7210685
2,4-DiCB-(7)	ng/g	0.0148	0.00029	0.0020	0.0064	N/A	N/A	N/A	7210685
2,4'-DiCB-(8)	ng/g	0.396	0.00030	0.0050	0.016	N/A	N/A	N/A	7210685
2,5-DiCB-(9)	ng/g	0.0238	0.00030	0.0020	0.0019	N/A	N/A	N/A	7210685
2,6-DiCB-(10)	ng/g	0.0060 U (1)	0.0060	0.0050	0.0042	N/A	N/A	N/A	7210685
3,3'-DiCB-(11)	ng/g	0.134	0.00030	0.010	0.034	N/A	N/A	N/A	7210685
DiCB-(12)+(13)	ng/g	0.0534	0.00031	0.0050	0.011	N/A	N/A	N/A	7210685
3,5-DiCB-(14)	ng/g	0.00029 U	0.00029	0.0020	0.0033	N/A	N/A	N/A	7210685
4,4'-DiCB-(15)	ng/g	0.419	0.00048	0.0050	0.0039	N/A	N/A	N/A	7210685
22'3-TriCB-(16)	ng/g	0.230	0.00088	0.0050	0.013	N/A	N/A	N/A	7210685
22'4-TriCB-(17)	ng/g	0.185	0.00068	0.0020	0.0040	N/A	N/A	N/A	7210685
TriCB-(18)+(30)	ng/g	0.365	0.00050	0.0050	0.0052	N/A	N/A	N/A	7210685
22'6-TriCB-(19)	ng/g	0.0484	0.00047	0.0020	0.0052	N/A	N/A	N/A	7210685
TriCB-(20) + (28)	ng/g	0.817	0.00032	0.0050	0.0090	N/A	N/A	N/A	7210685
TriCB-(21)+(33)	ng/g	0.400	0.00033	0.0050	0.011	N/A	N/A	N/A	7210685
234'-TriCB-(22)	ng/g	0.299	0.00035	0.0020	0.0049	N/A	N/A	N/A	7210685
235-TriCB-(23)	ng/g	0.00037 U	0.00037	0.0020	0.0046	N/A	N/A	N/A	7210685
236-TriCB-(24)	ng/g	0.00296	0.00042	0.0020	0.0090	N/A	N/A	N/A	7210685
23'4-TriCB-(25)	ng/g	0.0538	0.00030	0.0020	0.0064	N/A	N/A	N/A	7210685
TriCB-(26)+(29)	ng/g	0.125	0.00033	0.0050	0.0087	N/A	N/A	N/A	7210685
23'6-TriCB-(27)	ng/g	0.0278	0.00043	0.0020	0.0065	N/A	N/A	N/A	7210685
24'5-TriCB-(31)	ng/g	0.646	0.00030	0.0050	0.0038	N/A	N/A	N/A	7210685
24'6-TriCB-(32)	ng/g	0.110	0.00042	0.0020	0.0024	N/A	N/A	N/A	7210685
23'5'-TriCB-(34)	ng/g	0.00174 J	0.00032	0.0020	0.0060	N/A	N/A	N/A	7210685
33'4-TriCB-(35)	ng/g	0.0195	0.00034	0.0020	0.0042	N/A	N/A	N/A	7210685

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/g	0.00029 U	0.00029	0.0020	0.0029	N/A	N/A	N/A	7210685
344'-TriCB-(37)	ng/g	0.487	0.00053	0.0020	0.0029	N/A	N/A	N/A	7210685
345-TriCB-(38)	ng/g	0.00033 U	0.00033	0.0020	0.0038	N/A	N/A	N/A	7210685
34'5-TriCB-(39)	ng/g	0.0020 U (1)	0.0020	0.0020	0.0052	N/A	N/A	N/A	7210685
TetraCB-(40)+(41)+(71)	ng/g	0.310	0.00090	0.010	0.016	N/A	N/A	N/A	7210685
22'34'-TetraCB-(42)	ng/g	0.164	0.00098	0.0050	0.014	N/A	N/A	N/A	7210685
22'35-TetraCB-(43)	ng/g	0.0226	0.0012	0.0050	0.019	N/A	N/A	N/A	7210685
TetraCB-(44)+(47)+(65)	ng/g	0.740	0.00082	0.010	0.041	N/A	N/A	N/A	7210685
TetraCB-(45)+(51)	ng/g	0.0974	0.00092	0.0050	0.018	N/A	N/A	N/A	7210685
22'36'-TetraCB-(46)	ng/g	0.0345	0.0011	0.0020	0.0090	N/A	N/A	N/A	7210685
22'45-TetraCB-(48)	ng/g	0.0995	0.00092	0.0050	0.0042	N/A	N/A	N/A	7210685
TetraCB-(49)+TetraCB-(69)	ng/g	0.431	0.00078	0.010	0.010	N/A	N/A	N/A	7210685
TetraCB-(50)+(53)	ng/g	0.0772	0.00088	0.010	0.013	N/A	N/A	N/A	7210685
22'55'-TetraCB-(52)	ng/g	1.26	0.00091	0.0050	0.016	N/A	N/A	N/A	7210685
22'66'-TetraCB-(54)	ng/g	0.00028 U	0.00028	0.0050	0.0096	N/A	N/A	N/A	7210685
233'4-TetraCB-(55)	ng/g	0.00068 U	0.00068	0.0050	0.011	N/A	N/A	N/A	7210685
233'4'-Tetra CB(56)	ng/g	0.258	0.00066	0.0050	0.0051	N/A	N/A	N/A	7210685
233'5-TetraCB-(57)	ng/g	0.00163 J	0.00064	0.0050	0.0056	N/A	N/A	N/A	7210685
233'5'-TetraCB-(58)	ng/g	0.00069 U	0.00069	0.0050	0.011	N/A	N/A	N/A	7210685
TetraCB-(59)+(62)+(75)	ng/g	0.0583	0.00068	0.010	0.014	N/A	N/A	N/A	7210685
2344'-TetraCB -(60)	ng/g	0.158	0.00068	0.0050	0.0053	N/A	N/A	N/A	7210685
TetraCB-(61)+(70)+(74)+(76)	ng/g	1.37	0.00063	0.020	0.022	N/A	N/A	N/A	7210685
234'5-TetraCB-(63)	ng/g	0.0238	0.00061	0.0050	0.0071	N/A	N/A	N/A	7210685
234'6-TetraCB-(64)	ng/g	0.469	0.00074	0.0050	0.0047	N/A	N/A	N/A	7210685
23'44'-TetraCB-(66)	ng/g	0.656	0.00061	0.0050	0.099	N/A	N/A	N/A	7210685
23'45-TetraCB-(67)	ng/g	0.0176	0.00058	0.0050	0.011	N/A	N/A	N/A	7210685
23'45'-TetraCB-(68)	ng/g	0.00286 J	0.00060	0.0050	0.0088	N/A	N/A	N/A	7210685
23'55'-TetraCB-(72)	ng/g	0.00433 J	0.00060	0.0050	0.0086	N/A	N/A	N/A	7210685
23'5'6-TetraCB-(73)	ng/g	0.00062 U	0.00062	0.0050	0.019	N/A	N/A	N/A	7210685
33'44'-TetraCB-(77)	ng/g	0.188	0.00092	0.0050	0.0063	0.000100	0.0000188	N/A	7210685

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45-TetraCB-(78)	ng/g	0.00065 U	0.00065	0.0050	0.0065	N/A	N/A	N/A	7210685
33'45'-TetraCB(79)	ng/g	0.0115	0.00060	0.0050	0.0058	N/A	N/A	N/A	7210685
33'55'-TetraCB-(80)	ng/g	0.00058 U	0.00058	0.0050	0.0061	N/A	N/A	N/A	7210685
344'5-TetraCB-(81)	ng/g	0.00818	0.00089	0.0050	0.0058	0.000300	0.00000245	N/A	7210685
22'33'4-PentaCB-(82)	ng/g	0.262	0.0013	0.0050	0.0048	N/A	N/A	N/A	7210685
PentaCB-(83)+(99)	ng/g	1.34	0.0012	0.010	0.016	N/A	N/A	N/A	7210685
22'33'6-PentaCB-(84)	ng/g	0.619	0.0013	0.0020	0.0077	N/A	N/A	N/A	7210685
PentaCB-(85)+(116)+(117)	ng/g	0.400	0.00098	0.010	0.027	N/A	N/A	N/A	7210685
PentaCB-(86)(87)(97)(109)(119)(125)	ng/g	1.46	0.00098	0.020	0.029	N/A	N/A	N/A	7210685
PentaCB-(88)+(91)	ng/g	0.400	0.0012	0.0050	0.013	N/A	N/A	N/A	7210685
22'346'-PentaCB-(89)	ng/g	0.0174	0.0012	0.0050	0.0080	N/A	N/A	N/A	7210685
PentaCB-(90)+(101)+(113)	ng/g	2.32	0.0010	0.020	0.011	N/A	N/A	N/A	7210685
22'355'-PentaCB-(92)	ng/g	0.444	0.0012	0.0050	0.0044	N/A	N/A	N/A	7210685
PentaCB-(93)+(98)+(100)+(102)	ng/g	0.0759	0.0011	0.020	0.024	N/A	N/A	N/A	7210685
22'356'-PentaCB-(94)	ng/g	0.0099	0.0013	0.0050	0.0063	N/A	N/A	N/A	7210685
22'35'6-PentaCB-(95)	ng/g	2.08	0.0011	0.0050	0.0088	N/A	N/A	N/A	7210685
22'366'-PentaCB-(96)	ng/g	0.0135	0.00037	0.0050	0.010	N/A	N/A	N/A	7210685
22'45'6-PentaCB-(103)	ng/g	0.0105	0.0011	0.0050	0.0061	N/A	N/A	N/A	7210685
22'466'-PentaCB-(104)	ng/g	0.00023 U	0.00023	0.0050	0.0056	N/A	N/A	N/A	7210685
233'44'-PentaCB-(105)	ng/g	1.13	0.0011	0.0050	0.0044	0.0000300	0.0000339	N/A	7210685
233'45-PentaCB-(106)	ng/g	0.00082 U	0.00082	0.0050	0.0036	N/A	N/A	N/A	7210685
233'4'5-PentaCB-(107)	ng/g	0.199	0.00096	0.0050	0.017	N/A	N/A	N/A	7210685
PentaCB-(108)+(124)	ng/g	0.0876	0.00090	0.010	0.011	N/A	N/A	N/A	7210685
PentaCB-(110)+(115)	ng/g	4.32	0.00086	0.010	0.012	N/A	N/A	N/A	7210685
233'55'-PentaCB-(111)	ng/g	0.0020 U (1)	0.0020	0.0050	0.0056	N/A	N/A	N/A	7210685
233'56-PentaCB-(112)	ng/g	0.00086 U	0.00086	0.0050	0.0078	N/A	N/A	N/A	7210685
2344'5-PentaCB-(114)	ng/g	0.103	0.0011	0.0050	0.0042	0.0000300	0.00000309	N/A	7210685
23'44'5-PentaCB-(118)	ng/g	2.60	0.0011	0.0010	0.0066	0.0000300	0.0000780	N/A	7210685
23'455'-PentaCB-(120)	ng/g	0.00471 J	0.00084	0.0050	0.0064	N/A	N/A	N/A	7210685
23'45'6-PentaCB-(121)	ng/g	0.00088 U	0.00088	0.0050	0.0063	N/A	N/A	N/A	7210685

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'5'-PentaCB-(122)	ng/g	0.0432	0.0010	0.0050	0.0066	N/A	N/A	N/A	7210685
23'44'5'-PentaCB-(123)	ng/g	0.0565	0.0011	0.0050	0.014	0.0000300	0.00000170	N/A	7210685
33'44'5-PentaCB-(126)	ng/g	0.0789	0.0010	0.0050	0.0030	0.100	0.00789	N/A	7210685
33'455'-PentaCB-(127)	ng/g	0.00624	0.00083	0.0050	0.0032	N/A	N/A	N/A	7210685
HexaCB-(128)+(166)	ng/g	1.20	0.0018	0.010	0.021	N/A	N/A	N/A	7210685
HexaCB-(129)+(138)+(163)	ng/g	6.56	0.0019	0.020	0.037	N/A	N/A	N/A	7210685
22'33'45'-HexaCB-(130)	ng/g	0.422	0.0023	0.0050	0.0051	N/A	N/A	N/A	7210685
22'33'46-HexaCB-(131)	ng/g	0.0792	0.0027	0.0050	0.0099	N/A	N/A	N/A	7210685
22'33'46'-HexaCB-(132)	ng/g	2.22	0.0024	0.0050	0.0087	N/A	N/A	N/A	7210685
22'33'55'-HexaCB-(133)	ng/g	0.0755	0.0023	0.0050	0.010	N/A	N/A	N/A	7210685
HexaCB-(134)+(143)	ng/g	0.199	0.0024	0.010	0.017	N/A	N/A	N/A	7210685
HexaCB-(135)+(151)	ng/g	1.71	0.00095	0.020	0.014	N/A	N/A	N/A	7210685
22'33'66'-HexaCB-(136)	ng/g	0.526	0.00067	0.0050	0.0083	N/A	N/A	N/A	7210685
22'344'5-HexaCB-(137)	ng/g	0.289	0.0024	0.010	0.030	N/A	N/A	N/A	7210685
HexaCB-(139)+(140)	ng/g	0.106	0.0021	0.010	0.016	N/A	N/A	N/A	7210685
22'3455'-HexaCB-(141)	ng/g	0.966	0.0020	0.0050	0.012	N/A	N/A	N/A	7210685
22'3456-HexaCB-(142)	ng/g	0.0023 U	0.0023	0.0050	0.0088	N/A	N/A	N/A	7210685
22'345'6-HexaCB-(144)	ng/g	0.219	0.00097	0.0050	0.0072	N/A	N/A	N/A	7210685
22'3466'-HexaCB-(145)	ng/g	0.00071 U	0.00071	0.0050	0.0082	N/A	N/A	N/A	7210685
22'34'55'-HexaCB-(146)	ng/g	0.699	0.0017	0.0050	0.010	N/A	N/A	N/A	7210685
HexaCB-(147)+(149)	ng/g	3.91	0.0020	0.010	0.019	N/A	N/A	N/A	7210685
22'34'56'-HexaCB-(148)	ng/g	0.00622	0.00094	0.0050	0.0084	N/A	N/A	N/A	7210685
22'34'66'-HexaCB-(150)	ng/g	0.00528	0.00069	0.0050	0.0061	N/A	N/A	N/A	7210685
22'3566'-HexaCB-(152)	ng/g	0.00316 J	0.00066	0.0050	0.013	N/A	N/A	N/A	7210685
HexaCB-(153)+(168)	ng/g	4.27	0.0016	0.010	0.013	N/A	N/A	N/A	7210685
22'44'56'-HexaCB-(154)	ng/g	0.0545	0.00084	0.0050	0.012	N/A	N/A	N/A	7210685
22'44'66'-HexaCB-(155)	ng/g	0.00049 U	0.00049	0.0050	0.0087	N/A	N/A	N/A	7210685
HexaCB-(156)+(157)	ng/g	0.830	0.0014	0.010	0.0086	0.0000300	0.0000249	N/A	7210685
233'44'6-HexaCB-(158)	ng/g	0.610	0.0014	0.0050	0.0072	N/A	N/A	N/A	7210685
233'455'-HexaCB-(159)	ng/g	0.0407	0.0011	0.0050	0.0082	N/A	N/A	N/A	7210685
233'456-HexaCB-(160)	ng/g	0.0016 U	0.0016	0.0050	0.017	N/A	N/A	N/A	7210685

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'45'6-HexaCB-(161)	ng/g	0.0015 U	0.0015	0.0050	0.011	N/A	N/A	N/A	7210685
233'4'55'-HexaCB-(162)	ng/g	0.0506	0.0011	0.0050	0.0083	N/A	N/A	N/A	7210685
233'4'5'6-HexaCB-(164)	ng/g	0.524	0.0014	0.0050	0.017	N/A	N/A	N/A	7210685
233'55'6-HexaCB-(165)	ng/g	0.0016 U	0.0016	0.0050	0.010	N/A	N/A	N/A	7210685
23'44'55'-HexaCB-(167)	ng/g	0.332	0.0013	0.0050	0.0056	0.0000300	0.00000996	N/A	7210685
33'44'55'-HexaCB-(169)	ng/g	0.0073 U	0.0073	0.0050	0.024	0.0300	0.000219	N/A	7210685
22'33'44'5-HeptaCB-(170)	ng/g	1.51	0.0012	0.0050	0.0042	N/A	N/A	N/A	7210685
HeptaCB-(171)+(173)	ng/g	0.417	0.0014	0.010	0.011	N/A	N/A	N/A	7210685
22'33'455'-HeptaCB-(172)	ng/g	0.235	0.0015	0.0050	0.0080	N/A	N/A	N/A	7210685
22'33'456'-HeptaCB-(174)	ng/g	1.38	0.0012	0.0050	0.014	N/A	N/A	N/A	7210685
22'33'45'6-HeptaCB-(175)	ng/g	0.0606	0.0012	0.0050	0.0092	N/A	N/A	N/A	7210685
22'33'466'-HeptaCB-(176)	ng/g	0.137	0.00090	0.0050	0.0098	N/A	N/A	N/A	7210685
22'33'45'6'-HeptaCB-(177)	ng/g	0.823	0.0014	0.0050	0.0078	N/A	N/A	N/A	7210685
22'33'55'6-HeptaCB-(178)	ng/g	0.265	0.0013	0.0050	0.010	N/A	N/A	N/A	7210685
22'33'566'-HeptaCB-(179)	ng/g	0.621	0.0011	0.0050	0.0086	N/A	N/A	N/A	7210685
HeptaCB-(180)+(193)	ng/g	3.29	0.0012	0.010	0.0085	N/A	N/A	N/A	7210685
22'344'56-HeptaCB-(181)	ng/g	0.0170	0.0014	0.0050	0.0080	N/A	N/A	N/A	7210685
22'344'56'-HeptaCB-(182)	ng/g	0.0012 U	0.0012	0.0050	0.0092	N/A	N/A	N/A	7210685
22'344'5'6-HeptaCB-(183)	ng/g	0.999	0.0014	0.0050	0.028	N/A	N/A	N/A	7210685
22'344'66'-HeptaCB-(184)	ng/g	0.00087 U	0.00087	0.0050	0.010	N/A	N/A	N/A	7210685
22'3455'6-HeptaCB-(185)	ng/g	0.0013 U	0.0013	0.0050	0.022	N/A	N/A	N/A	7210685
22'34566'-HeptaCB-(186)	ng/g	0.00095 U	0.00095	0.0050	0.0086	N/A	N/A	N/A	7210685
22'34'55'6-HeptaCB-(187)	ng/g	1.86	0.0012	0.0050	0.011	N/A	N/A	N/A	7210685
22'34'566'-HeptaCB-(188)	ng/g	0.00091 U	0.00091	0.0050	0.0047	N/A	N/A	N/A	7210685
233'44'55'-HeptaCB-(189)	ng/g	0.0711	0.00088	0.0050	0.0041	0.0000300	0.00000213	N/A	7210685
233'44'56-HeptaCB-(190)	ng/g	0.277	0.0011	0.0050	0.0041	N/A	N/A	N/A	7210685
233'44'5'6-HeptaCB-(191)	ng/g	0.0580	0.0011	0.0050	0.0045	N/A	N/A	N/A	7210685
233'455'6-HeptaCB-(192)	ng/g	0.0012 U	0.0012	0.0050	0.0090	N/A	N/A	N/A	7210685
22'33'44'55'-OctaCB-(194)	ng/g	0.779	0.00088	0.0050	0.0095	N/A	N/A	N/A	7210685
22'33'44'56-OctaCB-(195)	ng/g	0.285	0.00093	0.0050	0.0094	N/A	N/A	N/A	7210685
22'33'44'56'-OctaCB-(196)	ng/g	0.429	0.0013	0.0050	0.016	N/A	N/A	N/A	7210685

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'66'OctaCB-(197)	ng/g	0.0231	0.0011	0.0050	0.044	N/A	N/A	N/A	7210685
OctaCB-(198)+(199)	ng/g	1.22	0.0013	0.010	0.014	N/A	N/A	N/A	7210685
22'33'4566'-OctaCB-(200)	ng/g	0.108	0.00075	0.0050	0.032	N/A	N/A	N/A	7210685
22'33'45'66'-OctaCB-(201)	ng/g	0.117	0.00089	0.0050	0.017	N/A	N/A	N/A	7210685
22'33'55'66'-OctaCB-(202)	ng/g	0.212	0.00083	0.010	0.0081	N/A	N/A	N/A	7210685
22'344'55'6-OctaCB-(203)	ng/g	0.786	0.0012	0.0050	0.011	N/A	N/A	N/A	7210685
22'344'566'-OctaCB-(204)	ng/g	0.00090 U	0.00090	0.0050	0.021	N/A	N/A	N/A	7210685
233'44'55'6-OctaCB-(205)	ng/g	0.0458	0.00093	0.0050	0.0096	N/A	N/A	N/A	7210685
22'33'44'55'6-NonaCB-(206)	ng/g	0.737	0.00065	0.0050	0.0077	N/A	N/A	N/A	7210685
22'33'44'566'-NonaCB-(207)	ng/g	0.0883	0.00056	0.0050	0.0081	N/A	N/A	N/A	7210685
22'33'455'66'-NonaCB-(208)	ng/g	0.212	0.00068	0.0050	0.0073	N/A	N/A	N/A	7210685
DecaCB-(209)	ng/g	0.205	0.00078	0.0050	0.012	N/A	N/A	N/A	7210685
Total PCB	ng/g	72.9	N/A	N/A	N/A	N/A	N/A	N/A	7210685
TOTAL TOXIC EQUIVALENCY	ng/g	N/A	N/A	N/A	N/A	N/A	0.00828	N/A	N/A
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'44'55'6-NonaCB-(206)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'44'5-HeptaCB-(170)	%	117	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'455'66'-NonaCB-(208)	%	102	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'55'66'-OctaCB-(202)	%	133	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'33'55'6-HeptaCB-(178)	%	103	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'344'55'-HeptaCB-(180)	%	124	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'34'566'-HeptaCB-(188)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'44'66'-HexaCB-(155)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'466'-PentaCB-(104)	%	88	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'66'-TetraCB-(54)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'6-TriCB-(19)	%	75	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-22'-DiCB-(4)	%	70	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'44'55'6-OctaCB-(205)	%	92	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'44'55'-HeptaCB-(189)	%	109	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-233'44'-PentaCB-(105)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7210685

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SEMI-VOLATILE ORGANICS BY HRMS (SOIL)

BV Labs ID		ORB979							
Sampling Date		2020/10/08 10:25							
COC Number		n/a				TOXIC EQUIVALENCY		# of	
	UNITS	T4RB-17L	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-233'55'-PentaCB-(111)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-23'44'55'-HexaCB-(167)	%	93	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-2344'5-PentaCB-(114)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-23'44'5-PentaCB-(118)	%	97	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-2'344'5-PentaCB-(123)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-2-MonoCB-(1)	%	66	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-33'44'55'-HexaCB-(169)	%	74	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-33'44'5-PentaCB-(126)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-33'44'-TetraCB-(77)	%	95	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-344'5-TetraCB-(81)	%	99	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-344'-TriCB-(37)	%	96	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-44'-DiCB-(15)	%	84	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-4-MonoCB-(3)	%	68	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-DecaCB-(209)	%	85	N/A	N/A	N/A	N/A	N/A	N/A	7210685
C13-HexaCB-(156)+(157)	%	90	N/A	N/A	N/A	N/A	N/A	N/A	7210685

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TEST SUMMARY

BV Labs ID: ORB979
Sample ID: T4RB-17L
Matrix: Soil

Collected: 2020/10/08
Shipped:
Received: 2021/01/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7190267	2021/02/01	2021/02/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7213064	2021/02/01	2021/02/18	Angel Guerrero
Moisture	BAL	7169520	N/A	2021/01/26	Manpreet Kaur
PCB Congeners in Soil (1668C)	HRMS/MS	7210685	2021/02/10	2021/02/22	Cathy Xu

BV Labs ID: ORB979 Dup
Sample ID: T4RB-17L
Matrix: Soil

Collected: 2020/10/08
Shipped:
Received: 2021/01/22

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Soil (1613B)	HRMS/MS	7190267	2021/02/01	2021/02/17	Angel Guerrero
2378TCDF Confirmation (M8290A/M1613)	HRMS/MS	7213064	2021/02/01	2021/02/18	Angel Guerrero

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.9°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
7169520	MYG	RPD - Sample/Sample Dup	Moisture	2021/01/26	1.1		%	20
7190267	AGU	Matrix Spike	37CL4 2378 Tetra CDD	2021/02/10		81	%	35 - 197
			C13-1234678 HeptaCDD	2021/02/10		96	%	23 - 140
			C13-1234678 HeptaCDF	2021/02/10		91	%	28 - 143
			C13-123478 HexaCDD	2021/02/10		93	%	32 - 141
			C13-123478 HexaCDF	2021/02/10		87	%	26 - 152
			C13-1234789 HeptaCDF	2021/02/10		94	%	26 - 138
			C13-123678 HexaCDD	2021/02/10		98	%	28 - 130
			C13-123678 HexaCDF	2021/02/10		84	%	26 - 123
			C13-12378 PentaCDD	2021/02/10		77	%	25 - 181
			C13-12378 PentaCDF	2021/02/10		72	%	24 - 185
			C13-123789 HexaCDF	2021/02/10		102	%	29 - 147
			C13-234678 HexaCDF	2021/02/10		94	%	28 - 136
			C13-23478 PentaCDF	2021/02/10		88	%	21 - 178
			C13-2378 TetraCDD	2021/02/10		76	%	25 - 164
			C13-2378 TetraCDF	2021/02/10		83	%	24 - 169
			C13-OCDD	2021/02/10		84	%	17 - 157
			2,3,7,8-Tetra CDD	2021/02/10		99	%	67 - 158
			1,2,3,7,8-Penta CDD	2021/02/10		108	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2021/02/10		108	%	70 - 164
			1,2,3,6,7,8-Hexa CDD	2021/02/10		109	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2021/02/10		112	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2021/02/10		126	%	70 - 140
			Octa CDD	2021/02/10		285 (1)	%	78 - 144
			2,3,7,8-Tetra CDF	2021/02/10		99	%	75 - 158
			1,2,3,7,8-Penta CDF	2021/02/10		105	%	80 - 134
			2,3,4,7,8-Penta CDF	2021/02/10		95	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2021/02/10		106	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2021/02/10		101	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2021/02/10		108	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2021/02/10		100	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2021/02/10		97	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2021/02/10		109	%	78 - 138
			Octa CDF	2021/02/10		120	%	63 - 170
7190267	AGU	Spiked Blank	37CL4 2378 Tetra CDD	2021/02/10		72	%	35 - 197
			C13-1234678 HeptaCDD	2021/02/10		98	%	23 - 140
			C13-1234678 HeptaCDF	2021/02/10		100	%	28 - 143
			C13-123478 HexaCDD	2021/02/10		93	%	32 - 141
			C13-123478 HexaCDF	2021/02/10		89	%	26 - 152
			C13-1234789 HeptaCDF	2021/02/10		100	%	26 - 138
			C13-123678 HexaCDD	2021/02/10		99	%	28 - 130
			C13-123678 HexaCDF	2021/02/10		85	%	26 - 123
			C13-12378 PentaCDD	2021/02/10		76	%	25 - 181
			C13-12378 PentaCDF	2021/02/10		69	%	24 - 185
			C13-123789 HexaCDF	2021/02/10		104	%	29 - 147
			C13-234678 HexaCDF	2021/02/10		98	%	28 - 136
			C13-23478 PentaCDF	2021/02/10		86	%	21 - 178
			C13-2378 TetraCDD	2021/02/10		67	%	25 - 164
			C13-2378 TetraCDF	2021/02/10		72	%	24 - 169
			C13-OCDD	2021/02/10		91	%	17 - 157
			2,3,7,8-Tetra CDD	2021/02/10		104	%	67 - 158
			1,2,3,7,8-Penta CDD	2021/02/10		108	%	25 - 181
			1,2,3,4,7,8-Hexa CDD	2021/02/10		108	%	70 - 164

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,6,7,8-Hexa CDD	2021/02/10		107	%	76 - 134
			1,2,3,7,8,9-Hexa CDD	2021/02/10		114	%	64 - 162
			1,2,3,4,6,7,8-Hepta CDD	2021/02/10		110	%	70 - 140
			Octa CDD	2021/02/10		104	%	78 - 144
			2,3,7,8-Tetra CDF	2021/02/10		102	%	75 - 158
			1,2,3,7,8-Penta CDF	2021/02/10		108	%	80 - 134
			2,3,4,7,8-Penta CDF	2021/02/10		96	%	68 - 160
			1,2,3,4,7,8-Hexa CDF	2021/02/10		107	%	72 - 134
			1,2,3,6,7,8-Hexa CDF	2021/02/10		108	%	84 - 130
			2,3,4,6,7,8-Hexa CDF	2021/02/10		108	%	70 - 156
			1,2,3,7,8,9-Hexa CDF	2021/02/10		99	%	78 - 130
			1,2,3,4,6,7,8-Hepta CDF	2021/02/10		95	%	82 - 122
			1,2,3,4,7,8,9-Hepta CDF	2021/02/10		108	%	78 - 138
			Octa CDF	2021/02/10		106	%	63 - 170
7190267	AGU	Method Blank	37CL4 2378 Tetra CDD	2021/02/10		76	%	35 - 197
			C13-1234678 HeptaCDD	2021/02/10		108	%	23 - 140
			C13-1234678 HeptaCDF	2021/02/10		106	%	28 - 143
			C13-123478 HexaCDD	2021/02/10		105	%	32 - 141
			C13-123478 HexaCDF	2021/02/10		96	%	26 - 152
			C13-1234789 HeptaCDF	2021/02/10		108	%	26 - 138
			C13-123678 HexaCDD	2021/02/10		105	%	28 - 130
			C13-123678 HexaCDF	2021/02/10		90	%	26 - 123
			C13-12378 PentaCDD	2021/02/10		80	%	25 - 181
			C13-12378 PentaCDF	2021/02/10		75	%	24 - 185
			C13-123789 HexaCDF	2021/02/10		113	%	29 - 147
			C13-234678 HexaCDF	2021/02/10		107	%	28 - 136
			C13-23478 PentaCDF	2021/02/10		87	%	21 - 178
			C13-2378 TetraCDD	2021/02/10		77	%	25 - 164
			C13-2378 TetraCDF	2021/02/10		79	%	24 - 169
			C13-OCDD	2021/02/10		104	%	17 - 157
			2,3,7,8-Tetra CDD	2021/02/10	0.107 U, EDL=0.107		pg/g	
			1,2,3,7,8-Penta CDD	2021/02/10	0.108 U, EDL=0.108		pg/g	
			1,2,3,4,7,8-Hexa CDD	2021/02/10	0.103 U, EDL=0.103		pg/g	
			1,2,3,6,7,8-Hexa CDD	2021/02/10	0.103 U, EDL=0.103		pg/g	
			1,2,3,7,8,9-Hexa CDD	2021/02/10	0.109 U, EDL=0.109		pg/g	
			1,2,3,4,6,7,8-Hepta CDD	2021/02/10	0.105 U, EDL=0.105		pg/g	
			Octa CDD	2021/02/10	0.185 J, EDL=0.101		pg/g	
			Total Tetra CDD	2021/02/10	0.107 U, EDL=0.107		pg/g	
			Total Penta CDD	2021/02/10	0.108 U, EDL=0.108		pg/g	
			Total Hexa CDD	2021/02/10	0.106 U, EDL=0.106		pg/g	
			Total Hepta CDD	2021/02/10	0.105 U, EDL=0.105		pg/g	
			2,3,7,8-Tetra CDF	2021/02/10	0.0998 U, EDL=0.0998		pg/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			1,2,3,7,8-Penta CDF	2021/02/10	0.108 U, EDL=0.108		pg/g	
			2,3,4,7,8-Penta CDF	2021/02/10	0.0988 U, EDL=0.0988		pg/g	
			1,2,3,4,7,8-Hexa CDF	2021/02/10	0.0998 U, EDL=0.0998		pg/g	
			1,2,3,6,7,8-Hexa CDF	2021/02/10	0.102 U, EDL=0.102		pg/g	
			2,3,4,6,7,8-Hexa CDF	2021/02/10	0.0967 U, EDL=0.0967		pg/g	
			1,2,3,7,8,9-Hexa CDF	2021/02/10	0.103 U, EDL=0.103		pg/g	
			1,2,3,4,6,7,8-Hepta CDF	2021/02/10	0.102 U, EDL=0.102		pg/g	
			1,2,3,4,7,8,9-Hepta CDF	2021/02/10	0.0985 U, EDL=0.0985		pg/g	
			Octa CDF	2021/02/10	0.102 U, EDL=0.102		pg/g	
			Total Tetra CDF	2021/02/10	0.0998 U, EDL=0.0998		pg/g	
			Total Penta CDF	2021/02/10	0.103 U, EDL=0.103		pg/g	
			Total Hexa CDF	2021/02/10	0.100 U, EDL=0.100		pg/g	
			Total Hepta CDF	2021/02/10	0.100 U, EDL=0.100		pg/g	
7190267	AGU	RPD - Sample/Sample Dup	2,3,7,8-Tetra CDD	2021/02/17	NC		%	25
			1,2,3,7,8-Penta CDD	2021/02/17	NC		%	25
			1,2,3,4,7,8-Hexa CDD	2021/02/17	NC		%	25
			1,2,3,6,7,8-Hexa CDD	2021/02/17	24		%	25
			1,2,3,7,8,9-Hexa CDD	2021/02/17	NC		%	25
			1,2,3,4,6,7,8-Hepta CDD	2021/02/17	35 (2)		%	25
			Octa CDD	2021/02/17	27 (2)		%	25
			Total Tetra CDD	2021/02/17	NC (3)		%	25
			Total Penta CDD	2021/02/17	NC		%	25
			Total Hexa CDD	2021/02/17	26 (2)		%	25
			Total Hepta CDD	2021/02/17	34 (2)		%	25
			2,3,7,8-Tetra CDF	2021/02/17	NC		%	25
			1,2,3,7,8-Penta CDF	2021/02/17	NC		%	25
			2,3,4,7,8-Penta CDF	2021/02/17	NC		%	25
			1,2,3,4,7,8-Hexa CDF	2021/02/17	22		%	25
			1,2,3,6,7,8-Hexa CDF	2021/02/17	NC		%	25
			2,3,4,6,7,8-Hexa CDF	2021/02/17	NC		%	25
			1,2,3,7,8,9-Hexa CDF	2021/02/17	NC		%	25
			1,2,3,4,6,7,8-Hepta CDF	2021/02/17	NC		%	25
			1,2,3,4,7,8,9-Hepta CDF	2021/02/17	NC		%	25
			Octa CDF	2021/02/17	33 (2)		%	25
			Total Tetra CDF	2021/02/17	18		%	25
			Total Penta CDF	2021/02/17	NC		%	25
			Total Hexa CDF	2021/02/17	31 (2)		%	25
			Total Hepta CDF	2021/02/17	27 (2)		%	25
7210685	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2021/02/21		65	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/21		90	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/21		106	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-22'33'455'66'-NonaCB-(208)	2021/02/21		103	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/21		110	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/21		95	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/21		109	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/21		83	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/21		75	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/21		66	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/21		52	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/21		46	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/21		42	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/21		95	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/21		107	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/21		97	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/21		87	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/21		90	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/21		88	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/21		91	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/21		90	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/21		41	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/21		81	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/21		93	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/21		89	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/21		84	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/21		72	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/21		56	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/21		40	%	15 - 150
			C13-DecaCB-(209)	2021/02/21		88	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/21		90	%	25 - 150
			2-MonoCB-(1)	2021/02/21		104	%	50 - 150
			3-MonoCB-(2)	2021/02/21		100	%	N/A
			4-MonoCB-(3)	2021/02/21		106	%	50 - 150
			22'-DiCB-(4)	2021/02/21		106	%	50 - 150
			2,3-DiCB-(5)	2021/02/21		94	%	N/A
			2,3'-DiCB-(6)	2021/02/21		87	%	N/A
			2,4-DiCB-(7)	2021/02/21		84	%	N/A
			2,4'-DiCB-(8)	2021/02/21		89	%	N/A
			2,5-DiCB-(9)	2021/02/21		90	%	N/A
			2,6-DiCB-(10)	2021/02/21		78	%	N/A
			3,3'-DiCB-(11)	2021/02/21		126	%	N/A
			DiCB-(12)+(13)	2021/02/21		97	%	N/A
			3,5-DiCB-(14)	2021/02/21		93	%	N/A
			4,4'-DiCB-(15)	2021/02/21		108	%	50 - 150
			22'3-TriCB-(16)	2021/02/21		78	%	N/A
			22'4-TriCB-(17)	2021/02/21		80	%	N/A
			TriCB-(18)+(30)	2021/02/21		77	%	N/A
			22'6-TriCB-(19)	2021/02/21		105	%	50 - 150
			TriCB-(20) + (28)	2021/02/21		97	%	N/A
			TriCB-(21)+(33)	2021/02/21		95	%	N/A
			234'-TriCB-(22)	2021/02/21		100	%	N/A
			235-TriCB-(23)	2021/02/21		102	%	50 - 150
			236-TriCB-(24)	2021/02/21		81	%	N/A
			23'4-TriCB-(25)	2021/02/21		92	%	N/A
			TriCB-(26)+(29)	2021/02/21		93	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'6-TriCB-(27)	2021/02/21		79	%	N/A
			24'5-TriCB-(31)	2021/02/21		92	%	N/A
			24'6-TriCB-(32)	2021/02/21		83	%	N/A
			23'5'-TriCB-(34)	2021/02/21		82	%	50 - 150
			33'4-TriCB-(35)	2021/02/21		116	%	N/A
			33'5-TriCB-(36)	2021/02/21		103	%	N/A
			344'-TriCB-(37)	2021/02/21		102	%	50 - 150
			345-TriCB-(38)	2021/02/21		105	%	N/A
			34'5-TriCB-(39)	2021/02/21		107	%	N/A
			TetraCB-(40)+(41)+(71)	2021/02/21		84	%	N/A
			22'34'-TetraCB-(42)	2021/02/21		79	%	N/A
			22'35-TetraCB-(43)	2021/02/21		73	%	N/A
			TetraCB-(44)+(47)+(65)	2021/02/21		79	%	N/A
			TetraCB-(45)+(51)	2021/02/21		73	%	N/A
			22'36'-TetraCB-(46)	2021/02/21		72	%	N/A
			22'45-TetraCB-(48)	2021/02/21		80	%	N/A
			TetraCB-(49)+TetraCB-(69)	2021/02/21		79	%	N/A
			TetraCB-(50)+(53)	2021/02/21		70	%	N/A
			22'55'-TetraCB-(52)	2021/02/21		82	%	N/A
			22'66'-TetraCB-(54)	2021/02/21		108	%	50 - 150
			233'4-TetraCB-(55)	2021/02/21		101	%	N/A
			233'4'-Tetra CB(56)	2021/02/21		92	%	N/A
			233'5-TetraCB-(57)	2021/02/21		88	%	N/A
			233'5'-TetraCB-(58)	2021/02/21		96	%	N/A
			TetraCB-(59)+(62)+(75)	2021/02/21		80	%	N/A
			2344'-TetraCB -(60)	2021/02/21		99	%	N/A
			TetraCB-(61)+(70)+(74)+(76)	2021/02/21		91	%	N/A
			234'5-TetraCB-(63)	2021/02/21		90	%	N/A
			234'6-TetraCB-(64)	2021/02/21		84	%	N/A
			23'44'-TetraCB-(66)	2021/02/21		92	%	N/A
			23'45-TetraCB-(67)	2021/02/21		87	%	N/A
			23'45'-TetraCB-(68)	2021/02/21		91	%	N/A
			23'55'-TetraCB-(72)	2021/02/21		89	%	N/A
			23'5'6-TetraCB-(73)	2021/02/21		78	%	N/A
			33'44'-TetraCB-(77)	2021/02/21		100	%	50 - 150
			33'45-TetraCB-(78)	2021/02/21		102	%	N/A
			33'45'-TetraCB(79)	2021/02/21		99	%	N/A
			33'55'-TetraCB-(80)	2021/02/21		95	%	N/A
			344'5-TetraCB-(81)	2021/02/21		107	%	50 - 150
			22'33'4-PentaCB-(82)	2021/02/21		94	%	N/A
			PentaCB-(83)+(99)	2021/02/21		86	%	N/A
			22'33'6-PentaCB-(84)	2021/02/21		88	%	N/A
			PentaCB-(85)+(116)+(117)	2021/02/21		96	%	N/A
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/21		94	%	N/A
			PentaCB-(88)+(91)	2021/02/21		83	%	N/A
			22'346'-PentaCB-(89)	2021/02/21		88	%	N/A
			PentaCB-(90)+(101)+(113)	2021/02/21		92	%	N/A
			22'355'-PentaCB-(92)	2021/02/21		88	%	N/A
			PentaCB-(93)+(98)+(100)+(102)	2021/02/21		81	%	N/A
			22'356'-PentaCB-(94)	2021/02/21		83	%	N/A
			22'35'6-PentaCB-(95)	2021/02/21		87	%	N/A
			22'366'-PentaCB-(96)	2021/02/21		72	%	N/A
			22'45'6-PentaCB-(103)	2021/02/21		84	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'466'-PentaCB-(104)	2021/02/21		100	%	50 - 150
			233'44'-PentaCB-(105)	2021/02/21		107	%	50 - 150
			233'45-PentaCB-(106)	2021/02/21		97	%	N/A
			233'4'5-PentaCB-(107)	2021/02/21		108	%	N/A
			PentaCB-(108)+(124)	2021/02/21		102	%	N/A
			PentaCB-(110)+(115)	2021/02/21		89	%	N/A
			233'55'-PentaCB-(111)	2021/02/21		98	%	N/A
			233'56-PentaCB-(112)	2021/02/21		98	%	N/A
			2344'5-PentaCB-(114)	2021/02/21		109	%	50 - 150
			23'44'5-PentaCB-(118)	2021/02/21		104	%	50 - 150
			23'455'-PentaCB-(120)	2021/02/21		94	%	N/A
			23'45'6-PentaCB-(121)	2021/02/21		88	%	N/A
			233'4'5'-PentaCB-(122)	2021/02/21		105	%	N/A
			23'44'5'-PentaCB-(123)	2021/02/21		103	%	50 - 150
			33'44'5-PentaCB-(126)	2021/02/21		107	%	50 - 150
			33'455'-PentaCB-(127)	2021/02/21		97	%	N/A
			HexaCB-(128)+(166)	2021/02/21		98	%	N/A
			HexaCB-(129)+(138)+(163)	2021/02/21		97	%	N/A
			22'33'45'-HexaCB-(130)	2021/02/21		92	%	N/A
			22'33'46-HexaCB-(131)	2021/02/21		99	%	N/A
			22'33'46'-HexaCB-(132)	2021/02/21		101	%	N/A
			22'33'55'-HexaCB-(133)	2021/02/21		97	%	N/A
			HexaCB-(134)+(143)	2021/02/21		93	%	N/A
			HexaCB-(135)+(151)	2021/02/21		92	%	N/A
			22'33'66'-HexaCB-(136)	2021/02/21		86	%	N/A
			22'344'5-HexaCB-(137)	2021/02/21		105	%	N/A
			HexaCB-(139)+(140)	2021/02/21		95	%	N/A
			22'3455'-HexaCB-(141)	2021/02/21		94	%	N/A
			22'3456-HexaCB-(142)	2021/02/21		92	%	N/A
			22'345'6-HexaCB-(144)	2021/02/21		83	%	N/A
			22'3466'-HexaCB-(145)	2021/02/21		88	%	N/A
			22'34'55'-HexaCB-(146)	2021/02/21		78	%	N/A
			HexaCB-(147)+(149)	2021/02/21		97	%	N/A
			22'34'56'-HexaCB-(148)	2021/02/21		90	%	N/A
			22'34'66'-HexaCB-(150)	2021/02/21		92	%	N/A
			22'3566'-HexaCB-(152)	2021/02/21		84	%	N/A
			HexaCB-(153)+(168)	2021/02/21		94	%	N/A
			22'44'56'-HexaCB-(154)	2021/02/21		92	%	N/A
			22'44'66'-HexaCB-(155)	2021/02/21		97	%	50 - 150
			HexaCB-(156)+(157)	2021/02/21		106	%	50 - 150
			233'44'6-HexaCB-(158)	2021/02/21		94	%	N/A
			233'455'-HexaCB-(159)	2021/02/21		97	%	N/A
			233'456-HexaCB-(160)	2021/02/21		88	%	N/A
			233'45'6-HexaCB-(161)	2021/02/21		90	%	N/A
			233'4'55'-HexaCB-(162)	2021/02/21		100	%	N/A
			233'4'5'6-HexaCB-(164)	2021/02/21		87	%	N/A
			233'55'6-HexaCB-(165)	2021/02/21		88	%	N/A
			23'44'55'-HexaCB-(167)	2021/02/21		108	%	50 - 150
			33'44'55'-HexaCB-(169)	2021/02/21		104	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2021/02/21		95	%	50 - 150
			HeptaCB-(171)+(173)	2021/02/21		97	%	N/A
			22'33'455'-HeptaCB-(172)	2021/02/21		100	%	N/A
			22'33'456'-HeptaCB-(174)	2021/02/21		93	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'45'6-HeptaCB-(175)	2021/02/21		91	%	N/A
			22'33'466'-HeptaCB-(176)	2021/02/21		89	%	N/A
			22'33'45'6'-HeptaCB-(177)	2021/02/21		97	%	N/A
			22'33'55'6-HeptaCB-(178)	2021/02/21		91	%	N/A
			22'33'566'-HeptaCB-(179)	2021/02/21		109	%	N/A
			HeptaCB-(180)+(193)	2021/02/21		95	%	50 - 150
			22'344'56-HeptaCB-(181)	2021/02/21		96	%	N/A
			22'344'56'-HeptaCB-(182)	2021/02/21		95	%	50 - 150
			22'344'5'6-HeptaCB-(183)	2021/02/21		105	%	N/A
			22'344'66'-HeptaCB-(184)	2021/02/21		87	%	N/A
			22'3455'6-HeptaCB-(185)	2021/02/21		95	%	N/A
			22'34566'-HeptaCB-(186)	2021/02/21		90	%	N/A
			22'34'55'6-HeptaCB-(187)	2021/02/21		102	%	50 - 150
			22'34'566'-HeptaCB-(188)	2021/02/21		98	%	50 - 150
			233'44'55'-HeptaCB-(189)	2021/02/21		99	%	50 - 150
			233'44'56-HeptaCB-(190)	2021/02/21		98	%	N/A
			233'44'5'6-HeptaCB-(191)	2021/02/21		94	%	N/A
			233'455'6-HeptaCB-(192)	2021/02/21		98	%	N/A
			22'33'44'55'-OctaCB-(194)	2021/02/21		94	%	N/A
			22'33'44'56-OctaCB-(195)	2021/02/21		98	%	N/A
			22'33'44'56'-OctaCB-(196)	2021/02/21		102	%	N/A
			22'33'44'66'OctaCB-(197)	2021/02/21		106	%	N/A
			OctaCB-(198)+(199)	2021/02/21		99	%	N/A
			22'33'4566'-OctaCB-(200)	2021/02/21		103	%	N/A
			22'33'45'66'-OctaCB-(201)	2021/02/21		99	%	N/A
			22'33'55'66'-OctaCB-(202)	2021/02/21		95	%	50 - 150
			22'344'55'6-OctaCB-(203)	2021/02/21		101	%	N/A
			22'344'566'-OctaCB-(204)	2021/02/21		97	%	N/A
			233'44'55'6-OctaCB-(205)	2021/02/21		101	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2021/02/21		97	%	50 - 150
			22'33'44'566'-NonaCB-(207)	2021/02/21		97	%	N/A
			22'33'455'66'-NonaCB-(208)	2021/02/21		97	%	50 - 150
			DecaCB-(209)	2021/02/21		111	%	50 - 150
7210685	CXU	Spiked Blank DUP	C13-2,44'-TriCB-(28)	2021/02/22		66	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/22		79	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/22		92	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/22		89	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/22		96	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/22		86	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/22		96	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/22		78	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/22		70	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/22		62	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/22		51	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/22		43	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/22		39	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/22		84	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/22		94	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/22		89	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/22		80	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/22		83	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/22		81	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/22		83	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			C13-2'344'5-PentaCB-(123)	2021/02/22		82	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/22		37	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/22		77	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/22		84	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/22		84	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/22		81	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/22		70	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/22		56	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/22		36	%	15 - 150
			C13-DecaCB-(209)	2021/02/22		78	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/22		82	%	25 - 150
			2-MonoCB-(1)	2021/02/22		108	%	50 - 150
			3-MonoCB-(2)	2021/02/22		107	%	N/A
			4-MonoCB-(3)	2021/02/22		113	%	50 - 150
			22'-DiCB-(4)	2021/02/22		112	%	50 - 150
			2,3-DiCB-(5)	2021/02/22		69	%	N/A
			2,3'-DiCB-(6)	2021/02/22		88	%	N/A
			2,4-DiCB-(7)	2021/02/22		86	%	N/A
			2,4'-DiCB-(8)	2021/02/22		113	%	N/A
			2,5-DiCB-(9)	2021/02/22		90	%	N/A
			2,6-DiCB-(10)	2021/02/22		75	%	N/A
			3,3'-DiCB-(11)	2021/02/22		136	%	N/A
			DiCB-(12)+(13)	2021/02/22		103	%	N/A
			3,5-DiCB-(14)	2021/02/22		97	%	N/A
			4,4'-DiCB-(15)	2021/02/22		115	%	50 - 150
			22'3-TriCB-(16)	2021/02/22		71	%	N/A
			22'4-TriCB-(17)	2021/02/22		85	%	N/A
			TriCB-(18)+(30)	2021/02/22		82	%	N/A
			22'6-TriCB-(19)	2021/02/22		107	%	50 - 150
			TriCB-(20) + (28)	2021/02/22		105	%	N/A
			TriCB-(21)+(33)	2021/02/22		99	%	N/A
			234'-TriCB-(22)	2021/02/22		104	%	N/A
			235-TriCB-(23)	2021/02/22		105	%	50 - 150
			236-TriCB-(24)	2021/02/22		86	%	N/A
			23'4-TriCB-(25)	2021/02/22		93	%	N/A
			TriCB-(26)+(29)	2021/02/22		97	%	N/A
			23'6-TriCB-(27)	2021/02/22		85	%	N/A
			24'5-TriCB-(31)	2021/02/22		98	%	N/A
			24'6-TriCB-(32)	2021/02/22		87	%	N/A
			23'5'-TriCB-(34)	2021/02/22		87	%	50 - 150
			33'4-TriCB-(35)	2021/02/22		115	%	N/A
			33'5-TriCB-(36)	2021/02/22		107	%	N/A
			344'-TriCB-(37)	2021/02/22		106	%	50 - 150
			345-TriCB-(38)	2021/02/22		108	%	N/A
			34'5-TriCB-(39)	2021/02/22		114	%	N/A
			TetraCB-(40)+(41)+(71)	2021/02/22		88	%	N/A
			22'34'-TetraCB-(42)	2021/02/22		76	%	N/A
			22'35-TetraCB-(43)	2021/02/22		96	%	N/A
			TetraCB-(44)+(47)+(65)	2021/02/22		82	%	N/A
			TetraCB-(45)+(51)	2021/02/22		74	%	N/A
			22'36'-TetraCB-(46)	2021/02/22		77	%	N/A
			22'45-TetraCB-(48)	2021/02/22		86	%	N/A
			TetraCB-(49)+TetraCB-(69)	2021/02/22		81	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			TetraCB-(50)+(53)	2021/02/22		74	%	N/A
			22'55'-TetraCB-(52)	2021/02/22		91	%	N/A
			22'66'-TetraCB-(54)	2021/02/22		112	%	50 - 150
			233'4-TetraCB-(55)	2021/02/22		98	%	N/A
			233'4'-Tetra CB(56)	2021/02/22		95	%	N/A
			233'5-TetraCB-(57)	2021/02/22		90	%	N/A
			233'5'-TetraCB-(58)	2021/02/22		95	%	N/A
			TetraCB-(59)+(62)+(75)	2021/02/22		84	%	N/A
			2344'-TetraCB -(60)	2021/02/22		101	%	N/A
			TetraCB-(61)+(70)+(74)+(76)	2021/02/22		93	%	N/A
			234'5-TetraCB-(63)	2021/02/22		91	%	N/A
			234'6-TetraCB-(64)	2021/02/22		88	%	N/A
			23'44'-TetraCB-(66)	2021/02/22		93	%	N/A
			23'45-TetraCB-(67)	2021/02/22		94	%	N/A
			23'45'-TetraCB-(68)	2021/02/22		93	%	N/A
			23'55'-TetraCB-(72)	2021/02/22		89	%	N/A
			23'5'6-TetraCB-(73)	2021/02/22		69	%	N/A
			33'44'-TetraCB-(77)	2021/02/22		97	%	50 - 150
			33'45-TetraCB-(78)	2021/02/22		101	%	N/A
			33'45'-TetraCB(79)	2021/02/22		103	%	N/A
			33'55'-TetraCB-(80)	2021/02/22		95	%	N/A
			344'5-TetraCB-(81)	2021/02/22		109	%	50 - 150
			22'33'4-PentaCB-(82)	2021/02/22		95	%	N/A
			PentaCB-(83)+(99)	2021/02/22		95	%	N/A
			22'33'6-PentaCB-(84)	2021/02/22		89	%	N/A
			PentaCB-(85)+(116)+(117)	2021/02/22		94	%	N/A
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/22		95	%	N/A
			PentaCB-(88)+(91)	2021/02/22		87	%	N/A
			22'346'-PentaCB-(89)	2021/02/22		91	%	N/A
			PentaCB-(90)+(101)+(113)	2021/02/22		96	%	N/A
			22'355'-PentaCB-(92)	2021/02/22		90	%	N/A
			PentaCB-(93)+(98)+(100)+(102)	2021/02/22		86	%	N/A
			22'356'-PentaCB-(94)	2021/02/22		87	%	N/A
			22'35'6-PentaCB-(95)	2021/02/22		90	%	N/A
			22'366'-PentaCB-(96)	2021/02/22		77	%	N/A
			22'45'6-PentaCB-(103)	2021/02/22		87	%	N/A
			22'466'-PentaCB-(104)	2021/02/22		103	%	50 - 150
			233'44'-PentaCB-(105)	2021/02/22		111	%	50 - 150
			233'45-PentaCB-(106)	2021/02/22		101	%	N/A
			233'4'5-PentaCB-(107)	2021/02/22		104	%	N/A
			PentaCB-(108)+(124)	2021/02/22		102	%	N/A
			PentaCB-(110)+(115)	2021/02/22		97	%	N/A
			233'55'-PentaCB-(111)	2021/02/22		98	%	N/A
			233'56-PentaCB-(112)	2021/02/22		96	%	N/A
			2344'5-PentaCB-(114)	2021/02/22		114	%	50 - 150
			23'44'5-PentaCB-(118)	2021/02/22		110	%	50 - 150
			23'455'-PentaCB-(120)	2021/02/22		99	%	N/A
			23'45'6-PentaCB-(121)	2021/02/22		93	%	N/A
			233'4'5'-PentaCB-(122)	2021/02/22		106	%	N/A
			23'44'5'-PentaCB-(123)	2021/02/22		108	%	50 - 150
			33'44'5-PentaCB-(126)	2021/02/22		108	%	50 - 150
			33'455'-PentaCB-(127)	2021/02/22		98	%	N/A
			HexaCB-(128)+(166)	2021/02/22		99	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

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			HexaCB-(129)+(138)+(163)	2021/02/22		96	%	N/A
			22'33'45'-HexaCB-(130)	2021/02/22		95	%	N/A
			22'33'46-HexaCB-(131)	2021/02/22		99	%	N/A
			22'33'46'-HexaCB-(132)	2021/02/22		101	%	N/A
			22'33'55'-HexaCB-(133)	2021/02/22		100	%	N/A
			HexaCB-(134)+(143)	2021/02/22		93	%	N/A
			HexaCB-(135)+(151)	2021/02/22		96	%	N/A
			22'33'66'-HexaCB-(136)	2021/02/22		89	%	N/A
			22'344'5-HexaCB-(137)	2021/02/22		98	%	N/A
			HexaCB-(139)+(140)	2021/02/22		96	%	N/A
			22'3455'-HexaCB-(141)	2021/02/22		101	%	N/A
			22'3456-HexaCB-(142)	2021/02/22		96	%	N/A
			22'345'6-HexaCB-(144)	2021/02/22		96	%	N/A
			22'3466'-HexaCB-(145)	2021/02/22		91	%	N/A
			22'34'55'-HexaCB-(146)	2021/02/22		85	%	N/A
			HexaCB-(147)+(149)	2021/02/22		96	%	N/A
			22'34'56'-HexaCB-(148)	2021/02/22		94	%	N/A
			22'34'66'-HexaCB-(150)	2021/02/22		92	%	N/A
			22'3566'-HexaCB-(152)	2021/02/22		88	%	N/A
			HexaCB-(153)+(168)	2021/02/22		93	%	N/A
			22'44'56'-HexaCB-(154)	2021/02/22		96	%	N/A
			22'44'66'-HexaCB-(155)	2021/02/22		102	%	50 - 150
			HexaCB-(156)+(157)	2021/02/22		110	%	50 - 150
			233'44'6-HexaCB-(158)	2021/02/22		96	%	N/A
			233'455'-HexaCB-(159)	2021/02/22		102	%	N/A
			233'456-HexaCB-(160)	2021/02/22		93	%	N/A
			233'45'6-HexaCB-(161)	2021/02/22		90	%	N/A
			233'4'55'-HexaCB-(162)	2021/02/22		104	%	N/A
			233'4'5'6-HexaCB-(164)	2021/02/22		95	%	N/A
			233'55'6-HexaCB-(165)	2021/02/22		92	%	N/A
			23'44'55'-HexaCB-(167)	2021/02/22		111	%	50 - 150
			33'44'55'-HexaCB-(169)	2021/02/22		108	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2021/02/22		99	%	50 - 150
			HeptaCB-(171)+(173)	2021/02/22		97	%	N/A
			22'33'455'-HeptaCB-(172)	2021/02/22		102	%	N/A
			22'33'456'-HeptaCB-(174)	2021/02/22		100	%	N/A
			22'33'45'6-HeptaCB-(175)	2021/02/22		92	%	N/A
			22'33'466'-HeptaCB-(176)	2021/02/22		90	%	N/A
			22'33'45'6'-HeptaCB-(177)	2021/02/22		100	%	N/A
			22'33'55'6-HeptaCB-(178)	2021/02/22		94	%	N/A
			22'33'566'-HeptaCB-(179)	2021/02/22		112	%	N/A
			HeptaCB-(180)+(193)	2021/02/22		97	%	50 - 150
			22'344'56-HeptaCB-(181)	2021/02/22		100	%	N/A
			22'344'56'-HeptaCB-(182)	2021/02/22		97	%	50 - 150
			22'344'5'6-HeptaCB-(183)	2021/02/22		97	%	N/A
			22'344'66'-HeptaCB-(184)	2021/02/22		90	%	N/A
			22'3455'6-HeptaCB-(185)	2021/02/22		100	%	N/A
			22'34566'-HeptaCB-(186)	2021/02/22		93	%	N/A
			22'34'55'6-HeptaCB-(187)	2021/02/22		102	%	50 - 150
			22'34'566'-HeptaCB-(188)	2021/02/22		100	%	50 - 150
			233'44'55'-HeptaCB-(189)	2021/02/22		98	%	50 - 150
			233'44'56-HeptaCB-(190)	2021/02/22		96	%	N/A
			233'44'5'6-HeptaCB-(191)	2021/02/22		98	%	N/A

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'455'6-HeptaCB-(192)	2021/02/22		101	%	N/A
			22'33'44'55'-OctaCB-(194)	2021/02/22		96	%	N/A
			22'33'44'56-OctaCB-(195)	2021/02/22		99	%	N/A
			22'33'44'56'-OctaCB-(196)	2021/02/22		103	%	N/A
			22'33'44'66'OctaCB-(197)	2021/02/22		117	%	N/A
			OctaCB-(198)+(199)	2021/02/22		101	%	N/A
			22'33'4566'-OctaCB-(200)	2021/02/22		100	%	N/A
			22'33'45'66'-OctaCB-(201)	2021/02/22		100	%	N/A
			22'33'55'66'-OctaCB-(202)	2021/02/22		97	%	50 - 150
			22'344'55'6-OctaCB-(203)	2021/02/22		100	%	N/A
			22'344'566'-OctaCB-(204)	2021/02/22		100	%	N/A
			233'44'55'6-OctaCB-(205)	2021/02/22		105	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2021/02/22		98	%	50 - 150
			22'33'44'566'-NonaCB-(207)	2021/02/22		102	%	N/A
			22'33'455'66'-NonaCB-(208)	2021/02/22		102	%	50 - 150
			DecaCB-(209)	2021/02/22		113	%	50 - 150
7210685	CXU	RPD	2-MonoCB-(1)	2021/02/22	3.8		%	30
			3-MonoCB-(2)	2021/02/22	6.8		%	30
			4-MonoCB-(3)	2021/02/22	6.4		%	30
			22'-DiCB-(4)	2021/02/22	5.5		%	30
			2,3-DiCB-(5)	2021/02/22	31 (4)		%	30
			2,3'-DiCB-(6)	2021/02/22	1.1		%	30
			2,4-DiCB-(7)	2021/02/22	2.4		%	30
			2,4'-DiCB-(8)	2021/02/22	24		%	30
			2,5-DiCB-(9)	2021/02/22	0		%	30
			2,6-DiCB-(10)	2021/02/22	3.9		%	30
			3,3'-DiCB-(11)	2021/02/22	7.6		%	30
			DiCB-(12)+(13)	2021/02/22	6.0		%	30
			3,5-DiCB-(14)	2021/02/22	4.2		%	30
			4,4'-DiCB-(15)	2021/02/22	6.3		%	30
			22'3-TriCB-(16)	2021/02/22	9.4		%	30
			22'4-TriCB-(17)	2021/02/22	6.1		%	30
			TriCB-(18)+(30)	2021/02/22	6.3		%	30
			22'6-TriCB-(19)	2021/02/22	1.9		%	30
			TriCB-(20) + (28)	2021/02/22	7.9		%	30
			TriCB-(21)+(33)	2021/02/22	4.1		%	30
			234'-TriCB-(22)	2021/02/22	3.9		%	30
			235-TriCB-(23)	2021/02/22	2.9		%	30
			236-TriCB-(24)	2021/02/22	6.0		%	30
			23'4-TriCB-(25)	2021/02/22	1.1		%	30
			TriCB-(26)+(29)	2021/02/22	4.2		%	30
			23'6-TriCB-(27)	2021/02/22	7.3		%	30
			24'5-TriCB-(31)	2021/02/22	6.3		%	30
			24'6-TriCB-(32)	2021/02/22	4.7		%	30
			23'5'-TriCB-(34)	2021/02/22	5.9		%	30
			33'4-TriCB-(35)	2021/02/22	0.87		%	30
			33'5-TriCB-(36)	2021/02/22	3.8		%	30
			344'-TriCB-(37)	2021/02/22	3.8		%	30
			345-TriCB-(38)	2021/02/22	2.8		%	30
			34'5-TriCB-(39)	2021/02/22	6.3		%	30
			TetraCB-(40)+(41)+(71)	2021/02/22	4.7		%	30
			22'34'-TetraCB-(42)	2021/02/22	3.9		%	30
			22'35-TetraCB-(43)	2021/02/22	27		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			TetraCB-(44)+(47)+(65)	2021/02/22	3.7		%	30
			TetraCB-(45)+(51)	2021/02/22	1.4		%	30
			22'36'-TetraCB-(46)	2021/02/22	6.7		%	30
			22'45-TetraCB-(48)	2021/02/22	7.2		%	30
			TetraCB-(49)+TetraCB-(69)	2021/02/22	2.5		%	30
			TetraCB-(50)+(53)	2021/02/22	5.6		%	30
			22'55'-TetraCB-(52)	2021/02/22	10		%	30
			22'66'-TetraCB-(54)	2021/02/22	3.6		%	30
			233'4-TetraCB-(55)	2021/02/22	3.0		%	30
			233'4'-Tetra CB(56)	2021/02/22	3.2		%	30
			233'5-TetraCB-(57)	2021/02/22	2.2		%	30
			233'5'-TetraCB-(58)	2021/02/22	1.0		%	30
			TetraCB-(59)+(62)+(75)	2021/02/22	4.9		%	30
			2344'-TetraCB -(60)	2021/02/22	2.0		%	30
			TetraCB-(61)+(70)+(74)+(76)	2021/02/22	2.2		%	30
			234'5-TetraCB-(63)	2021/02/22	1.1		%	30
			234'6-TetraCB-(64)	2021/02/22	4.7		%	30
			23'44'-TetraCB-(66)	2021/02/22	1.1		%	30
			23'45-TetraCB-(67)	2021/02/22	7.7		%	30
			23'45'-TetraCB-(68)	2021/02/22	2.2		%	30
			23'55'-TetraCB-(72)	2021/02/22	0		%	30
			23'5'6-TetraCB-(73)	2021/02/22	12		%	30
			33'44'-TetraCB-(77)	2021/02/22	3.0		%	30
			33'45-TetraCB-(78)	2021/02/22	0.99		%	30
			33'45'-TetraCB(79)	2021/02/22	4.0		%	30
			33'55'-TetraCB-(80)	2021/02/22	0		%	30
			344'5-TetraCB-(81)	2021/02/22	1.9		%	30
			22'33'4-PentaCB-(82)	2021/02/22	1.1		%	30
			PentaCB-(83)+(99)	2021/02/22	9.9		%	30
			22'33'6-PentaCB-(84)	2021/02/22	1.1		%	30
			PentaCB-(85)+(116)+(117)	2021/02/22	2.1		%	30
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/22	1.1		%	30
			PentaCB-(88)+(91)	2021/02/22	4.7		%	30
			22'346'-PentaCB-(89)	2021/02/22	3.4		%	30
			PentaCB-(90)+(101)+(113)	2021/02/22	4.3		%	30
			22'355'-PentaCB-(92)	2021/02/22	2.2		%	30
			PentaCB-(93)+(98)+(100)+(102)	2021/02/22	6.0		%	30
			22'356'-PentaCB-(94)	2021/02/22	4.7		%	30
			22'35'6-PentaCB-(95)	2021/02/22	3.4		%	30
			22'366'-PentaCB-(96)	2021/02/22	6.7		%	30
			22'45'6-PentaCB-(103)	2021/02/22	3.5		%	30
			22'466'-PentaCB-(104)	2021/02/22	3.0		%	30
			233'44'-PentaCB-(105)	2021/02/22	3.7		%	30
			233'45-PentaCB-(106)	2021/02/22	4.0		%	30
			233'4'5-PentaCB-(107)	2021/02/22	3.8		%	30
			PentaCB-(108)+(124)	2021/02/22	0		%	30
			PentaCB-(110)+(115)	2021/02/22	8.6		%	30
			233'55'-PentaCB-(111)	2021/02/22	0		%	30
			233'56-PentaCB-(112)	2021/02/22	2.1		%	30
			2344'5-PentaCB-(114)	2021/02/22	4.5		%	30
			23'44'5-PentaCB-(118)	2021/02/22	5.6		%	30
			23'455'-PentaCB-(120)	2021/02/22	5.2		%	30
			23'45'6-PentaCB-(121)	2021/02/22	5.5		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'4'5'-PentaCB-(122)	2021/02/22	0.95		%	30
			23'44'5'-PentaCB-(123)	2021/02/22	4.7		%	30
			33'44'5-PentaCB-(126)	2021/02/22	0.93		%	30
			33'455'-PentaCB-(127)	2021/02/22	1.0		%	30
			HexaCB-(128)+(166)	2021/02/22	1.0		%	30
			HexaCB-(129)+(138)+(163)	2021/02/22	1.0		%	30
			22'33'45'-HexaCB-(130)	2021/02/22	3.2		%	30
			22'33'46-HexaCB-(131)	2021/02/22	0		%	30
			22'33'46'-HexaCB-(132)	2021/02/22	0		%	30
			22'33'55'-HexaCB-(133)	2021/02/22	3.0		%	30
			HexaCB-(134)+(143)	2021/02/22	0		%	30
			HexaCB-(135)+(151)	2021/02/22	4.3		%	30
			22'33'66'-HexaCB-(136)	2021/02/22	3.4		%	30
			22'344'5-HexaCB-(137)	2021/02/22	6.9		%	30
			HexaCB-(139)+(140)	2021/02/22	1.0		%	30
			22'3455'-HexaCB-(141)	2021/02/22	7.2		%	30
			22'3456-HexaCB-(142)	2021/02/22	4.3		%	30
			22'345'6-HexaCB-(144)	2021/02/22	15		%	30
			22'3466'-HexaCB-(145)	2021/02/22	3.4		%	30
			22'34'55'-HexaCB-(146)	2021/02/22	8.6		%	30
			HexaCB-(147)+(149)	2021/02/22	1.0		%	30
			22'34'56'-HexaCB-(148)	2021/02/22	4.3		%	30
			22'34'66'-HexaCB-(150)	2021/02/22	0		%	30
			22'3566'-HexaCB-(152)	2021/02/22	4.7		%	30
			HexaCB-(153)+(168)	2021/02/22	1.1		%	30
			22'44'56'-HexaCB-(154)	2021/02/22	4.3		%	30
			22'44'66'-HexaCB-(155)	2021/02/22	5.0		%	30
			HexaCB-(156)+(157)	2021/02/22	3.7		%	30
			233'44'6-HexaCB-(158)	2021/02/22	2.1		%	30
			233'455'-HexaCB-(159)	2021/02/22	5.0		%	30
			233'456-HexaCB-(160)	2021/02/22	5.5		%	30
			233'45'6-HexaCB-(161)	2021/02/22	0		%	30
			233'4'55'-HexaCB-(162)	2021/02/22	3.9		%	30
			233'4'5'6-HexaCB-(164)	2021/02/22	8.8		%	30
			233'55'6-HexaCB-(165)	2021/02/22	4.4		%	30
			23'44'55'-HexaCB-(167)	2021/02/22	2.7		%	30
			33'44'55'-HexaCB-(169)	2021/02/22	3.8		%	30
			22'33'44'5-HeptaCB-(170)	2021/02/22	4.1		%	30
			HeptaCB-(171)+(173)	2021/02/22	0		%	30
			22'33'455'-HeptaCB-(172)	2021/02/22	2.0		%	30
			22'33'456'-HeptaCB-(174)	2021/02/22	7.3		%	30
			22'33'45'6-HeptaCB-(175)	2021/02/22	1.1		%	30
			22'33'466'-HeptaCB-(176)	2021/02/22	1.1		%	30
			22'33'45'6'-HeptaCB-(177)	2021/02/22	3.0		%	30
			22'33'55'6-HeptaCB-(178)	2021/02/22	3.2		%	30
			22'33'566'-HeptaCB-(179)	2021/02/22	2.7		%	30
			HeptaCB-(180)+(193)	2021/02/22	2.1		%	30
			22'344'56-HeptaCB-(181)	2021/02/22	4.1		%	30
			22'344'56'-HeptaCB-(182)	2021/02/22	2.1		%	30
			22'344'5'6-HeptaCB-(183)	2021/02/22	7.9		%	30
			22'344'66'-HeptaCB-(184)	2021/02/22	3.4		%	30
			22'3455'6-HeptaCB-(185)	2021/02/22	5.1		%	30
			22'34566'-HeptaCB-(186)	2021/02/22	3.3		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'34'55'6-HeptaCB-(187)	2021/02/22	0		%	30
			22'34'566'-HeptaCB-(188)	2021/02/22	2.0		%	30
			233'44'55'-HeptaCB-(189)	2021/02/22	1.0		%	30
			233'44'56-HeptaCB-(190)	2021/02/22	2.1		%	30
			233'44'5'6-HeptaCB-(191)	2021/02/22	4.2		%	30
			233'455'6-HeptaCB-(192)	2021/02/22	3.0		%	30
			22'33'44'55'-OctaCB-(194)	2021/02/22	2.1		%	30
			22'33'44'56-OctaCB-(195)	2021/02/22	1.0		%	30
			22'33'44'56'-OctaCB-(196)	2021/02/22	0.98		%	30
			22'33'44'66'OctaCB-(197)	2021/02/22	9.9		%	30
			OctaCB-(198)+(199)	2021/02/22	2.0		%	30
			22'33'4566'-OctaCB-(200)	2021/02/22	3.0		%	30
			22'33'45'66'-OctaCB-(201)	2021/02/22	1.0		%	30
			22'33'55'66'-OctaCB-(202)	2021/02/22	2.1		%	30
			22'344'55'6-OctaCB-(203)	2021/02/22	1.0		%	30
			22'344'566'-OctaCB-(204)	2021/02/22	3.0		%	30
			233'44'55'6-OctaCB-(205)	2021/02/22	3.9		%	30
			22'33'44'55'6-NonaCB-(206)	2021/02/22	1.0		%	30
			22'33'44'566'-NonaCB-(207)	2021/02/22	5.0		%	30
			22'33'455'66'-NonaCB-(208)	2021/02/22	5.0		%	30
			DecaCB-(209)	2021/02/22	1.8		%	30
7210685	CXU	Method Blank	C13-2,44'-TriCB-(28)	2021/02/22		80	%	30 - 135
			C13-22'33'44'55'6-NonaCB-(206)	2021/02/22		94	%	25 - 150
			C13-22'33'44'5-HeptaCB-(170)	2021/02/22		116	%	25 - 150
			C13-22'33'455'66'-NonaCB-(208)	2021/02/22		111	%	25 - 150
			C13-22'33'55'66'-OctaCB-(202)	2021/02/22		120	%	25 - 150
			C13-22'33'55'6-HeptaCB-(178)	2021/02/22		102	%	30 - 135
			C13-22'344'55'-HeptaCB-(180)	2021/02/22		120	%	30 - 135
			C13-22'34'566'-HeptaCB-(188)	2021/02/22		91	%	25 - 150
			C13-22'44'66'-HexaCB-(155)	2021/02/22		87	%	25 - 150
			C13-22'466'-PentaCB-(104)	2021/02/22		79	%	25 - 150
			C13-22'66'-TetraCB-(54)	2021/02/22		65	%	25 - 150
			C13-22'6-TriCB-(19)	2021/02/22		55	%	25 - 150
			C13-22'-DiCB-(4)	2021/02/22		51	%	25 - 150
			C13-233'44'55'6-OctaCB-(205)	2021/02/22		100	%	25 - 150
			C13-233'44'55'-HeptaCB-(189)	2021/02/22		114	%	25 - 150
			C13-233'44'-PentaCB-(105)	2021/02/22		107	%	25 - 150
			C13-233'55'-PentaCB-(111)	2021/02/22		97	%	30 - 135
			C13-23'44'55'-HexaCB-(167)	2021/02/22		99	%	25 - 150
			C13-2344'5-PentaCB-(114)	2021/02/22		97	%	25 - 150
			C13-23'44'5-PentaCB-(118)	2021/02/22		100	%	25 - 150
			C13-2'344'5-PentaCB-(123)	2021/02/22		99	%	25 - 150
			C13-2-MonoCB-(1)	2021/02/22		48	%	15 - 150
			C13-33'44'55'-HexaCB-(169)	2021/02/22		83	%	25 - 150
			C13-33'44'5-PentaCB-(126)	2021/02/22		100	%	25 - 150
			C13-33'44'-TetraCB-(77)	2021/02/22		100	%	25 - 150
			C13-344'5-TetraCB-(81)	2021/02/22		98	%	25 - 150
			C13-344'-TriCB-(37)	2021/02/22		86	%	25 - 150
			C13-44'-DiCB-(15)	2021/02/22		68	%	25 - 150
			C13-4-MonoCB-(3)	2021/02/22		48	%	15 - 150
			C13-DecaCB-(209)	2021/02/22		88	%	25 - 150
			C13-HexaCB-(156)+(157)	2021/02/22		97	%	25 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			24'6-TriCB-(32)	2021/02/22	0.00030 U, EDL=0.00030		ng/g	
			23'5'-TriCB-(34)	2021/02/22	0.00027 U, EDL=0.00027		ng/g	
			33'4-TriCB-(35)	2021/02/22	0.00029 U, EDL=0.00029		ng/g	
			33'5-TriCB-(36)	2021/02/22	0.00025 U, EDL=0.00025		ng/g	
			344'-TriCB-(37)	2021/02/22	0.00045 U, EDL=0.00045		ng/g	
			345-TriCB-(38)	2021/02/22	0.00028 U, EDL=0.00028		ng/g	
			34'5-TriCB-(39)	2021/02/22	0.00028 U, EDL=0.00028		ng/g	
			TetraCB-(40)+(41)+(71)	2021/02/22	0.00077 U, EDL=0.00077		ng/g	
			22'34'-TetraCB-(42)	2021/02/22	0.00083 U, EDL=0.00083		ng/g	
			22'35-TetraCB-(43)	2021/02/22	0.0010 U, EDL=0.0010		ng/g	
			TetraCB-(44)+(47)+(65)	2021/02/22	0.00070 U, EDL=0.00070		ng/g	
			TetraCB-(45)+(51)	2021/02/22	0.00078 U, EDL=0.00078		ng/g	
			22'36'-TetraCB-(46)	2021/02/22	0.00091 U, EDL=0.00091		ng/g	
			22'45-TetraCB-(48)	2021/02/22	0.00079 U, EDL=0.00079		ng/g	
			TetraCB-(49)+TetraCB-(69)	2021/02/22	0.00066 U, EDL=0.00066		ng/g	
			TetraCB-(50)+(53)	2021/02/22	0.00075 U, EDL=0.00075		ng/g	
			22'55'-TetraCB-(52)	2021/02/22	0.00078 U, EDL=0.00078		ng/g	
			22'66'-TetraCB-(54)	2021/02/22	0.00022 U, EDL=0.00022		ng/g	
			233'4-TetraCB-(55)	2021/02/22	0.00058 U, EDL=0.00058		ng/g	
			233'4'-Tetra CB(56)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			233'5-TetraCB-(57)	2021/02/22	0.00054 U, EDL=0.00054		ng/g	
			233'5'-TetraCB-(58)	2021/02/22	0.00059 U, EDL=0.00059		ng/g	
			TetraCB-(59)+(62)+(75)	2021/02/22	0.00058 U, EDL=0.00058		ng/g	
			2344'-TetraCB -(60)	2021/02/22	0.00058 U, EDL=0.00058		ng/g	
			TetraCB-(61)+(70)+(74)+(76)	2021/02/22	0.00054 U, EDL=0.00054		ng/g	
			234'5-TetraCB-(63)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			234'6-TetraCB-(64)	2021/02/22	0.00063 U, EDL=0.00063		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			2-MonoCB-(1)	2021/02/22	0.00014 U, EDL=0.00014		ng/g	
			3-MonoCB-(2)	2021/02/22	0.00012 U, EDL=0.00012		ng/g	
			4-MonoCB-(3)	2021/02/22	0.00013 U, EDL=0.00013		ng/g	
			22'-DiCB-(4)	2021/02/22	0.00039 U, EDL=0.00039		ng/g	
			2,3-DiCB-(5)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			2,3'-DiCB-(6)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			2,4-DiCB-(7)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			2,4'-DiCB-(8)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			2,5-DiCB-(9)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			2,6-DiCB-(10)	2021/02/22	0.00042 U, EDL=0.00042		ng/g	
			3,3'-DiCB-(11)	2021/02/22	0.0150, EDL=0.00016		ng/g	
			DiCB-(12)+(13)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			3,5-DiCB-(14)	2021/02/22	0.00015 U, EDL=0.00015		ng/g	
			4,4'-DiCB-(15)	2021/02/22	0.00025 U, EDL=0.00025		ng/g	
			22'3-TriCB-(16)	2021/02/22	0.00063 U, EDL=0.00063		ng/g	
			22'4-TriCB-(17)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			TriCB-(18)+(30)	2021/02/22	0.00036 U, EDL=0.00036		ng/g	
			22'6-TriCB-(19)	2021/02/22	0.00033 U, EDL=0.00033		ng/g	
			TriCB-(20) + (28)	2021/02/22	0.00027 U, EDL=0.00027		ng/g	
			TriCB-(21)+(33)	2021/02/22	0.00027 U, EDL=0.00027		ng/g	
			234'-TriCB-(22)	2021/02/22	0.00029 U, EDL=0.00029		ng/g	
			235-TriCB-(23)	2021/02/22	0.00031 U, EDL=0.00031		ng/g	
			236-TriCB-(24)	2021/02/22	0.00030 U, EDL=0.00030		ng/g	
			23'4-TriCB-(25)	2021/02/22	0.00025 U, EDL=0.00025		ng/g	
			TriCB-(26)+(29)	2021/02/22	0.00028 U, EDL=0.00028		ng/g	
			23'6-TriCB-(27)	2021/02/22	0.00031 U, EDL=0.00031		ng/g	
			24'5-TriCB-(31)	2021/02/22	0.00026 U, EDL=0.00026		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			23'44'-TetraCB-(66)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			23'45-TetraCB-(67)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			23'45'-TetraCB-(68)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			23'55'-TetraCB-(72)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			23'5'6-TetraCB-(73)	2021/02/22	0.00053 U, EDL=0.00053		ng/g	
			33'44'-TetraCB-(77)	2021/02/22	0.00078 U, EDL=0.00078		ng/g	
			33'45-TetraCB-(78)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			33'45'-TetraCB(79)	2021/02/22	0.00051 U, EDL=0.00051		ng/g	
			33'55'-TetraCB-(80)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			344'5-TetraCB-(81)	2021/02/22	0.00076 U, EDL=0.00076		ng/g	
			22'33'4-PentaCB-(82)	2021/02/22	0.00073 U, EDL=0.00073		ng/g	
			PentaCB-(83)+(99)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			22'33'6-PentaCB-(84)	2021/02/22	0.00075 U, EDL=0.00075		ng/g	
			PentaCB-(85)+(116)+(117)	2021/02/22	0.00055 U, EDL=0.00055		ng/g	
			PentaCB-(86)(87)(97)(109)(119)(125)	2021/02/22	0.00055 U, EDL=0.00055		ng/g	
			PentaCB-(88)+(91)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'346'-PentaCB-(89)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			PentaCB-(90)+(101)+(113)	2021/02/22	0.00110 J, EDL=0.00057		ng/g	
			22'355'-PentaCB-(92)	2021/02/22	0.00066 U, EDL=0.00066		ng/g	
			PentaCB-(93)+(98)+(100)+(102)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'356'-PentaCB-(94)	2021/02/22	0.00071 U, EDL=0.00071		ng/g	
			22'35'6-PentaCB-(95)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'366'-PentaCB-(96)	2021/02/22	0.00016 U, EDL=0.00016		ng/g	
			22'45'6-PentaCB-(103)	2021/02/22	0.00060 U, EDL=0.00060		ng/g	
			22'466'-PentaCB-(104)	2021/02/22	0.000099 U, EDL=0.000099		ng/g	
			233'44'-PentaCB-(105)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			233'45-PentaCB-(106)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			233'4'5-PentaCB-(107)	2021/02/22	0.00059 U, EDL=0.00059		ng/g	
			PentaCB-(108)+(124)	2021/02/22	0.00055 U, EDL=0.00055		ng/g	
			PentaCB-(110)+(115)	2021/02/22	0.00109 J, EDL=0.00049		ng/g	
			233'55'-PentaCB-(111)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			233'56-PentaCB-(112)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			2344'5-PentaCB-(114)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			23'44'5-PentaCB-(118)	2021/02/22	0.00129, EDL=0.00066		ng/g	
			23'455'-PentaCB-(120)	2021/02/22	0.00047 U, EDL=0.00047		ng/g	
			23'45'6-PentaCB-(121)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			233'4'5'-PentaCB-(122)	2021/02/22	0.00061 U, EDL=0.00061		ng/g	
			23'44'5'-PentaCB-(123)	2021/02/22	0.00070 U, EDL=0.00070		ng/g	
			33'44'5-PentaCB-(126)	2021/02/22	0.00062 U, EDL=0.00062		ng/g	
			33'455'-PentaCB-(127)	2021/02/22	0.00051 U, EDL=0.00051		ng/g	
			HexaCB-(128)+(166)	2021/02/22	0.00051 U, EDL=0.00051		ng/g	
			HexaCB-(129)+(138)+(163)	2021/02/22	0.00260 J, EDL=0.00054		ng/g	
			22'33'45'-HexaCB-(130)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'33'46-HexaCB-(131)	2021/02/22	0.00076 U, EDL=0.00076		ng/g	
			22'33'46'-HexaCB-(132)	2021/02/22	0.00067 U, EDL=0.00067		ng/g	
			22'33'55'-HexaCB-(133)	2021/02/22	0.00064 U, EDL=0.00064		ng/g	
			HexaCB-(134)+(143)	2021/02/22	0.00066 U, EDL=0.00066		ng/g	
			HexaCB-(135)+(151)	2021/02/22	0.00097 U, EDL=0.00097		ng/g	
			22'33'66'-HexaCB-(136)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			22'344'5-HexaCB-(137)	2021/02/22	0.00067 U, EDL=0.00067		ng/g	
			HexaCB-(139)+(140)	2021/02/22	0.00057 U, EDL=0.00057		ng/g	
			22'3455'-HexaCB-(141)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			22'3456-HexaCB-(142)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'345'6-HexaCB-(144)	2021/02/22	0.0010 U, EDL=0.0010		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'3466'-HexaCB-(145)	2021/02/22	0.00073 U, EDL=0.00073		ng/g	
			22'34'55'-HexaCB-(146)	2021/02/22	0.00047 U, EDL=0.00047		ng/g	
			HexaCB-(147)+(149)	2021/02/22	0.00198 J, EDL=0.00057		ng/g	
			22'34'56'-HexaCB-(148)	2021/02/22	0.00096 U, EDL=0.00096		ng/g	
			22'34'66'-HexaCB-(150)	2021/02/22	0.00071 U, EDL=0.00071		ng/g	
			22'3566'-HexaCB-(152)	2021/02/22	0.00068 U, EDL=0.00068		ng/g	
			HexaCB-(153)+(168)	2021/02/22	0.00242 J, EDL=0.00046		ng/g	
			22'44'56'-HexaCB-(154)	2021/02/22	0.00086 U, EDL=0.00086		ng/g	
			22'44'66'-HexaCB-(155)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			HexaCB-(156)+(157)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			233'44'6-HexaCB-(158)	2021/02/22	0.00040 U, EDL=0.00040		ng/g	
			233'455'-HexaCB-(159)	2021/02/22	0.00043 U, EDL=0.00043		ng/g	
			233'456-HexaCB-(160)	2021/02/22	0.00044 U, EDL=0.00044		ng/g	
			233'45'6-HexaCB-(161)	2021/02/22	0.00041 U, EDL=0.00041		ng/g	
			233'4'55'-HexaCB-(162)	2021/02/22	0.00043 U, EDL=0.00043		ng/g	
			233'4'5'6-HexaCB-(164)	2021/02/22	0.00040 U, EDL=0.00040		ng/g	
			233'55'6-HexaCB-(165)	2021/02/22	0.00043 U, EDL=0.00043		ng/g	
			23'44'55'-HexaCB-(167)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	
			33'44'55'-HexaCB-(169)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			22'33'44'5-HeptaCB-(170)	2021/02/22	0.00140 J, EDL=0.00063		ng/g	
			HeptaCB-(171)+(173)	2021/02/22	0.00074 U, EDL=0.00074		ng/g	
			22'33'455'-HeptaCB-(172)	2021/02/22	0.00077 U, EDL=0.00077		ng/g	
			22'33'456'-HeptaCB-(174)	2021/02/22	0.00140 J, EDL=0.00066		ng/g	
			22'33'45'6-HeptaCB-(175)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			22'33'466'-HeptaCB-(176)	2021/02/22	0.00036 U, EDL=0.00036		ng/g	
			22'33'45'6'-HeptaCB-(177)	2021/02/22	0.00076 U, EDL=0.00076		ng/g	
			22'33'55'6-HeptaCB-(178)	2021/02/22	0.00052 U, EDL=0.00052		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'566'-HeptaCB-(179)	2021/02/22	0.00057 J, EDL=0.00043		ng/g	
			HeptaCB-(180)+(193)	2021/02/22	0.00333 J, EDL=0.00062		ng/g	
			22'344'56-HeptaCB-(181)	2021/02/22	0.00073 U, EDL=0.00073		ng/g	
			22'344'56'-HeptaCB-(182)	2021/02/22	0.00050 U, EDL=0.00050		ng/g	
			22'344'5'6-HeptaCB-(183)	2021/02/22	0.00084 J, EDL=0.00073		ng/g	
			22'344'66'-HeptaCB-(184)	2021/02/22	0.00035 U, EDL=0.00035		ng/g	
			22'3455'6-HeptaCB-(185)	2021/02/22	0.00070 U, EDL=0.00070		ng/g	
			22'34566'-HeptaCB-(186)	2021/02/22	0.00038 U, EDL=0.00038		ng/g	
			22'34'55'6-HeptaCB-(187)	2021/02/22	0.00143 J, EDL=0.00048		ng/g	
			22'34'566'-HeptaCB-(188)	2021/02/22	0.00037 U, EDL=0.00037		ng/g	
			233'44'55'-HeptaCB-(189)	2021/02/22	0.00039 U, EDL=0.00039		ng/g	
			233'44'56-HeptaCB-(190)	2021/02/22	0.00059 U, EDL=0.00059		ng/g	
			233'44'5'6-HeptaCB-(191)	2021/02/22	0.00056 U, EDL=0.00056		ng/g	
			233'455'6-HeptaCB-(192)	2021/02/22	0.00062 U, EDL=0.00062		ng/g	
			22'33'44'55'-OctaCB-(194)	2021/02/22	0.00080 U, EDL=0.00080		ng/g	
			22'33'44'56-OctaCB-(195)	2021/02/22	0.00084 U, EDL=0.00084		ng/g	
			22'33'44'56'-OctaCB-(196)	2021/02/22	0.00071 U, EDL=0.00071		ng/g	
			22'33'44'66'OctaCB-(197)	2021/02/22	0.00060 U, EDL=0.00060		ng/g	
			OctaCB-(198)+(199)	2021/02/22	0.00101 J, EDL=0.00071		ng/g	
			22'33'4566'-OctaCB-(200)	2021/02/22	0.00041 U, EDL=0.00041		ng/g	
			22'33'45'66'-OctaCB-(201)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			22'33'55'66'-OctaCB-(202)	2021/02/22	0.00046 U, EDL=0.00046		ng/g	
			22'344'55'6-OctaCB-(203)	2021/02/22	0.00065 U, EDL=0.00065		ng/g	
			22'344'566'-OctaCB-(204)	2021/02/22	0.00049 U, EDL=0.00049		ng/g	
			233'44'55'6-OctaCB-(205)	2021/02/22	0.00084 U, EDL=0.00084		ng/g	
			22'33'44'55'6-NonaCB-(206)	2021/02/22	0.00038 U, EDL=0.00038		ng/g	
			22'33'44'566'-NonaCB-(207)	2021/02/22	0.00033 U, EDL=0.00033		ng/g	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			22'33'455'66'-NonaCB-(208)	2021/02/22	0.00040 U, EDL=0.00040		ng/g	
			DecaCB-(209)	2021/02/22	0.00069 U, EDL=0.00069		ng/g	
			Total PCB	2021/02/22	0.0355		ng/g	
7213064	AGU	Method Blank	Confirmation 2,3,7,8-Tetra CDF	2021/02/18	0.14 U, EDL=0.14		pg/g	
			Confirmation C13-2378 TetraCDF	2021/02/18		48	%	40 - 135
7213064	AGU	RPD - Sample/Sample Dup	Confirmation 2,3,7,8-Tetra CDF	2021/02/18	27		%	100

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Native recovery is outside method criteria, due to matrix effects in the parent sample

(2) Duplicate results exceeded RPD acceptance criteria. This may be due to sample heterogeneity.

(3) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

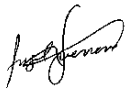
(4) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Bureau Veritas Laboratories 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

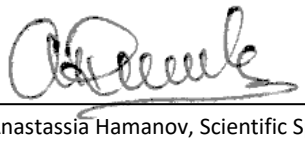
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS



Anastassia Hamanov, Scientific Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

22-Jan-21 12:30
Lori Dufour
C118615

URE ENV-1338

SUBCONTRACT ORDER
Apex Laboratories
A0J0312

dt

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

BV Labs / Maxxam
C/O FEDEX DEPOT 299 Cayuga Rd
Cheektowaga, NY 14225
Phone :(800) 668-0639
Fax: (905) 332-9169

International Solid Sample
Heat Treat Required
High Risk material
Controlled Storage and Disposal

Sample Name: T4RB-16U **Soil** **Sampled: 10/07/20 10:10** (A0J0312-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/27/20 17:00	04/05/21 10:10	BV/ Maxxam -- Level 4 Data package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-16L-O52C **Soil** **Sampled: 10/07/20 13:05** (A0J0312-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/27/20 17:00	04/05/21 13:05	BV/ Maxxam -- Level 4 Data package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-16L-OO **Soil** **Sampled: 10/07/20 13:35** (A0J0312-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/27/20 17:00	04/05/21 13:35	BV/ Maxxam -- Level 4 Data package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-17L **Soil** **Sampled: 10/08/20 10:25** (A0J0312-05)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	02/19/21 17:00	04/06/21 10:25	Level 4 Data Package: +1/19
1668C PCB Congeners (SUB)	02/19/21 17:00	10/22/20 10:25	Level 4 Data Package: +1/19
Dry Weight (SUB)	02/19/21 17:00	04/06/21 10:25	BV Lab

Containers Supplied:
(C)8 oz Glass Jar

STANDARD TAT

Released By	Date	Received By	Date
	1-22-21	Fed Ex (Shipper)	
Fed Ex (Shipper)		FW/ALEXANDRA FODOR	2021/01/22 1.9/1.4/2.4
Released By	Date	Received By	Date
			12:30

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SUBCONTRACT ORDER

Apex Laboratories

A0I0826

SENDING LABORATORY:	RECEIVING LABORATORY:
Apex Laboratories	BV Labs / Maxxam
6700 S.W. Sandburg Street	C/O FEDEX DEPOT 299 Cayuga Rd
Tigard, OR 97223	Cheektowaga, NY 14225
Phone: (503) 718-2323	Phone :(800) 668-0639
Fax: (503) 336-0745	Fax: (905) 332-9169
Project Manager: Darrell Auvil	

See Next page.

Sample Name: T4RB-23L Soil Sampled: 09/28/20 11:50 (A0I0826-01)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 11:50	BV Maxxam – Level 4 Data package
1699 Insecticides/Pesticides (SUB)	02/01/21 17:00	10/12/20 11:50	Dieldrin ONLY – RDL is 0.05ng/g and MDL is 0.0076ng/g Level 4 DP

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-23L Soil Sampled: 09/28/20 12:15 (A0I0826-02)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 12:15	BV Maxxam – Level 4 Data package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-24L Soil Sampled: 09/28/20 12:35 (A0I0826-03)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 12:35	BV Maxxam – Level 4 Data package

Containers Supplied:
(C)8 oz Glass Jar

Sample Name: T4RB-24L Soil Sampled: 09/28/20 12:50 (A0I0826-04)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	10/20/20 17:00	03/27/21 12:50	BV Maxxam – Level 4 Data package

Containers Supplied:
(C)8 oz Glass Jar

Released By	Date	Received By	Date
	1-21-21	Fed Ex (Shipper)	
Fed Ex (Shipper)		Fx/ALEXANDRA FODOR	2021/01/22 1:5/1.4/2.4
Released By	Date	Received By	Date
			12:30

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DA 1/21/21